2024 SUSTAINABILITY REPORT

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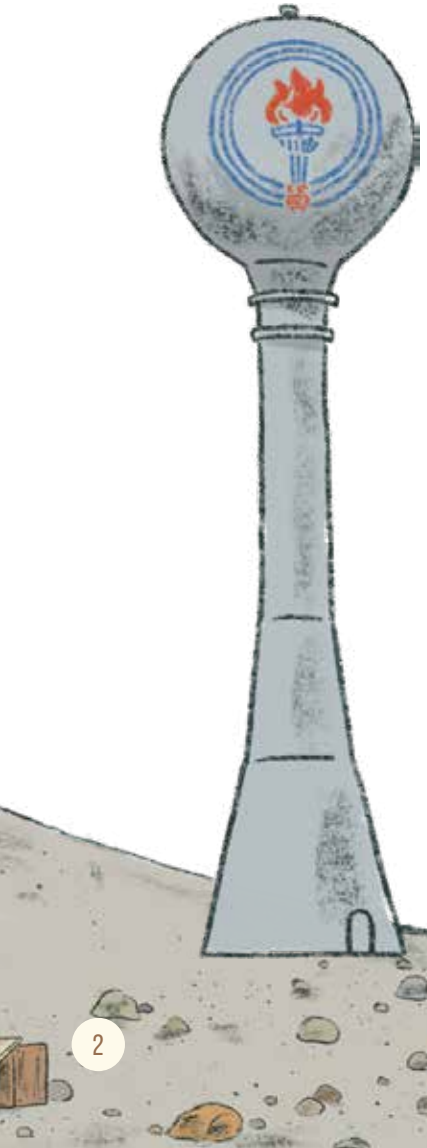

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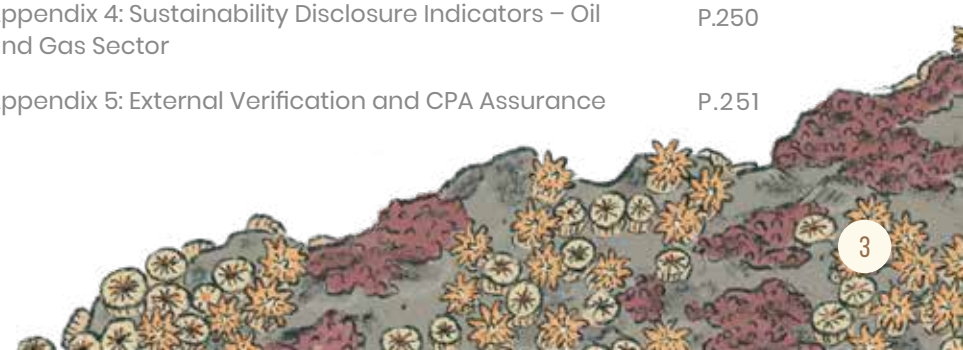


Introduction

Report Profile

CPC Corporation, Taiwan (referred to as CPC throughout the report) has always valued interaction and communication with stakeholders and considers them to be the foundation for business continuity. CPC has been preparing sustainability reports voluntarily since 2007; the 2024 report marks the 16th issue, and it is intended not only to disclose CPC's sustainability goals, strategies, and progress, but also to address ESG issues that are of concern to the general public.

Cover story

CPC's contribution to co-prosperity and environmental sustainability

The visual theme combines a Mobius loop with previous animals and plants in Taiwan to signify circularity and coexistence with the ecosystem. It conveys CPC's respect for ecosystem and biodiversity across all aspects of operation, as well as the efforts it makes to deliver operational excellence while ensuring protection and coexistence of the environment. By supporting sustainable growth, ecosystem protection, innovative technologies, and social responsibilities, CPC hopes to create values for generations to come.

Scope of Report and Reporting Period

This report covers the period from January 1 to December 31, 2023; data from periods before January 1, 2023 and after December 31, 2023 may be mentioned to complete performance disclosure for various projects and campaigns. The previous report was published in June 2023, and there have been no restatements of information or material changes to report boundaries. This report provides information regarding the activities of CPC headquarters and affiliates. Environmentally, the report boundaries mainly cover the performance of the Taoyuan Refinery Plant, Dalin Refinery Plant, and Linyuan Petrochemical Plant. For matters and data not disclosed in this report, please visit our corporate website (https://www.cpc.com.tw/).

CPC website

Sustainability disclosure framework and indicators

We have prepared this report in accordance with the GRI Sustainability Reporting Standards (GRI Standards) published by the Global Sustainability Standards Board (GSSB), and disclosed information on CPC's current ESG practices as well as domestic and foreign trends using GRI 11: Oil and Gas Sector Disclosures 2021. Standards of the Sustainability Accounting Standards Board (SASB) and indicators of the Task Force on Climate-related Financial Disclosures (TCFD) were used as reference for the disclosure of CPC's current practices and domestic/foreign ESG trends for 2023. The following guidelines and initiatives were also taken into consideration:

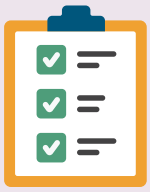
The Global Compact's Ten Principles	AA1000 Accountability Stakeholder Engagement Standard (AA1000SES)
United Nations Sustainable Development Goals (SDGs)	ISO 26000 Social Responsibility Guidance
GRI Sustainability Reporting Standards version 2021	GRI 11 sector standard: Oil and Gas version 2021
Standards of Sustainability Accounting Standards Board (SASB)	Recommendations of Task Force on Climate-related Financial Disclosures (TCFD)
TWSE sustainability disclosure standards Appendix 1-7 – Oil and Gas Sector	Taskforce on Nature-related Financial Disclosures (TNFD)

» Note: The report is prepared based on the eight principles of GRI Sustainability Reporting Standards (version 2021), namely: accuracy, balance, clarity, comparability, completeness, sustainability context, timeliness, and verifiability. Data was sourced from internal departments that had been reviewed by senior managers, and the report has been published following the review and approval of the Sustainable Operations Promotion Committee.

Report Quality Control Workflow and Data Calculation Basis

Report Editing

Established the "2024 Sustainability Report Editing Panel," with the Vice President of the Department of Planning (DoP) as the convener, the DoP as the executive secretary, and members from all business divisions, research units, and staffing offices.



Report Content Review

After consolidating and editing, the DoP sent the first draft to panel members to review the contents in relation to their functions and duties. After third-party external verification, the DoP revised the draft with respect to the verification comments before finalization. Lastly, the DoP submitted the Report for approval according to the administrative procedure prior to publication.

External Assurance of the Report

This Report has been verified and assured by the British Standards Institution (BSI) and Ernst & Young to comply with,

- BSI: GRI Standards 2021, AA1000 AS v3 (with 2018 addendum) and Type 1 Moderate Assurance Standard
- EY: ISAE 3000 assurance (3 aspects)

All financial data contained in this Report is extracted from CPA-certified financial statements, and all values are expressed in New Taiwan dollars. Some statistics are quoted from the open information of government agencies (e.g. EPA). ISO 14064-1, ISO 14067, ISO 14001, and ISO 45001 are certified by third-party certification bodies.

Contact

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Opinions and feedbacks

Message from the management

The previous year had been of challenges and changes. Despite the imminent threats associated with climate change and energy transformation, CPC adhered to its sustainability vision and committed additional efforts into energy supply, environmental protection, and social engagement, hoping to provide people with a greener, safer, and healthier environment. CPC holds the conviction that only when economic, social, and environmental interests are addressed at the right balance may businesses thrive over the long term. In the future, CPC will continue to undergo transformations, upgrades, and optimize the corporate structure to better support the nation's development goals. Meanwhile, attention will be directed toward exploring new technologies and new energy sources as the means to realize our low carbon vision.

Enduring the energy shortage

For the last 3 years, CPC has supported the nation's policies and absorbed much of the energy price hike and inflationary pressure that may otherwise be passed on to consumers, and supplied energy to domestic users at a loss. However, being a state-owned enterprise and leader of the energy industry, CPC embraces its responsibility to ensure the stability of consumer prices and energy supply. For the past year, CPC had directed attention and efforts to measures such as revenue expansion, cost reduction, procurement optimization, and efficiency improvement in an attempt to create new opportunities amidst the challenges ahead.

Climate actions and the three transformation strategies

Inspired by ESG values, CPC has devised three net zero transformation strategies to guide its sustainability efforts, which include: "High-value Petrochemical" – creation of high value fuel; "Low-Carbon Emission" – exploring low carbon procedures that mitigate climate change; and "Lean-Renewable Energy" – transitioning from low carbon natural gas to zero carbon alternatives. All three strategies have yielded prominent results to date.With regards to "High-value Petrochemical", CPC has committed significant efforts into improving the refinery process, bringing values to chemical products, and adopting carbon capture and utilization technologies. CPC was also able to leverage its R&D strength in carbon fiber composites and develop proprietary design of barrels made with aerospace grade composite materials. Additionally, CPC invites domestic and foreign key players to create local industry clusters and help build up production capacity for catalysts in Taiwan. By constructing Advance Catalyst Center as a pilot site for next-generation smart production, CPC takes lead in the petrochemical industry's transition into "Industry 4.0." Meanwhile, CPC will continue turning crude oil into top-grade materials for aerospace.

In terms of "Low-Carbon Emission", CPC executed a total of 62 energy and carbon reduction measures in 2023 that aimed to adopt the use of low carbon fuel, replace outdated equipment, and enhance energy management. These measures aggregately reduced carbon by 262,000 metric tons (MT) and saved oil usage by 74,000 kiloliters. CPC has set medium-term targets to reduce carbon emissions by 40.6% and 49.5% by 2025 and 2030, respectively, compared to the 2005 baseline. Through solutions such as energy efficiency improvement, energy management enhancement, regional energy and resource integration, use of renewable energy sources, carbon capture and storage, hydrogen power, and use of carbon neutral natural gas, the organization takes pragmatic steps toward achieving net zero.

As for "Lean-Renewable Energy", CPC continues its geothermal project in Ruisui, Hualien, and will be proceeding with geological survey, excavation, and well construction. Geothermal power plants at Tuchang, Yilan, are due for completion in the near future. In support of the government-assigned mission to supply hydrogen power, CPC will be constructing a pilot hydrogen fuel station in the short term to signify the nation's move toward hydrogen power and to develop the necessary technologies. Medium- and long-term plans have been made to develop production capacity for blue hydrogen, whereas hydrogen power transfer and storage facilities will be constructed in accordance with the national spatial plan to supply hydrogen to industrial users as well as vehicles.

Supporting UN SDGs for ecosystem and economic benefits

CPC continued to protect Earth's precious resources with action in 2023, and managed to turn in prominent results in terms of ecosystem preservation. Owing to our relentless restoration efforts in the Guantang area since 2019, the number of endangered coral – polycyathus chaishanensis has increased from 75 to more than 100, and new coral clusters are being discovered; meanwhile, the number of crustose coralline algae species has also increased from single digit to more than 20. CPC's ecosystem preservation efforts have proven effective in restoring life under water. In the meantime, CPC cooperates with Taoyuan City Government and Taoyuan City Wild Bird Association to construct habitats for little terns, a rare and valuable species, in the coastal areas of Taoyuan, which significantly increased the success rate of restoration efforts from less than 30% to more than 70%. In the future, CPC will continue fulfilling its environmental commitments and carry out ecosystem preservation tasks under the supervision and professional guidance of Guantang Executive Committee. CPC will also work with experts from various fields to maintain the environment and ecosystem in the Guantang area as part of its corporate social responsibilities and respect for United Nation's Sustainable Development Goals (SGDs), and fulfill its commitment to "preserve algal reef in the presence of the 3rd gas receiving station," thereby cater for economic development and sustainability of the ecosystem at the same time.

Exerting influence toward social inclusion

CPC has been hiring persons with developmental retardation and training persons with mental or physical disability to work at compassion gas stations since 2022, and for which it was awarded "ACES Top Community Centric Companies in Asia Award" in 2023. Being the first Asian enterprise to win this award, CPC helped put flag of The Republic of China on the map. In October and December 2023, CPC organized the "77th Anniversary Concert" followed by the "2023 Charity Concert," during which it invited persons with rare diseases and disabilities to perform. These gestures are indicative of CPC's unwavering care for the underprivileged.

Furthermore, CPC coordinated franchisees to clean up public toilets on the United Nations World Toilet Day (November 19) for the 3rd consecutive year, and has been supporting top athletes since 2009 by sponsoring sports teams in remote areas, for which it received Sports Activist Awards on multiple occasions. All employees of CPC make persistent contributions to the growth and co-prosperity in Taiwan.

A decorated leader in sustainability

CPC's ESG practices have been well recognized locally and abroad, and won a total of 40 awards in 2023 including: Consumer's Ideal Brand by "Management Magazine"; Trusted Brand by "Reader's Digest"; Asia Responsible Enterprise Awards (AREA); Asia Corporate Excellence & Sustainability Awards (ACES); BSI Sustainability Resilience Pilot Award; Taiwan Sustainability Action Award (TSAA); Global Corporate Sustainability Awards (GCSA); Taiwan Corporate Sustainability Awards (TCSA); CSR and ESG Awards by "Global Views Magazine"; National Brand Yushan Award; Taiwan Innotech Expo; Sports Facilitator Award by the Ministry of Education; National Innovation Awards; Public Construction Excellence Awards; Gender Equality Award by the Executive Yuan; and National Corporate Environmental Protection Awards. CPC won many national top awards particularly in the ESG and sustainability category, and continued to lead state-owned enterprises in performance while ranking among the nation's top enterprises in award count.
CPC's actions to reduce carbon and "mitigate" and "adapt" to climate change will no longer be treated as voluntary acts of kindness, but obligatory duties that make up part of the operating cost in the near future. In recent years, CPC has been actively promoting its ESG philosophy through department meetings, business activities, performance targets, internal/external publications, and the media; by incorporating ESG mindset and actions into daily business operations, we make ESG a part of our culture and employees' DNA, and in doing so support CPC's sustainable growth.

Chairman

President

2023 Sustainability Recognition | Outcome

2023 ATD Excellence in Practice Award

2023 Excellence in Practice Award Winners

2023 Excellence in Practice Award Winners

Gold Award – Method for extracting sarcodia suieae, the sarcodia suieae extract, and uses

Silver Award – Method for forming alicyclic polycarboxylic acids through hydrogenation of benzene polycarboxylic acids

Bronze Award – Method for producing phosphate (2,6 dimethyl phenylene oxide) oligomer and solidified matters

Bronze Award – Method for producing synthetic graphite

Bronze Award – Device for retracting cables

Bronze Award – Geothermal well re-injection water recycling system

3rd Green Chemistry Application and Innovation Award

Green Safety Alternatives Award – Group Division

Carbon Label Certification

On September 8, 2023, CPC's Lubricant Business Division became the first in Taiwan to receive a carbon label for "Water Resistant E.P. Grease No. 1 (180 kg)" from the Ministry of Environment.

Protection Award of 5th National Enterprise Environmental

The Refining & Manufacturing Research Institute and Exploration & Development Research Institute won the **Bronze Award**

2022 Performance Rating of the National Environmental Education Action Plan

Honorable Mention

2022 of Excellent Clean Air Zone Sponsor

Role Model as Excellent Clean Air Zone Sponsor – 2022

2023 of Green and Sustainable Remediation Award

Wugu Petrol Station, Hsinchu Oil Supply Center, and Taichung Oil Supply Center were named outstanding performers

RSC Poster

Most Popular Social Network Award

2nd Place in Materials Development

Symposium on Fracture Science

Outstanding Thesis Award - Cause of leakage in soldering of high-temperature hydrogen pipelines

Trusted Brand Platinum Award

- CPC won Trusted Brand Gold Awards for 3 years, followed by Platinum Awards in 2022 and 2023, as the only lubricant product to receive this distinction.
- **Trusted Brand Platinum Award** – Petrol Station Category for 23 consecutive years

Asia Corporate Excellence & Sustainability Awards, ACES

Community Initiative Award - Top Community Centric Companies in Asia Award

Asia Responsible Enterprise Awards, AREA

Corporate Sustainability Report Awards, Human Resources Investment Award, Responsible Business Leadership - Chairman Shun-Chin Lee

Taiwan Corporate Sustainability Award (TCSA)

Taiwan Top 100 Sustainable Enterprises Award - Corporate Comprehensive Performance

Corporate Sustainability Report Award (Chinese) - Energy Industry Category 1 - Gold

Single Category Sustainability Performance Awards - Social Inclusion Leadership Award, Gender Equality Leader, Talent Development Leader, Growth through Innovation Leader, and Creative Communication Leadership Award

Sustainability Talent Award - Chairman Shun-chin Lee

Global Corporate Sustainability Award

Great Practice of 2023—Stepping Towards a Green Future: CPC Leading in Climate Change、Clean Geothermal Power, Just Transition

2023 Asia-Pacific Sustainability Action Awards (APSAA)

Gold – Enter62ing the underground: CPC geothermal energy
Sliver – CPC's Road toward Gender Equity
Sliver – The Pioneer of Petrochemical Carbon Footprint
Sliver – The Sustainable Cradle of CPC
Gold – CPC the Green Promoter
Gold – CPC Explores Geothermal Power
Bronze – Gender Equality in CPC

2023 Taiwan Biodiversity Awards (TWBA)

Gold – Dances with Nature

20th The National Brand Yushan Award

Outstanding Enterprise Category - CPC Corporation

Best Product Category - Aerial refueling AI-assisted real-time monitoring system; Precision Environment Inspection Vehicle – an innovative underground contamination detection technology for petrol stations and oil supply centers; Asphalt quality improvement; dearomatized eco-friendly solvent D50; See Clean eco-friendly detergent, CPC Racing SN Motor Oil. AI object detection in current spectrum of rotating machinery for predictive maintenance and composite material cylinder for optics payload.

Most Popular Brand - See Clean eco-friendly detergent, CPC Racing SN Motor Oil.

Outstanding Enterprise National First Award - CPC Corporation.

National Best Product - Asphalt quality improvement.

Yung Chi Paint & Varnish Anti-corrosion Award

Anti-corrosion Education Award

Certification for Top Nursery Facility

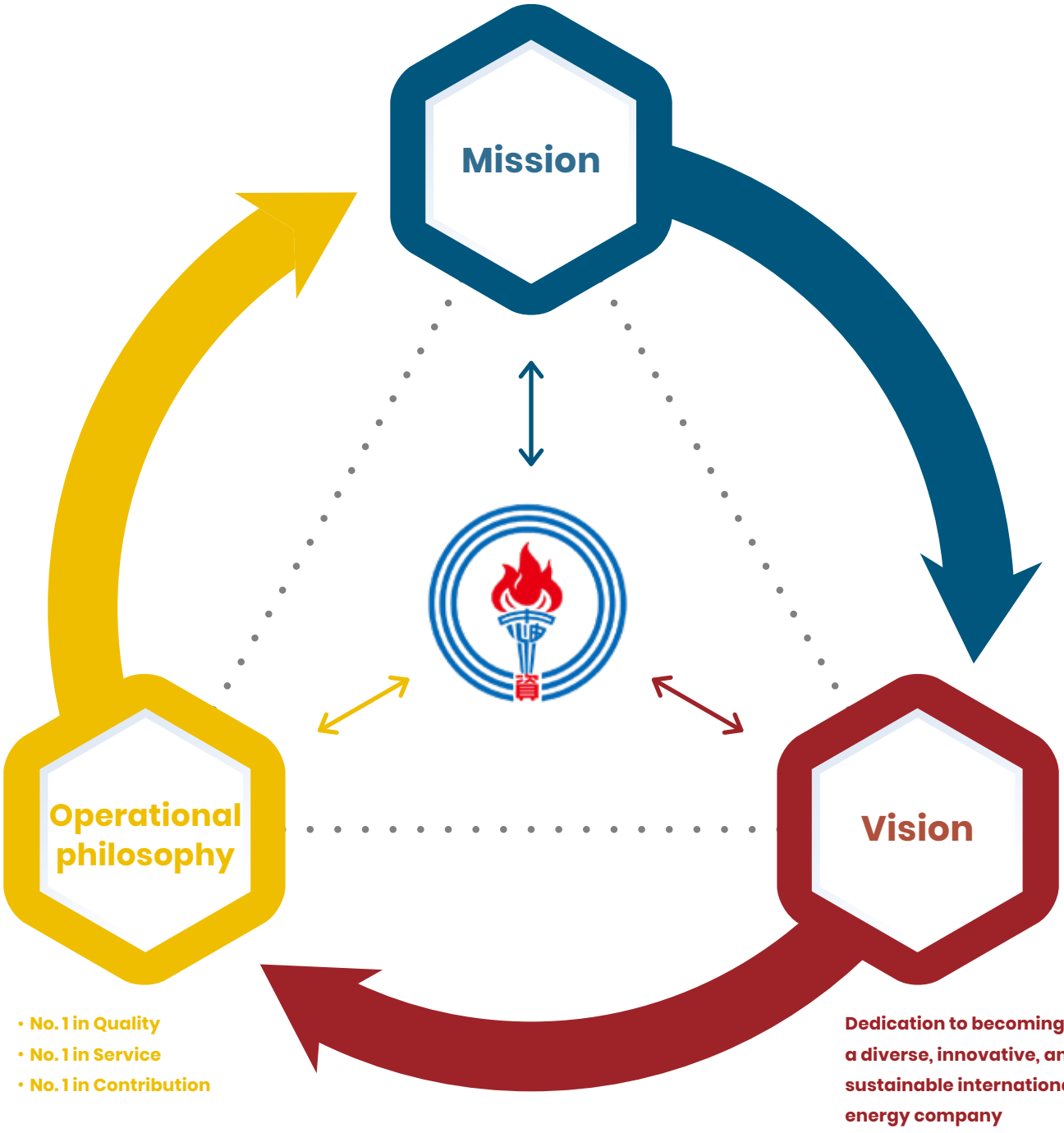
CPC Building received the Excellence rating

BSI Sustainability Resilience Award

Sustainability Resilience Excellence Award

CPC's Sustainability Roadmap

- **Consistent energy supply**
- **Diverse service**
- **Sustainable development**

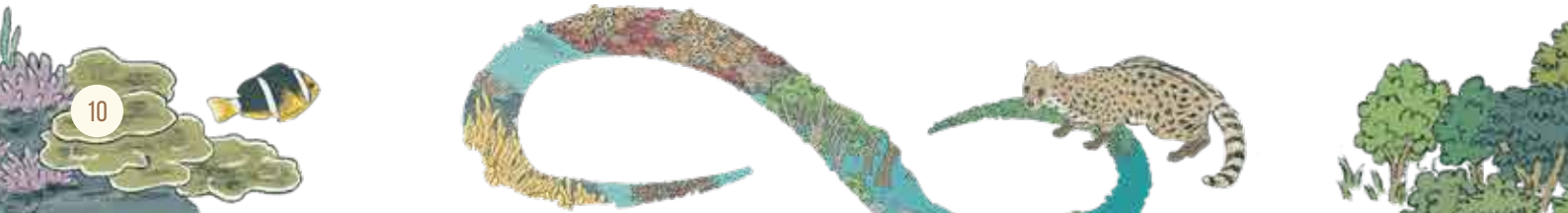


- **No. 1 in Quality**
- **No. 1 in Service**
- **No. 1 in Contribution**

Dedication to becoming a diverse, innovative, and sustainable international energy company

Sustainability Strategies and Goals

CPC was founded in 1946, and for more than 70 years, it has shouldered the responsibility of a state-owned enterprise and stabilized oil and gas prices while ensuring adequate supply of oil and gas to domestic users, thereby helping mid-stream and downstream participants of the petrochemical industry grow. CPC is also dedicated to improving the quality of the environment, and fulfills its corporate social responsibilities to cater for the interests of all members of the society. CPC first established its sustainability management policy back in 2003; the policy has since been reviewed and adjusted time and time again to conform with environmental protection trends around the world, and below is the 2022 amendment last amended and approved by the board of directors.



	Sustainability ManagementPolicy	Strategic goals and value creation	CPC's sustainability role
Environmental	**Make efficient use of resources and reduce water and energy on an ongoing basis** **Adopt total clean production and protect the ecosystem**	· Commit to climate actions and support greenhouse gas reduction · Supply low-carbon, green energy and enforce preservation of the ecosystem	Climate Protection Company Clean Power Company
Social	**CSR Emphasis and Service Expansion**	· Create a happy, friendly workplace and train a group of professional employees · Give back to the community; implement environmental/ energy education · Embrace energy transformation challenges; create a net zero and sustainable future	Caring Personal Career Cultivating Prosperity for Community Committing a Premium Century
Governance	**Environmental Indicators and Information Transparency** **Proactive R&D and Domain Cultivation** **Legal Compliance and Abidance with International Conventions**	· Contribute to treasury income; stabilize energy and consumer prices · Strive to deliver top-notch quality and the best service	Creating Profit to Country Customer's Perfect Choice Coexistence Partnership & Co-glory

Facilitating net zero transformation and sustainable management

Extreme weathers have increased in severity in recent years. By the end of 2023, about 140 nations worldwide had set net zero targets and implemented policies to accomplish them. Taiwan, too, has announced its 2050 net zero emission goals in line with the rest of the world. Being a state-owned enterprise and a leader of the petrochemical/ energy industry, CPC has adopted three transformation strategies with different emphases on High-value Petrochemical, Low-Carbon Emission and Lean-Renewable Energy". Meanwhile, CPC continues to direct attention to the latest low carbon trends, and takes pragmatic actions to reduce emission, improve fuel quality, develop renewable energy sources and carbon negative technologies, and work with all stakeholders toward exploring new business opportunities for a sustainable, net zero future.

High-value Petrochemical

Short-term	Medium-term	Long-term
Convert oil to petrochemical products	Convert petrochemical products to high value materials	New materials industry

Growth of electric vehicles will eventually lessen demand for oil products, and CPC will aim to adapt to the change from both the production and sale perspectives. Research and development will be the key to driving corporate transformation, as it allows timely adjustments to the refining/production structure and facilitates transition into "crude oil to chemicals" (COTC). Through adoption of COTC, CPC hopes to reduce production of fuel in favor of petrochemical products, and take this opportunity to develop advanced new materials needed for the domestic semiconductors, aerospace, or biomedicine industries.

Performance highlight:

- Application of amorphous carbon anode materials, lithium-titanium oxide materials, and battery system technologies
- Developed CO_2 hydrogenation for the production of methanol catalyst
- Promoted the formation of composite material molding industry alliance; promoted use of asphalt-based carbon fiber in aerospace applications

Low-Carbon Emission

Short-term	Medium-term	Long-term
Improve energy efficiency Carbon neutral oil/gas	Carbon capture Carbon storage	Carbon utilization

CPC prides itself on having the ability to reduce carbon emissions at the source by improving the energy efficiency of its production process. Through promotion of carbon trading for oil and gas products and development of carbon capture, utilization, and storage (CCUS) technologies, CPC hopes to create new opportunities from carbon cycling.

Performance highlight:

- The first in the nation to introduce trading of carbon neutral oil/gas products (natural gas, ethylene, and crude oil)
- Pioneer of carbon neutral fuel station in Taiwan
- Implemented internal carbon pricing and set carbon price at NT$1,500 per MT
- Completed carbon footprint survey for 527 key products in 2024
- Development of small test equipment for CO_2 capture and utilization

Lean-Renewable Energy

Short-term	Medium-term	Long-term
Natural gas	Photovoltaic/geothermal/ cold energy	Hydrogen power

Ongoing investments are being made to the development of photovoltaic systems, geothermal power, and natural gas and cold energy supply. CPC has also ventured into hydrogen power, and will explore viable business models given the domestic demand, regulations, and supply chain availability to transform into a supplier of clean energy. Success of the clean energy transformation will make each CPC fuel station a supply center for diverse energy sources.

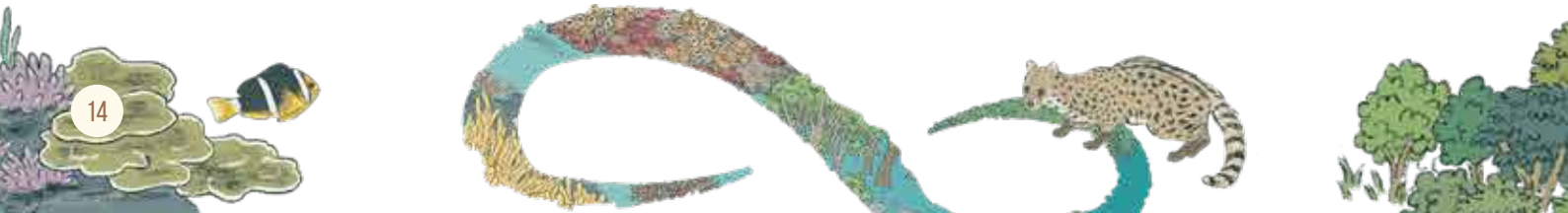
Performance highlight:

- Development of photovoltaic maintenance system
- Evaluation for the establishment of 4MW geothermal power plant
- Evaluation for the establishment of pilot hydrogen fuel station
- Cold drainage algae and aquaculture
- Outcomes of low carbon natural gas

CPC's SDG Footprint

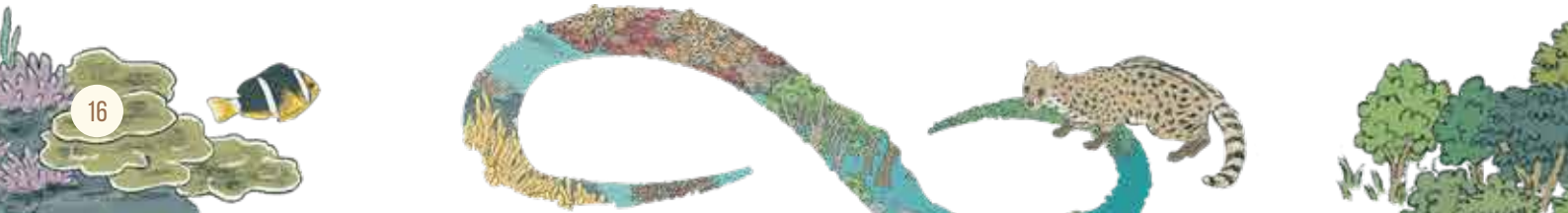
Significance to Us	Our Contributions	Corresponding Sections
 **No poverty** CPC assists the underprivileged at domestic and foreign mining sites; it is the organization's goal to eliminate poverty and under-development worldwide by exerting corporate influence	• Budgets are allocated annually to support construction and charity activities at mining sites in underdeveloped nations; furthermore, work opportunities and skill training courses are offered in conjunction with school construction to promote children's education, which in turn mitigates poverty and ends the vicious circle.	3.5 Social Inclusion
 **Zero hunger** CPC assures accessibility of basic nutrition for the poor and the underprivileged, and provides them with the support they need in life	• CPC donates supplies to Chad in Africa, and supports Taiwanese farmers and fishermen by purchasing or assisting in the sale of excess seasonal produce and seafood; the crops purchased are then donated to vulnerable groups. CPC helped sell 7.1 MT of agricultural produce in 2023.	3.5 Social Inclusion
 **Good health and well-being** It is CPC's responsibility to ensure employees' health and safety	• CPC provides employees with comprehensive health checkup, on-site health consultation, and workplace safety protection; a total of 245 health promotion events and seminars were organized in 2023 • CPC clinics have been established in Taoyuan, Miaoli, Kaohsiung and Taipei to serve employees and local community residents	3.1 Friendly Workplace 3.2 Peace In Work
 **Quality education** CPC associates energy education with daily living activities and conveys its sustainability philosophy through awareness campaigns, exhibitions, events, and environmental education. Through entertainment, message is conveyed to a broad audience including children, young adults, and the general public. CPC is also the only business in Taiwan to implement a counselor training system for persons with developmental retardation.	• CPC actively sponsors "OPEN" exhibition by Education Parenting Family Lifestyle, which is an energy education program targeting elementary school students that promotes learning through handicraft and games • "CPC Kaohsiung Refinery Environmental Education Park" and "Taiwan Oil Field Exhibition Hall" have been certified for Environmental Education Friendly Site • The Petroleum Discovery Museum uses multimedia and interactive displays to connect complicated energy knowledge with day-to-day living activities, which makes the content interesting and effective for the intended purpose • CPC promotes cultural development, education, and knowledge transfer and helps local residents and children grow by sponsoring purchases of essential equipment, donating renewed computers, and sponsoring school sports teams in remote areas. • CPC has implemented a proprietary counselor system to help persons with developmental retardation develop professional skills	3.5 Social Inclusion

Significance to Us	Our Contributions	Corresponding Sections
Gender equality CPC treats all employees fairly; salary and promotion decisions are not differentiated by gender	• Females accounted for 15.5% of general staff and 21.58% of senior managers • CPC had a total of three female vice presidents until 2022, and the number surpassed all other state-owned enterprises • 48% of males took unpaid parental leave; reinstatement rate and retention rate for males and females who took unpaid parental leave were all above 90%	3.2 Peace in Work 3.3 Talent Recruitment and Development
Clean water and sanitation CPC values water resource management and helps less developed countries improve infrastructure so that they have access to clean water; additionally, a multitude of water conservation measures are being implemented to improve water efficiency	• All three plants recycled more than 98% of water in 2023 • CPC donates water wells in mining areas of less developed countries as a way to improve local water quality; it even arranged complimentary medical service at one time to improve health and hygiene in the local environment	2.3 Energy/resource Management and Transformation 2.5 Pollution Prevention
Affordable and clean energy CPC delivers stable energy supply and has a price balancing system in place; photovoltaic systems are being implemented at petrol stations to make use of green energy	• CPC has set short-term carbon reduction goals for 2030, and strives to achieve net zero emission by 2050 • Climate risk assessments for 25 energy supply complexes were completed; a total of 1,126 operational facilities were taken count of in 2022 • As of 2022, CPC had completed more than 248 photovoltaic project sites and installed total capacity of 12.518 MW	2.1 Climate Change Response 2.2 Low-carbon Transformation and Circular Economy 2.3 Energy/resource Management and Transformation
Decent work and economic growth CPC offers appealing employment opportunities and a friendly work environment, and strives to maintain strong operating performance	• CPC adopts a global deployment strategy that covers 15 countries in 4 continents; its presence helps improve employment and economic growth of mining areas in less developed countries • CPC hired 850 people (including work-study students) with disabilities, which accounted for 4.68% of all employees • Employees averaged 53.65 training hours in 2023; the training system adopted by CPC's Department of Human Resources has been certified for Talent Quality Management System (TTQS) – Silver and proven effective at improving employees' competitiveness	1.1 Our CPC 3.1 Friendly Workplace 3.3 Talent Recruitment and Development



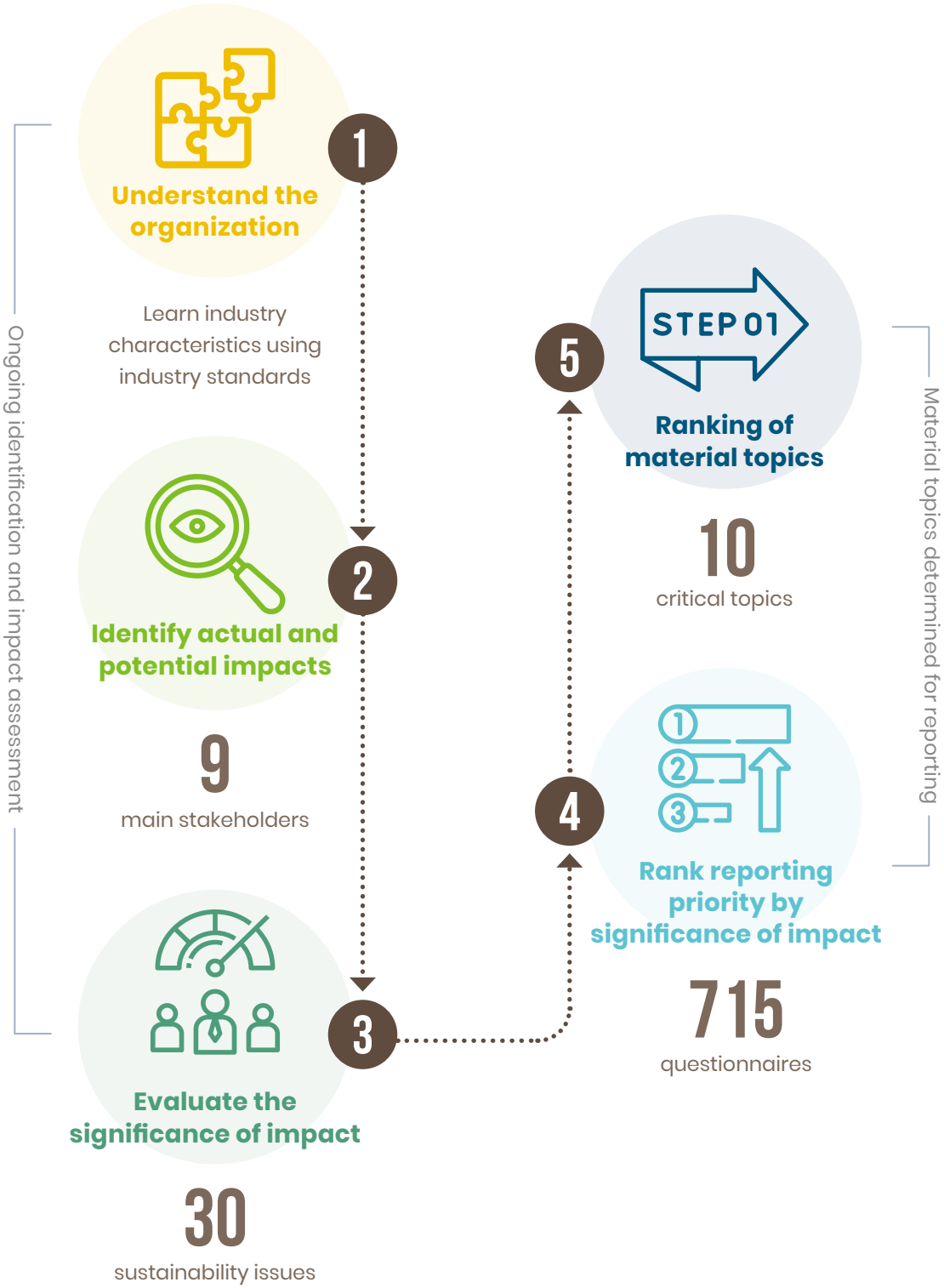
Significance to Us	Our Contributions	Corresponding Sections
Industry, innovation and infrastructure CPC continually enforces circular economy, energy/resource efficiency enhancement and innovative R&D projects as means to enhance competitiveness, sustainability and resilience	• Ongoing expansions are being made to natural gas transportation and storage facilities, pipeline capacity, and related infrastructures for improved gas supply and a robust gas supply network • CPC had five green energy-based pilot smart fuel stations in Northern, Central, Southern, and Eastern Taiwan	1.3 Operating Environment and Results 2.2 Low-carbon Transformation and Circular Economy
Reduced inequalities CPC holds the conviction that every employee is entitled to equal recruitment, treatment, and promotion opportunities, and takes actions to protect their interests	• CPC encourages employee feedback and pays attention to employees' opinions; a total of 24 labor–management meetings were convened in 2023 • Percentage of female employees and female engineers in the refining production unit has increased progressively in recent years • The first gas station brand to recruit female service staff; CPC also hires women seeking re-employment for car washing service at petrol stations • An Employee Grievance Handling Committee, a Sexual Harassment Complaint Review Committee, and a Disciplinary Committee have been assembled	3.1 Friendly Workplace 3.3 Talent Recruitment and Development
Sustainable cities and communities CPC has petrol stations deployed all over Taiwan; being one of the most highly used public spaces, it is especially important that they offer safety, inclusiveness, and convenience for women, children, and people with disabilities.	• Petrol stations are being maintained on offshore islands and in remote areas regardless of profitability • In 2023, all of CPC's direct petrol stations had public restrooms rated Excellent, whereas the public restrooms of 958 franchise stations were rated Excellent or Good and above • 73 petrol stations were certified for green building, and 11 of which received diamond grade certification	1.3 Operating Environment and Results 3.5 Social Inclusion
Responsible Consumption and Production CPC undertakes innovative R&D and environment-friendly and sustainable solutions to fulfill its duties as a responsible producer	• All products have complied with or exceeded CNS requirements • Information and safety data sheet (SDS) of key products and services have been disclosed on CPC website • Progress of sustainability efforts is disclosed on an ongoing basis • CPC will complete carbon footprint survey for 527 key products in 2024	1.1 Our CPC
Climate Action CPC responds to the risks and opportunities of climate change and addresses them through mitigation and adaption measures	• CPC has set short-term goals to reduce greenhouse gas emissions by 49.50% compared to the 2005 baseline by 2030, and long-term goals to achieve net zero emissions by 2050 • CPC surveyed a total of 5,076 operating facilities between 2018 and 2023, and completed climate change risk assessments for 26 energy supply plants • All key investment projects have completed environmental impact assessment according to the Environmental Impact Assessment Act	2.1 Climate Change Response

Significance to Us	Our Contributions	Corresponding Sections
Life below water Some of CPC's operations take place near harbor areas; for this reason, the organization invests resources into marine conservation and adopts the duty and philosophy to reduce impact to the ecosystem	• Ecological monitoring is being carried out at intertidal zones near natural gas receiving stations to minimize environmental impact, and precautions have been taken to avoid damage to algal reefs near the 3rd receiving station • Approximately NT$64.1 million have been committed into preserving algal reefs in Taoyuan and to protect the marine environment in Guantang • CPC set up the nation's first ecosystem preservation fund • CPC provides cold drainage for residents living near the Yongan Plant to enhance aquaculture efficiency. • CPC promotes ecosystem preservation and environmental education at Guantang Industrial Park and is involved in the protection of coral clusters (polycyathus chaishanensis)	2.4 Biodiversity 2.5 Pollution Prevention
Life on land CPC is dedicated to preserving biodiversity at all operating sites, and embraces its responsibility and mission to facilitate sustainability of the ecosystem	• CPC set up the nation's first ecosystem preservation fund • CPC continues to support pollution removal, environmental protection, and ecological restoration efforts at various sites. For example, an ecological survey covering 19 vegetation areas and 12 fauna surveys were conducted near Suao Oil Supply Service Center • Through planning and monitoring of wild bird habitat, the number of adult little terns has increased in the Taoyuan area	2.4 Biodiversity
Peace, justice and strong institutions CPC upholds business integrity and has management systems in place to protect consumers and prevent fraudulent and corruptive behaviors	• Rated "AAA (twn)" by Fitch Ratings for 18 consecutive years • CPC has dedicated ethics enforcement units in place to implement enhanced anti-corruption measures depending on indictments or convictions • Board performance was rated 95.1 in a self-assessment by directors and supervisors • CPC undergoes MOEA's corporate governance evaluation on a yearly basis	1.1 Our CPC 1.4 Business INTEGRITY
Partnerships for the goals CPC makes ongoing improvements to operating practices as a way to care for the Earth's environment; strategies on low carbon transformation, technology development, and sustainable governance are being planned and implemented to connect with global sustainability trends	• Persistent efforts are being made to import carbon neutral oil and gas products; an announcement has been made to establish the nation's first carbon neutral fuel station • CPC interacts with international organizations on an unscheduled basis; between 2003 and 2023, CPC has participated in 16 Conference of the Parties (COP) to learn the impact of climate change and carbon reduction methods	1.1 Our CPC 2.2 Low-carbon Transformation and Circular Economy



Material Topics of Sustainability for the year

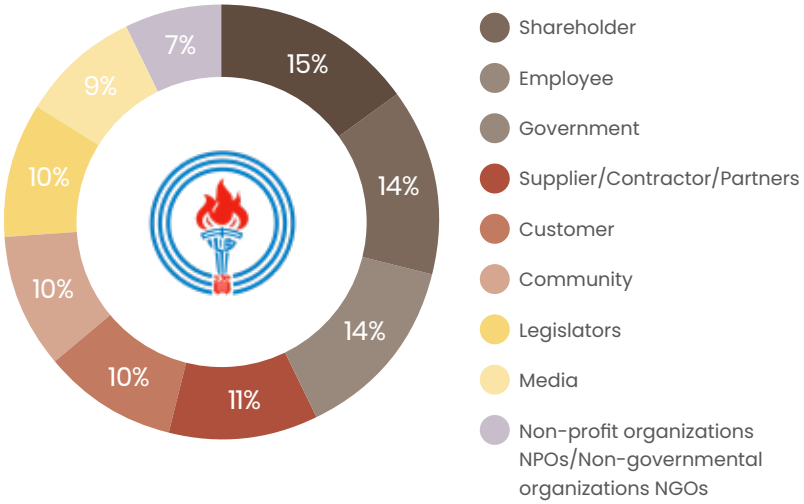
As a state-owned enterprise, CPC exercises significant influence as an industry leader. Its products, services and operations are constantly under public scrutiny; therefore, it is of utmost priority to meet expectations and address the interests of all its stakeholders. CPC values and keeps track of stakeholders' suggestions regarding sustainability management. Through a well-established and systematic process for material topic identification, we identify topics that either concern stakeholders or have a greater impact on sustainable management, which become the subject matter of the Sustainability Report. Identification procedures for stakeholders and material topics and the outcome:



1. Identification of stakeholders

Through reference to the stakeholder groups identified by the energy industry at home and abroad, and referring to the attributes of stakeholders as specified in AA1000SES:2015 (Stakeholder Engagement Standards): dependency, responsibility, tension, influence, and diverse perspectives, we identified nine stakeholder groups: shareholder (MOEA), the government, public representatives, employees, customers, partners, communities, non-profit organizations (NPOs) and non-governmental organizations (NGOs), and the media. Stakeholders that CPC had identified through an internal questionnaire in 2023 were assigned the following weights:

Stakeholder Identification and Analysis Results for CPC in 2023



2. Gathering material topics of sustainability

CPC utilizes a multitude of internal and external channels to gather issues of concern, and observes applicable global guidelines and standards (e.g. Global Risks Report, United Nations SDGs, TCFD, TNFD, CDP, and SASB), industry guidelines, peer and non-peer benchmarks, annual organizational targets, etc., to identify issues that are important to sustainability. This year, CPC compiled 30 sustainability issues covering multiple aspects from environmental, social, economic to governance, and designed and distributed "Stakeholder Concern Questionnaire" and "Material Topic Impact Questionnaire" to gather responses.

3. Analysis and discussion for materiality ranking of sustainability issues

After taking governance, environmental, and social impacts into consideration, CPC used questionnaires to survey issues that were of concern to the 9 main stakeholders, and managed to recover a total of 715 responses. After thorough analysis and prioritization, we have analyzed our 2023 sustainability issues as follows. The further an issue is positioned in the top-right corner of the matrix, the higher its impact is on CPC and the higher concern it is to stakeholders.

Out of a total of 30 sustainability issues, CPC has identified 10 material topics for communication with stakeholders in this report. For each of the topics identified, CPC has disclosed its performance highlights, management approach, and actions for the year to address stakeholders' concerns. Based on the answers provided in the questionnaires, the level of positive impact and negative impact is rated on a scale of 1 to 5 for each material topic, as shown in the following chart.

Overall ranking	Material topic	Internal stakeholders		External stakeholders	
		Positive impact	Negative impact	Positive impact	Negative impact
1	Low carbon/carbon reduction measures ☆	3.5	3.1	3.5	3.2
2	Compliance	3.2	2.9	3.4	3.1
3	Management of major incidents	3.0	2.9	3.2	3.0
4	Anti-corruption measures ☆	2.9	3.0	2.8	3.2
5	Compliance with environmental laws	2.8	3.0	3.0	3.1
6	Cybersecurity and privacy protection	2.8	3.2	3.1	2.6
7	Air pollution control	2.9	2.7	3.1	2.6
8	Governance	2.9	2.6	2.7	3.0
9	Business continuity management	2.8	2.8	2.7	3.2
10	Strategies for climate change	2.7	2.6	3.3	2.9

» Note: Indicates that the material topic poses substantive risk. Although some of the sustainability topics were not considered material, CPC still applied GRI 11: Oil and Gas Sector Disclosures and disclosed information accordingly. These topics include: management of waste and hazardous substances, energy and resources management, ecological and environmental preservation, employee compensation and protection, employee human rights protection, diverse and inclusive workplace, supply chain management, anti-competitive behaviors, management of payments to the government, and local community.

● Governance
● Environmental
● Social

Confirming material topics of sustainability

Based on the outcomes of the analysis and after taking into consideration the emphasis of previous efforts, CPC has identified 10 material topics that are critical to the organization. This year's material topics and impact boundaries are shown in the following chart; refer to corresponding chapters for more information.

1 Low carbon/carbon reduction measures

Environmental

Corresponding GRI disclosure: GRI 302 | GRI 305

Corresponding chapter

2.1 Mitigation and adaptation to climate change

2.2 Low carbon/green energy transformation and circular economy

Impact

Setting short-, medium-, and long-term emission reduction goals in line with the nation's carbon reduction policy and global climate risk trends help minimize harm to the environment.

Assessment system

- Corruption risk assessment at business locations
- Arrangement of anti-corruption training

2 Compliance

Governance

Corresponding GRI disclosure: GRI 2

Corresponding chapter

1.4.1 Compliance

Impact

Compliance, robust corporate governance, and the establishment, enforcement, and adherence of related guidelines not only reduce business risk and penalty risk, but also contribute favorably to the improvement of business performance

Assessment system

- Operational overview and performance review report

3 Management of major incidents

Social

Corresponding GRI disclosure: GRI 403

Corresponding chapter

3.1.2 Employee care and benefits
3.2.1 Workplace safety management
3.2.2 Employee safety protection

Impact

- Workplace hazards reduce employees' and stakeholders' trust for CPC and negatively impact CPC's reputation as an employer.
- Injury and illness affect employees' attendance and increase personnel cost.

Assessment system

- Outcome of optimizations to the production procedure safety management system
- Number of safety and health training sessions
- Number of disaster prevention and rescue drills

4 Anti-corruption measures ☆

Governance

Corresponding GRI disclosure: GRI 205

Corresponding chapter

1.4.2 Anticorruption

Impact

- Taking the initiative to identify corruption risks at various locations helps promote anti-corruption awareness and brings positive effects to corporate governance over the long term.

Assessment system

- Corruption risk assessment at business locations
- Arrangement of anti-corruption training

5 Compliance with environmental laws

Environmental

Corresponding GRI disclosure: GRI 305

Corresponding chapter

2.5.1 Compliance with environmental laws

Impact

Attention to climate change issues, regulatory changes, and market trends combined with appropriate adjustments to internal policies, transparent disclosures, and timely response help promote the organization's low carbon and green energy image, which has positive effects from an economic and environmental perspective

Assessment system

- Number of sites under supervision of the authority
- Number of training sessions, environmental protection meetings, and plant inspections

6 Cybersecurity and privacy protection

Governance

Corresponding GRI disclosure: GRI 418

Corresponding chapter

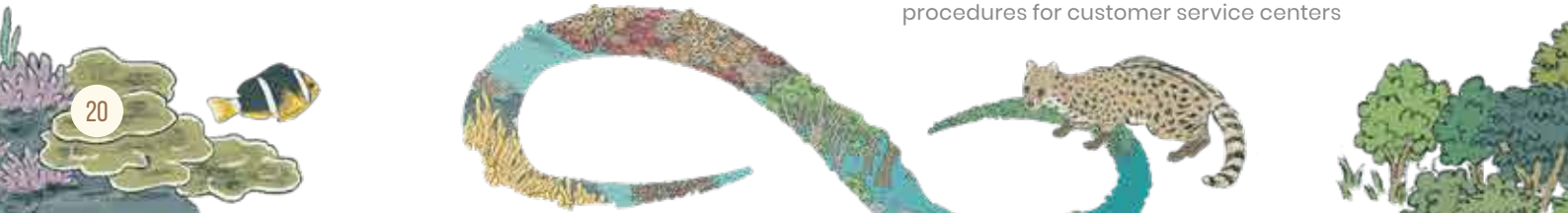
1.5.2 No. 1 in service

Impact

Enhancing cybersecurity awareness among employees is vital for maintaining customer data and establishing a cybersecurity framework that meets regulatory and customers' requirements.

Assessment system

- Cybersecurity maintenance plan
- ISO 27001 – Information Security Management System
- Cybersecurity and personal data management procedures for customer service centers



7 Air pollution control

Environmental

Corresponding GRI disclosure: GRI 305 | GRI 416

Impact

Ongoing improvements to leakage of equipment components, establishment of management goals, and tracking of execution outcomes through regular meetings help reduce emission of air pollutants and lower negative impacts on the environment.

Corresponding chapter

1.5.1 No. 1 in Quality
2.5.2 Air pollutant emission and management

Assessment system

- Air pollution control action plans
- Air pollution detection and leakage management

8 Governance

Governance

Corresponding GRI disclosure: GRI 2

Impact

Empowerment of the board of directors, improvement to the leadership of the management team, protection of shareholders' interests, and accurate and transparent disclosure of information help improve corporate reputation and facilitate review of internal processes; all of which are favorable to commercial activities.

Corresponding chapter

1.4.2 No. 1 in service

Assessment system

- Outcome of corporate governance evaluation
- Corporate governance refinement program

9 Business continuity management

Governance

Corresponding GRI disclosure: GRI 402 | GRI 404 GRI 306

Impact

Being able to equip employees with risk awareness and risk management ability and improve supply chain crisis handling capacity helps accomplish CPC's medium- and long-term plans and sustainable management goals for the protection of stakeholders' interests.

Corresponding chapter

1.3.4 Risk control
3.1.2 Employee care and benefits
2.5.3 Discharge and management of effluents and waste

Assessment system

- Risk management and crisis handling principles
- Overall risk measurement principles
- Supply chain self-assessment questionnaire

10 Strategies for climate change

Environmental

Corresponding GRI disclosure: GRI 201 | GRI 305

Impact

Operational impacts caused by climate-related disasters, increase in greenhouse gas emission, and policy or regulatory changes local and abroad (imposition of carbon fee/tax, emission quota, etc.)

Corresponding chapter

2.1.2 Risks and opportunities of climate change
2.1.4 Climate change goals, indicators, and management performance

Assessment system

- TCFD guidelines

Analysis of changes in material topics

By analyzing and understanding the material topics, CPC is able to enforce integrity and eliminate corruption to a greater extent and thereby secure the foundation for future business success. While facilitating business growth, CPC invests in the development of advanced technologies so that it can better accommodate global trends of the industry, such as carbon reduction, protection of the ecosystem, and lowering of air pollution. Internally, CPC creates a working environment that is friendly to employees; externally, CPC places significant emphasis on protecting customers' interests and maintaining product quality. CPC looks forward to hearing opinions from more diverse sources in the future, and envisions itself becoming the role model business in the energy and petrochemical industries.

Ranking	Material topics – 2023	Change
1	Low carbon/carbon reduction measures	▲9
2	Compliance	–
3	Management of major incidents	▲1
4	Anti-corruption measures	▼3
5	Compliance with environmental laws	▼2
6	Cybersecurity and privacy protection	▲2
7	Air pollution control	▼2
8	Governance	▼2
9	Business continuity management	New
10	Strategies for climate change	New

» Note 1: New – denotes material topic of sustainability newly identified for 2023.

» Note 2: ▼1 – Means that the issue is one place down from 2022.

» Note 3: ▲1 – Means that the issue is one place up from 2022.

» Note 4: – Means that ranking was unchanged from 2022.

Stakeholder Communication

CPC persistently improves the ways it interacts with stakeholders, and takes responsive actions, exerts influence, and adopts responsible business management. CPC enforces "persistent communication, ongoing improvement, and timely disclosure" as part of its core values, and values the transparency, accountability, inclusiveness, and consistency of its communication with stakeholders.

CPC's stakeholders include: shareholders (MOEA), business partners, public representatives, communities, non-profit/non-governmental organizations, customers, employees, and the media. CPC holds itself responsible to stakeholders, and communicates with them using a variety of methods and channels to learn their needs and expectations. This knowledge also provides useful reference to the Company when devising sustainability-related policies in the future. Methods and channels of stakeholder communication and outcomes:

Methods and channels of stakeholder communication

Communication with internal stakeholders

CPC addresses employees' grievances in an honest, open, immediate and direct manner, and implements a set of Employee Grievance Policy to protect employees' rights. Employees may raise grievances when there are objections to a reward or punishment decision; or when employee rights and interests are damaged due to inappropriate systems, regulations, or administrative measures; or when there is employee misconduct.

Grievance Handling Committee

CPC has established the Employee Grievance Handling Committee with nine seats held by the spokesperson, heads of related departments and offices, and the Chairperson and representatives of the labor union.

Labor–management Meeting

CPC convenes labor–management meetings at least once a month. The minutes of previous labor–management meetings are disclosed on the Intranet. Communication between labor and management has been transparent and open; no losses have arisen from employment dispute as due to the harmonious labor–management relationship.

Collective bargaining agreements

CPC has been engaging Taiwan Petroleum Workers' Union for the establishment of a collective bargaining agreement since 2019, and after 12 negotiations, a collective bargaining agreement was signed with Taiwan Petroleum Workers' Union in December 2021. The agreement comprises 55 articles across 9 chapters in total; it outlines the rights and obligations between labor and the management, and provides foundation for the optimal labor–management relationship and employment terms for business growth, employee welfare, corporate profits, and continuity.

Communication with External Stakeholders

CPC maintains communication with the outside world, and actively gathers and responds to queries or suggestions through the corporate website, department websites, opinion mailbox, official Facebook page, CPC PAY APP, meetings, campaigns, and the media. CPC also has a 24-hour customer hotline ("1912") available to gather voices from the outside and respond to queries or suggestions. CPC also takes the initiative to communicate with the public, and has Neighborhood Engagement Guidelines and Neighborhood Engagement Review Committee in place to serve as guidance. Through active communication and visits and by holding monthly or ad-hoc meetings to discuss the needs of local communities, CPC looks forward to building a culture of sustainability with local organizations, individuals, and the community.

Diverse communication and grievance channels

- Opinion mailbox
- CPC website
- 1912 toll-free hotline
- CPC Facebook

Creative communication through online video

The CPC Media webpage houses an extensive collection of online videos on brand promotion, business introduction, CSR activities etc.

Communication channels and frequency – 2023

Shareholders (MOEA)

- ESG questionnaire (once a year)
- Shareholder meetings and extraordinary shareholder meetings (currently convened on behalf of the board of directors) (at least once a year)
- Public policy meetings (at least 24 sessions a year)
- Official correspondence (at least 3,000 a year)
- Shareholders' meeting annual report (once a year)
- Market Observation Post System (at least once a month)

Partners

- ESG questionnaire (once a year)
- Contractor meetings (at least 10,000 sessions a year)
- Training/drill (at least 400 sessions a year)
- Distributor evaluation/meetings (unscheduled/at least once a year)
- Counseling/service/inspection and oil quality management for franchise stations (generally once a month)
- Supplier evaluation/meetings (unscheduled/at least once a year)
- Awareness promotion activities (at least 210,000 attempts a year, carried out by various units)
- Performance evaluation/e-mail/telephone (unscheduled)

Public representatives

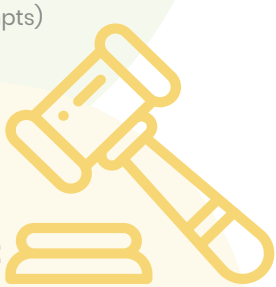
- ESG questionnaire (once a year)
- Special reports (79 total)
- On-site inspections (19 total)
- Coordination meetings (125 total)
- Personal visits (at least 150 visits a year)
- Official correspondence (at least 200 a year)
- Communication meetings of various form (at least 500 sessions a year)

NPOs/NGOs

- ESG questionnaire (once a year)
- CPC website and CPC Facebook page (real-time communication)
- Outsourced ecological survey of little terns involving the Taoyuan City Wild Bird Association (task meetings are convened on an unscheduled basis)
- Outsourced ecological survey of algal reef involving National Taiwan Ocean University (at least 9 attempts)

Communities

- ESG questionnaire (once a year)
- Neighborhood engagement (unscheduled)
- Community or tribal communication meetings (unscheduled)
- Charity activities (more than 200 a year)

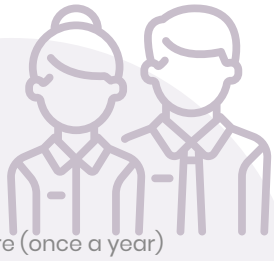


Government

- ESG questionnaire (once a year)
- raining courses organized by the authority (at least 12 sessions a year)
- Charity campaigns (unscheduled)
- Labor inspections/audits (at least 100 a year)
- E-mail/telephone (unscheduled)
- Official correspondence (at least 3,000 a year)

Customers

- ESG questionnaire (once a year)
- Customer satisfaction survey (once a year per business division)
- Grievance/opinion mailbox (unscheduled)
- Education and training (unscheduled)
- Customer complaint service hotline (unscheduled)
- Visits/interactions (unscheduled)
- Website information (unscheduled)



Employees

- ESG questionnaire (once a year)
- Grievance (employees may raise grievances as needed)
- Internal meeting: worker director meetings (once a month)
- Internal meeting: labor–management meetings (generally once a month)
- External meeting: collective bargaining meetings (convened as needed)
- CPC Monthly (published monthly)
- Worker education seminars (generally once a month)
- Training/drill (unscheduled)

The Media

- ESG questionnaire (once a year)
- News release (immediate response)
- Press conference (unscheduled)
- Company visit (unscheduled)
- News coverage (at least 500 a year)

Shareholders (MOEA)

We are a state-owned enterprises (SOE) wholly owned by the Ministry of Economic Affairs (MOEA). Our integrity and sustainable management represent our commitment and mission for Taiwan.

Issues of concern – 2023

- Governance
- Compliance
- Anti-corruption measures
- Business continuity management
- Strategies for climate change
- Management of major incidents

Performance	Outcome
• Questionnaire: 1 • Board of directors meetings: 14 (including 2 extraordinary board meetings) • Business Plan Review Team, Exploration Review Team, Procurement Review Team, and Senior Personnel Nomination Review Team meetings and special meetings: 20 sessions • Opinions were communicated in writing • Shareholders' meeting annual report: 1 • MOPS information is updated on a monthly basis	• Directors and supervisors visited Huxi Oil Depot to learn the progress of pollution cleanup, and inspected operations of the Waian Petrol Station in Xiyu Township • Directors visited Taichung LNG Refinery to inspect unloading of LNG vessels and receive briefings on the 721 incident • Directors attended "R&D Progress Report of the Three Research Institutions – 2023"

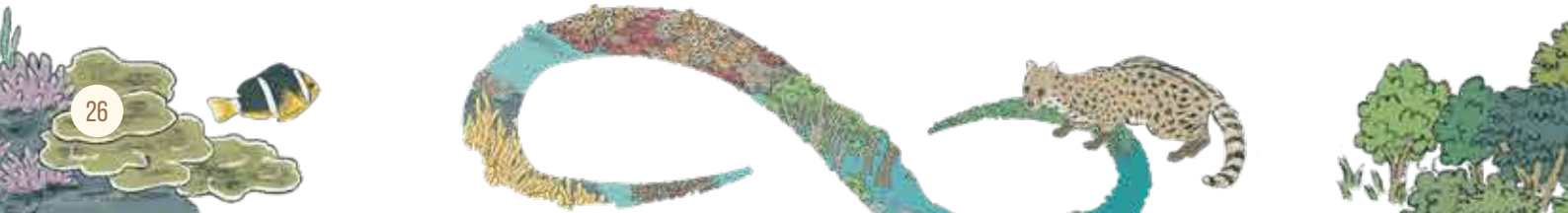
Partners

CPC and partners (including contractors, suppliers, and distributors) create value and stabilize the energy supply in Taiwan to build a sustainable value chain.

Issues of concern – 2023

- Compliance
- Management of major incidents
- Anti-corruption measures
- Strategies for climate change

Performance	Outcome
• Questionnaires: 115 • CPC organized 359 disaster prevention drills (including four expanded emergency response drills) • Two large-scale corporate integrity promotion campaigns were held	• Organized two large-scale campaigns to promote business integrity, during which CPC invited suppliers to attend and engage in cross-field exchange of opinions for consensus toward integrity and ethics • Devised training for contractors on scaffolding, equipment installation/removal, and aerial work platform; more than 1,200 participants had completed the training and passed certification • CPC has signed green energy development MOUs with Taiwan Cement, Academia Sinica, ExxonMobil, SLB, Baseload Power Taiwan, GreenFire, and Ormat, and continues to explore climate change responses as well as low carbon business opportunities



Public representatives

CPC engages public representatives in active communication in order to learn the opinions of local residents, so that projects and works can be carried out in conformity with the public's needs and expectations

Issues of concern – 2023

- Anti-corruption measures
- Compliance
- Management of major incidents
- Governance
- Low carbon/carbon reduction measures
- Strategies for climate change

Performance	Outcome
• Questionnaires: 10 • A total of 20 official replies were made to written inquisitions, verbal inquisitions, and correspondences of the Legislative Yuan • 549 responses were made on matters that were of concern to legislators, including inquisition, coordination, grievance, and personnel arrangement	• CPC communicates with public representatives through various meetings, and invites them to project meetings to update them on the progress of various projects • Information relating to issues that were of concern to public representatives was consolidated and provided in a timely manner; this solid communication ensured satisfactory completion of CPC's 2023 budget review • Outcome of the Congress Evaluation released during the 7th session of the 10th legislators showed CPC ranking first in two categories: state-owned enterprise category and the individual category

Communities

In addition to having petrol stations that provide service at the frontline, CPC also operates refineries and petrochemical plants, and maintains good relations with local communities while making the commitment to uphold their quality of life

Issues of concern – 2023

- Compliance with environmental laws
- Management of major incidents
- Air pollution control
- Low carbon/carbon reduction measures

Performance	Outcome
• Questionnaires: 80 • 12 Neighborhood Engagement Review Committee meetings and two extraordinary meeting were convened • 4 on-site visits were arranged to assist local units with their neighborhood engagement efforts • CPC subsidized neighborhood charity events, scholarships, emergency aid, and welfare for elders and persons with disabilities for a total of 6,356 cases and NT$403 million	• CPC maintains good communication with its neighbors, and takes part in charity activities, public constructions, and various programs aimed at promoting culture, education, health awareness, care for elders, energy conservation, and carbon reduction • CPC listens to the opinions of local residents when developing geothermal power in Yilan; nine residents from nearby locations were recruited to work on the geothermal well • Held seminars to communicate with local residents on carbon storage at Tiezhenshan in Miaoli • Showcased and explained the CCUS interactive model at eight exhibitions to strengthen the public's awareness and support for the technology

NPOs/NGOs

CPC engages non-profit/non-governmental organizations (including the Fossil Fuel Industry Association) in ongoing communication to learn the opinions and needs of outside parties

Issues of concern – 2023

- Air pollution control
- Low carbon/carbon reduction measures
- Strategies for climate change

Performance	Outcome
• Questionnaires: 26 • CPC provides the latest updates on its official website and Facebook page • Joined academic, charity, and other organizations of non-profit nature	• CPC discovered a large number of little tern nests for the first time at area G3 in Datan in 2023, and a general survey showed the number of adult little terns in Taoyuan having reached a 3-year high (279 total) this year

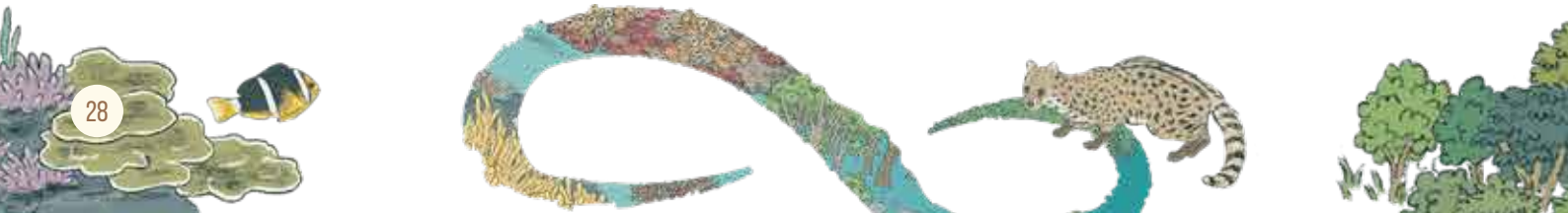
Customers

Based on the management philosophy "Quality, Service, and Contribution to Society," we engage with customers and pave way for sustainable management with an appropriate amount of profit

Issues of concern – 2023

- Compliance with environmental laws
- Management of major incidents
- Cybersecurity and privacy protection
- Business continuity management
- Low carbon/carbon reduction measures

Performance	Outcome
• Questionnaires: 99 • CPC achieved a customer experience management (CEM) score of 95.8 in 2023	• A total of 181,634 customer service requests were received iin 2023; 94.9% of which were resolved on the spot, and all customer service requests were resolved in an appropriate manner • Won "Trusted Brand Platinum Award - Petrol Station Category" for 23 consecutive years



Government

As a state-owned enterprise, CPC continues to support government policies and contribute to sustainability development in Taiwan

Issues of concern – 2023

- Compliance
- Compliance with environmental laws
- Management of major incidents
- Air pollution control
- Governance
- Low carbon/carbon reduction measures

Performance	Outcome
• Questionnaires: 32 • A total of 172 internal audits have been conducted in relation to the labor inspection; CPC will continue tracking progress until all required improvements have been made	• CPC responds pro-actively to national policies on energy transformation and stable energy supply • Contributed NT$73.5 billion in taxes to the government in 2023 • At the Industrial Development Administration's request and with the assistance of Institution for Information Industry, CPC optimized and established an intellectual property management system that is linked to its operating strategies, and passed certification for Taiwan Intellectual Property Management System (TIPS) – Grade A

The Media

CPC sees media as an important partner for external communication, and strives to maintain a relationship through information sharing, seminars, etc., so that CPC's mission, philosophy, and performance can be properly conveyed to the public.

Issues of concern – 2023

- Anti-corruption measures
- Compliance
- Management of major incidents
- Air pollution control
- Governance
- Low carbon/carbon reduction measures

Performance	Outcome
• Questionnaires: 14 • Press conference: 6 sessions; press release: 141 issues • CPC organized 2 on-site visits and 21 media interviews and forums to promote the media's knowledge toward CPC	• CPC invited the media for a visit to Green Technology Research Institute and Refining & Manufacturing Research Institute in Chiayi to learn about R&D progress on battery materials. • CPC invited the media to the commissioning of Guangming Charging Station in Hsinchu and to take part in various events such as the World Toilet Day, the carbon reduction briefing at Qianfeng Road Station in Tainan etc. • CPC received 573 favorable news coverages that reinforced the organization's reputation as a corporate citizen

Employees

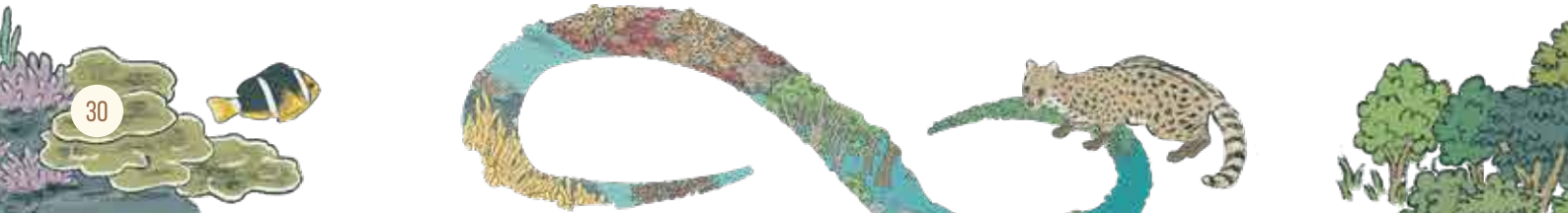
CPC persistently explores ways to create a friendly workplace and introduces competitive human resource policies; a comprehensive talent training program has been implemented to ensure the quality of employees' work performance and lifestyles

Issues of concern – 2023

- Management of major incidents
- Business and financial performance
- Air pollution control
- Low carbon/carbon reduction measures
- Business continuity management
- Cybersecurity and privacy protection

Performance	Outcome
• Questionnaire: 338; manager questionnaire: 34 • Number of employee grievances resolved: 2 • 24 labor–management meetings were convened • 12 issues of CPC Monthly were published • 11 sessions of worker education seminar and 2 sessions of educational tour were organized • Approximately NT$145 million of budget was allocated to training; employees averaged about 53.65 hours of training	• 3,605 training sessions were organized in 2023, which received approximately 123,000 enrollments • CPC adopted a broad variety of training methods in 2023, such as: training for senior management reserves, professional managers, management reserves, assistants, and junior management reserves, which were delivered by way of e-learning and (E+C). A total of 856 people were subjected to training. • Two orientation seminars for new recruits were organized in 2023 and were delivered online via CPC-Live in conjunction with classroom sessions. This combination increased interaction between the instructor and trainees in such a way that improved training effectiveness and enabled new recruits to become familiar with the tasks assigned in a shorter time. Trainees were required to complete an online exam at the end of each course by scanning a QR code. Online courses have been made available on CPC E Library where employees can access and learn at their convenience. A total of 206 people participated in the training.

» Note: Please see 1.1.2 – Directors overview for more details on board of directors' engagement with stakeholders in 2023.



Special coverage on sustainability

01 SPECIAL COVERAGE

SUPER DADDY

Gender-equal workplace that retains employees

CPC values gender equality and strives to create a workplace that is friendly to all genders. In 2023, CPC had 1,069 employees who were eligible to apply for unpaid parental leave; 176 of whom applied for unpaid parental leave, including 75 males (42.61%) and 101 females (57.39%). The number of male applicants for unpaid parental leave has increased progressively in the last 3 years and remained relatively high compared to industry peers. This result is indicative of CPC's dedication to creating a secure workplace that caters to the needs of first-time parents and gives them time to be with their children.

Percentage of males on unpaid parental leave

2023
No. of male applicants **75**
Percentage of male applicants **42.61** %

2022
No. of male applicants **39**
Percentage of male applicants **48.12** %

2021
No. of male applicants **64**
Percentage of male applicants **34.82** %

As a first-time parent, the joy of welcoming a new life was quickly overshadowed by the panic and confusion of having to do many things for the first time. After going through several options, I decided to place my baby at a childcare center that is close to home. However, not being able to watch the baby while working felt like I was pushing my luck. I struggled with my new lifestyle for almost a year and finally saw the CPC Childcare Center open. During the initial tour, I was blown away by the new facilities, the bright environment, the abundant space, and the ways they segregate children of different ages. In addition to having enough space for children to move around, there is also room to properly quarantine children who exhibit flu-like symptoms. Coupled with the fact that I am able to watch my kid through the surveillance screen, communicate with the staff, and express opinions to the Company at any time, I no longer have to worry about how my child is doing while I am at work. This was the reason why I chose to place my second child at CPC Childcare Center. The establishment of a childcare center at the CPC Building had been a rather difficult process, and the outbreak of COVID once had me worried about missing the opportunity. Fortunately, CPC overcame the odds by placing employees' welfare at the top of its priority as it always has, and I absolutely appreciate the Company for what it has done!

My second child was fortunate to be born shortly before CPC Childcare Center opened. He was admitted into the CPC Childcare Center at just 2 months old, making him the youngest baby to be cared for at that time and for which he was known as a "CPC baby." Located within the nation's capital, CPC Childcare Center boasts the newest facilities and the best childcare environment there is. Furthermore, the Childcare Center maintains a staff-to-child ratio that is more favorable than legal requirements, thereby ensuring the best care for children while giving parents the ultimate peace of mind at work. It is undoubtedly the best form of benefit that an employer may offer to its employees.

Ever since we decided to place our boy at CPC Childcare Center, our family of four would leave home together in the morning. Starting from the basement car park, I would drop the girl off at preschool and my wife at her workplace before arriving at the CPC car park with the boy. Being able to drive the boy "from door to door" keeps him away from bad weather, and the journey we share during our commute makes our best family time each day.

The girl had stayed at other childcare centers before, but CPC's Childcare Center feels more reassuring by comparison. On days when the baby catches a cold, I can visit the Childcare Center just moments before lunch break to help clear up his airway for a better nap. I can also watch the surveillance footage to check up on the baby and see how he interacts with the staff and other children, and chat casually with the staff about the baby's day. Through communication with the staff, I can appreciate how passionate and attentive they are with the children put under their care. They are also available and capable of handling emergencies at first sight.

It is natural for parents to worry about their children at work, but for those of us who work at CPC Building, knowing that our babies are just a few floors down gives us assurance and fills us with motivation for the entire day! Perhaps it is the extra time we spend during the day; the boy has grown more attached to me even at home. He would sleep better with me around and cry for dad instead, which relieves much of mom's work.

Friendly workplace with reassuring childcare service

Four main childcare facilities located throughout Taiwan

As a support to "Public Childcare Program for Children Aged 0-2," which has been a part of the Executive Yuan's New Infrastructure Project, CPC Employee Welfare Committee organized a Childcare Center at the CPC Building to provide an environment where children between the age of 0 and 2 may learn, move, play, and grow both physically and mentally. With this Childcare Center, CPC hopes to give parents the peace of mind and create a friendly workplace that conforms with the government's policies. CPC already operates non-profit childcare facilities in Miaoli, Kaohsiung, and Chiayi, and the addition of the Childcare Center at CPC Building in 2023 was intended to provide an ideal environment to accommodate employees' children, and thereby fulfill the Company's responsibilities toward sustainability. The CPC Childcare Center in Taipei is conveniently located near MRT Taipei City Hall Station and Taipei Bus Station. The Childcare Center has three activity rooms and one infirmary that also serves as a nursery room. It has a separate kitchen that prepares fresh meals daily. In addition to the three activity rooms for different classes, a common activity room has also been created for children to roam about.

Infant beds fitted with breathing motion sensors

The Employee Welfare Committee had searched for and invited experts with practical experience to join the management team while setting up the Childcare Center, and engaged the highly experienced "New Taipei City Childcare Association" to assist in the operation of the Childcare Center. The Childcare Center was meticulously planned and security staff from CPC Building regulated access. Additionally, the facility was equipped with technologies and assistive equipment that go beyond the standard offerings of most childcare centers. For example: there is a separate device to account for daily pickups; a smartphone App is used to facilitate communication between staff and parents; all doors in activity rooms feature patented safety designs; and infant beds are fitted with breathing motion sensors. From interior design to daily activity arrangement, the Childcare Center has been designed to provide comfort and support diverse and adaptive growth. All staff of the Childcare Center have been instructed to be empathetic about how each parent cares for their children, so that every child receives the most attentive care here at the Childcare Center.

A full-fledged childcare center that is all about corporate responsibilities

The CPC Childcare Center has the full support of the Company and is run by a highly experienced management team. In addition to the thoughtful interior designs, the facility also has a team of passionate workers who work tirelessly to care for every child, thereby helping the Company fulfill its responsibilities to employees. CPC Childcare Center respects the trust of every parent and prides itself for delivering services with devotion, commitment, patience, attentiveness, joy, accountability, and assurance.

02
SPECIAL COVERAGE

Green Guardian – Turning Oil Pollution into Treasured Soil

Soil and groundwater are extremely precious resources that humans and life in general depend on for survival. For the protection of health, the ecosystem, and natural resources, use of a business site must be restricted as soon as the soil or groundwater is found to have been contaminated; additionally, pollution control and cleanup measures will have to be taken where necessary to remove contaminants or reduce risks down to an acceptable level.

Given the current framework of the Soil and Groundwater Pollution Remediation Act, the polluter and the local authority are more inclined to adopting fast treatment techniques for soil and groundwater contamination, hoping to clear the contaminated site of restrictions in the shortest time possible. However, these techniques may cost more energy and resources, or even result in secondary contamination that once again damages the environment and makes society pay a higher price. CPC adopts the concept of Green and Sustainable Remediation (GSR), along with the relevant framework and assessment tools introduced by the government in 2008. Since then, CPC has been engaging in remediations with a green perspective to lessen overall environmental impact while producing economic and social benefits, ultimately achieving sustainable use of land and groundwater. When executing remediation of contamination, CPC sets its goals to deliver mutual benefits from an environmental, social, and economic perspective.

Green and sustainable remediation

- Ensure personal health and safety
- Social justice

- Reduction of energy consumption
- Reduction of emission
- Minimize impact on water resources
- Reduce materials and waste
- Lower impact on soil and the ecosystem

- Increase cost effectiveness
- Maximize economic value added

Remediation of Wugu Petrol Station

During an inspection conducted in 2010, New Taipei City Department of Environmental Protection discovered pollution potentials at the site where CPC's Wugu Petrol Station is located, and subsequently imposed soil pollution control in 2013 followed by groundwater pollution control in 2018. For nearly 10 years, various techniques including soil vapor extraction (SVE), air sparging (AS), and dual phase extraction (DPE) were adopted for in-situ remediation, as opposed to the old excavation and off-site remediation approach. The remediation project was completed at the end of 2022.

April 2011 to June 2012

Executed environmental survey and health risk assessment for the site

July 2015 to October 2017

Analyzed and designed **an adaptive in-situ remediation system (SVE, DPE, P&T, AS)** that was most suitable for the affected area, based on the outcomes of the pollution survey and geographical data. Controls were placed on the number of wells to minimize unnecessary use of materials, fuel consumption, transportation expense, and energy/ resource consumption. A total of 5 SVE wells, 15 single-pump DPE wells, 5 dual-pump DPE wells, and 16 AS wells were established at the site. Hydro controls and swabbing wells in areas of high concentration were prioritized for contamination removal. Progress was evaluated regularly and supported with gradual well controls and AS enhancements. Overall, the in-situ system **removed approximately 7,169 kg of contaminant** throughout the period of operation.

July 2017 to October 2017

Hydrogen peroxide and ferrous sulfate were used for **in-situ chemical oxidation (ISCO) to assist with the remediation efforts.** The ISCO solution was kept at a concentration level of 10%-25%, and about 1,080 L of the ISCO solution was injected. Additionally, the AS technique was applied **to speed up the mix between the oxidation solution and the contaminant and to control the flow of liquid.**

October 2018 to December 2018

The Department of Environmental Protection conducted tests onsite, found soil quality to have conformed with the concentration standards stipulated in laws, and lifted soil restrictions. Meanwhile, groundwater still exhibited excessive concentration of contaminant, and the Department made a separate announcement to impose groundwater restrictions on the site.

November 2019 to September 2021

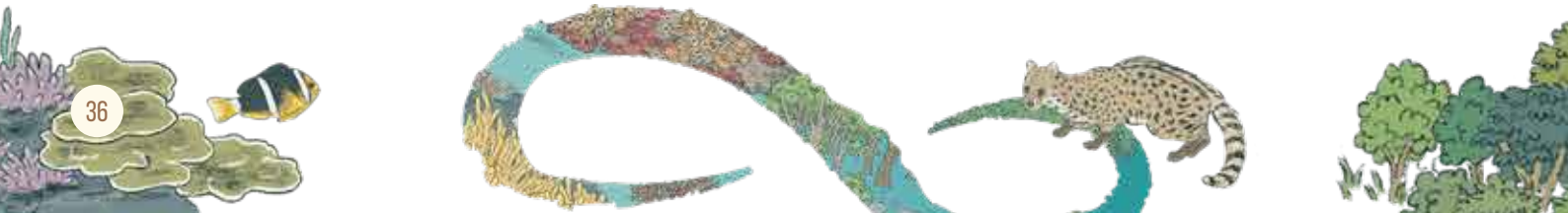
5 additional single-pump DPE wells and 2 additional AS wells were established in areas where trace amounts of contaminants were found in the groundwater. By making appropriate adjustments to the adaptive in-situ remediation system, **another 510 kg of contaminant was removed** during this period.

February 2022 to March 2022

The adaptive in-situ remediation system had resolved most of the contamination in the underground environment; what remained was an area about 3m2 wide where contaminant could not be removed using the in-situ system due to shallow depth, unevenness, and blind spot. To prevent waste of resources, **CPC took the excavation approach to remove contamination and shorten the work duration.** Quick screening tools were used to identify and classify soil during the excavation work. About 23 m^3 of soil was found to have been contaminated, and the soil was transported to a **3rd-party institution for treatment and reuse** in accordance with rules.

November 2022

The Department of Environmental Protection tested the soil and groundwater onsite and found them conforming with the concentration standards stipulated in laws. **The Department thus lifted the control measures.**



The GSR decision-making and management approach

Feature 1

The in-situ remediation system has an adaptive design that allows automated adjustment and remote monitoring for energy/carbon reduction benefits

1. Motors of the extraction and injection systems **were designed with adaptive features according to actual requirements.** Operating frequency could then be adjusted depending on current conditions to ensure proper equipment function and reduce energy consumption.
2. **System alert with automated control:** The alert system has been configured to suspend partial functions whenever it detects an abnormality during operation. **An alert will trigger the corresponding warning indicator or cause a message to be sent to the relevant personnel for troubleshooting onsite**; this prevents equipment components from operating under abnormal conditions, which may result in damage or mess.

Feature 2

Optimized processes that minimize energy consumption in commuting

1. The remediation task was managed as a special project with dedicated systems, monitoring and assessment protocols, operational adjustments, and maintenance schedules. This enabled suitable or minimal number of personnel to be allocated, which saved energy consumption on commuting.
2. For outsourced tasks, CPC tried to engage parties that were situated close to the site or in the nearby county/city to minimize the need for long-distance travel by contractors.

Feature 3

Optimized execution of remediation

1. Based on the scope and depth of contamination gathered through environmental survey, CPC was able to **make the optimal plan for well position, well count, and depth** similarly to target drug treatment for cancer, and reduce resource wastage.
2. **Regular performance and parameter monitoring on single well operations:** Remediation wells were closely monitored for their extraction and injection performance as well as maintenance frequency (such as well cleaning, filter replacement). This ensured that the wells continued to remove contamination and prevented waste of energy in units that failed to achieve the desired outcome.
3. Whenever the system was found to deliver limited results under optimized parameters, **the team would immediately try to increase the number of remediation wells or take additional/different remediation techniques** (such as use of ISCO enhancement), and thereby minimize non-productive energy consumption while shortening the remediation timeline.

Remediation outcome

Optimized efficiency of in-situ remediation efforts

Power saving totaled **318,663 kWh** energy saving **50 %**

Environmental

- Reduced CO2e by about 260,000 kg
- Reduced NOx by about 500,000 g
- Reduced Sox by about 230,000 g
- Reduced PM 10 by about 38,000 g

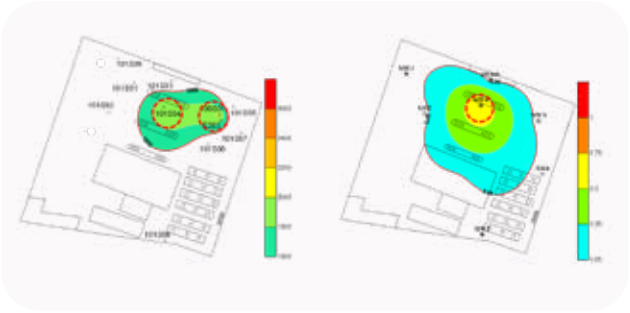
Economic

- Benefit from change of land value: NT$13,448,880
- Benefit from increase in industrial output: NT$23,040,891
- Increase in added value: NT$13,448,880
- Increase in job opportunities: 18

Social

- Accident risk of remediation workers: 0.237122%
- Health risk of remediation workers: 5%
- Health risk of residents: 5%

CPC prioritized the in-situ remediation technique to minimize the waste and mess that would otherwise result from a destructive technique.



The positions, specifications, and number of remediation wells were determined based on the outcome of pollution survey, which helped avoid unnecessary waste of resources.

Contaminated soil produced from excavation works and soil left over from construction activities were handed over to 3rd-party institutions for reuse.

03
SPECIAL COVERAGE

GSR – Gongdao 5th Road

The Hsinchu Oil Supply Center, formerly known as CPC Hsinchu Oil Depot, was commissioned in 1954 and used to supply 1,800 to 2,000 kiloliters of oil per day. Given that the oil supply center was situated close to a residential area, commercial district, and technology cluster, the local residents have expressed dissent against the presence of such a facility time and time again. Eventually, the central government, CPC, and the local government worked together to decommission Hsinchu Oil Supply Center along with its 18 oil tanks in 2017. A pollution remediation and urbanization project was soon passed to connect the nearby TFC ONE and the new arts and culture development into a "Hsinchu Science X Innovation Industry Park."

CPC has been taking active measures to control the quality of soil and groundwater at the site that used to be Hsinchu Oil Supply Center, and adopted techniques and management approaches that cater for environmental, social, and economic benefits at the same time. A green, sustainability, and remediation system was introduced for the remediation of the polluted site, and attention was directed toward supporting the United Nations' Sustainable Development Goals (SDGs).

Preservation of life on land

Preservation and sustainable use of life on land ensure biodiversity and prevent land degradation:

- Actions have been taken to remediate land pollution.

Climate action

Mitigation and mediation actions should be taken in response to climate change and impacts:

- Technologies have been adopted to achieve green benefits such as energy conservation, carbon reduction, and carbon storage while at the same time ensuring recycling and reuse of resources.

Clean water and sanitation

Sustainable management of, and access to, water and sanitation for all:

- There is contamination of groundwater at one of the factory sites; to prevent local residents from drawing groundwater, CPC continues to supply drinking water to households in the downstream until the factory site is cleared of contamination.

Support for inclusive and sustainable economic growth, industry innovation, and infrastructure:

CPC cooperates with local business partners to offer work opportunities for up to two years in the Hsinchu area and spends the budget in ways that boost the local economy.

- Approximately **7,700** people were mobilized, and excavators were dispatched to perform **1,973** missions
- In line with the Zhuke X Project, CPC cooperated with tenants of Hsinchu Science Park to support the development of AI, big data, cloud computing, and Internet of Things. These efforts are estimated to produce NT$ **147 billion** in value and create **20,000** jobs in the smart industry.

Practices

Introduction of the Green and Sustainable Remediation (GSR) system

Before executing the project, CPC evaluated how the GSR mindset could be applied to support green efforts and carbon reduction measures in the optimal way, and analyzed project characteristics and challenges in detail in order to come up with an appropriate GSR decision. According to the analyses of the site improvement system and groundwater sampling tools, implementation of best management practices (BMPs) has achieved the following reductions

Total Reduction

CO2 **6,901.56** Kg

NOx **1,444.07** g

SOx **2,217,69** g

PM10 **449.94** g

Precision survey

The oil supply center has long been in existence, and a rigorous pollution survey was planned to precisely determine the location, concentration, and distribution of pollution. Due to the fact that oil pollutants tend to spread from underground pipelines, CPC surveyed the soil condition using ground-penetrating radar (GPR), resistivity image profiling (RIP), and membrane interface probe (MIP) and took soil samples at about 250 locations before proceeding with excavation works. By establishing a 3-dimensional outline on the spread of pollution and pipeline position, CPC is able to plan its works and strategies appropriately ahead of time.

Pipe removal and prevention of secondary contamination

The underground pipelines have been altered several times over the years to accommodate changes in operation (such as relocation of heavy/light oil loading zones), leaving behind pipelines from different times. To properly treat pollution, pipes must be removed. Failure to do so creates work safety risks and may lead to inappropriate discharge of residual oil waste, causing secondary or new contamination. For this project, CPC has adopted sparkless cutting and made progressive plans to cut pipelines of different sections, depths, orientations, and functions. By avoiding the use of tools that may cause structural damage to the pipelines, CPC was able to collect oil waste and greatly reduce the impact of secondary contamination on the environment and nearby residents, which in turn lowers hidden costs of the improvement work and the environment.

Efficient screening, testing, and classification of soil

Classification of contaminated soil depends largely on the quick screening (such as use of TPH test-kit) performed on site, and by increasing the precision of the screening method, we can efficiently distinguish soil of different levels of contamination and determine the optimal method of treatment. In a collaboration with the team at Industrial Technology Research Institute, CPC adopted the fast gas chromatography process from the soil sample laboratory and was able to significantly reduce errors in the quick screens performed on site, and thereby improve the accuracy of soil classification, increase the efficiency of excavation works and machinery allocation, and decrease the carbon footprint of various tasks performed.

Increasing and ensuring success of bioremediation

Most of the contaminated soil found on site is characterized as silt and silty clay, and would require pre-treatment for more effective bioremediation. In an attempt to increase the success rate and efficiency of bioremediation efforts, CPC has incorporated the use of diesel-degrading bacteria as part of the bioremediation procedure, added appropriate amounts of nutrient salt based on site analysis, increased the frequency and intensity of soil tilling, and adjusted the formula for soil of different contamination characteristics and severity.

Effective reduction of contaminated soil

Reducing the amount of contaminated soil leaving the site would be an added advantage, which was why CPC adopted effective bioremediation treatment on soil of moderate- or low-level contamination. By improving the effectiveness of bioremediation treatment on soil with high-carbon contaminants, CPC expects to reduce the volume of contaminated soil leaving the site, which will have a decisive effect on the overall effectiveness of the project. If we are able to reduce the volume of contaminated soil leaving the site, we can lower the carbon footprint incurred on soil transportation and accomplish our long-term goals on green remediation while allocating budgets in a more efficient manner.

Sustainability outcome

By applying the GSR mindset in the survey of Hsinchu Fuel Distribution Center, CPC is able to pinpoint the contaminated areas and minimize unnecessary digging. This approach also allows more efficient screening methods and more effective assessments of bioremediation performance, which help shorten the work duration. Reducing the volume of contaminated soil removed from site has lessened overall remediation expenses, and adopting prevention against secondary contamination has minimized impact on the environment and the residents. Aside from ESG benefits, the remediation will ultimately create value for the land when it becomes part of an urban development project.

Social welfare

- Personnel health and safety
- Preservation of historical buildings

Environmental protection

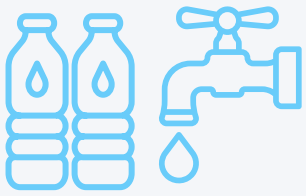
- Reduction of energy consumption
- Reduction of emission
- Reducing total impact of soil removed from site
- Reuse of water resources
- Waste reduction

Economic benefit

- Improved cost effectiveness from lessened removal of contaminated soil
- Establishment of relationship with diverse partners
- Connecting the "Hsinchu Science X Project" for increase in land revitalization yield

Since 2020, CPC has been supplying of retail water in jugs per year

6,600 liters

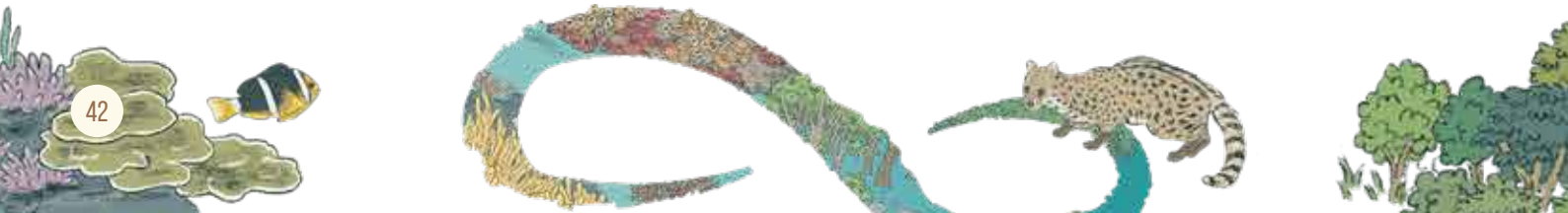


Supply of safe drinking water

The site exhibits contamination of groundwater, and CPC is currently supplying drinking water to downstream residents until the site is cleared of contamination. Meanwhile, the Company reminds residents to avoid drinking and making use of groundwater, whereas employees are assigned to visit local village chiefs regularly to brief on work progress and gather public opinions.

Preservation of historical buildings

When the government of The Republic of China relocated to Taiwan in 1949, it constructed Zhong Zhen Village, the first military dependents' housing, over unused factory land. This village, together with the "giant chimney," have been designated as historical building by the Hsinchu City Government. Since 2020, the remediation work on Hsinchu Fuel Distribution Center has removed 17 of the pre-existing oil tanks, but considering that tank S1 was the first to be constructed and that the structure carries historical significance, it has been preserved intact.



Environmental protection

Improved vegetation coverage in the area by about

8,000 square meters

The vegetation has stored approximately

3.66 MT

Between 2020 and 2022, CPC recovered

367.14
MT of waste pipelines

266
liters of waste oil

Reduction of energy consumption

By using precast concrete blocks as retaining wall, CPC is able to avoid casting new retaining walls for each work section and save the hassle of removing them afterwards. These concrete blocks also offer the flexibility of being hoisted to the desired location at any time, and moved off the work site once the task has ended to be used in another project, all without generating any construction waste.

Reduction of emission

Through the use of automated time control, equipment can be operated within shorter duration of time for optimal environmental impact at the work site. Dust covers have been deployed on large areas of bare land to suppress spread of dust.

Reducing total impact of soil removed from site

CPC adopts a combination of soil replacement and bioremediation techniques. Any soil excavated from site that is deemed to carry a moderate level of contamination is transported to a nearby location for bioremediation. Compared to the alternative option of removing all soil of moderate- and high-level contamination from the site, this process reduces emissions of CO2, NOx, SOx, and suspended particulates.

Reuse of water resources

Waste oil, wastewater, and rainwater are treated separately. CPC gathers rainwater at times of heavy rainfall and uses it to wash equipment, ground, and for suppression of dust.

Waste reduction

Waste pipelines are reused as material; oil residuals inside underground pipelines are collected by the professional pipe removal team and transported using tank trucks to CPC's refineries for recycling and reuse.

Economic benefit

building separation that reduced work expenses by approximately

NT$ **600** million

Establishment of relationship with diverse partners

Takuo Sakai, Professor of Osaka Prefecture University, and his team of technology experts have been invited to exchange knowledge and offer guidance onsite. Meanwhile, CPC cooperates with Vanung University and National Taiwan University on studies that involve the use of diesel-degrading bacteria and microorganisms capable of fast and efficient degradation of high-carbon oil contamination in soil remediation; by adopting the bioremediation approach instead of off-site remediation, CPC hopes to lessen carbon emission and work expenses.

Connecting the "Hsinchu Science X Project" for increase in land revitalization yield

In the future, the 28 hectares of land owned by TFC and CPC along Gongdao 5th Road will be the focus of Hsinchu City Government's Hsinchu Science X Innovation Industry Park project, and become a R&D and software-based industry park for next-generation technologies such as AI and IoT, surrounded by international exhibition centers and leisure spaces. The project plans to construct three main buildings; the first software building with a budget of NT$4 billion is expected to be completed in 2024, and its software focus should complement the hardware-heavy Hsinchu Science Park in a way that increases product added value.

Improved cost effectiveness from lessened removal of contaminated soil

The project adopts techniques such as bioremediation and building separation that reduced work expenses by approximately NT$600 million.

Group photo of the GSR Team commended by the Ministry of Environment

04
SPECIAL COVERAGE

Carbon Capture, Utilization, and Storage

CPC supports Taiwan's 2050 Net Zero Emission Roadmap and actively promotes carbon negative technologies such as carbon capture and utilization (CCU) and carbon capture and storage (CCS). Through these technologies, the CO2 released from production activities can be captured and stored or even produced into synthetic chemicals, which opens up opportunities for a new industry chain and economic models.

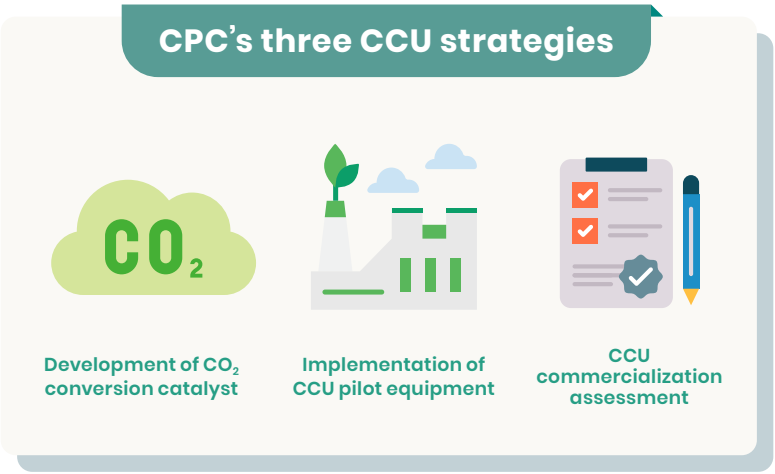
Carbon storage

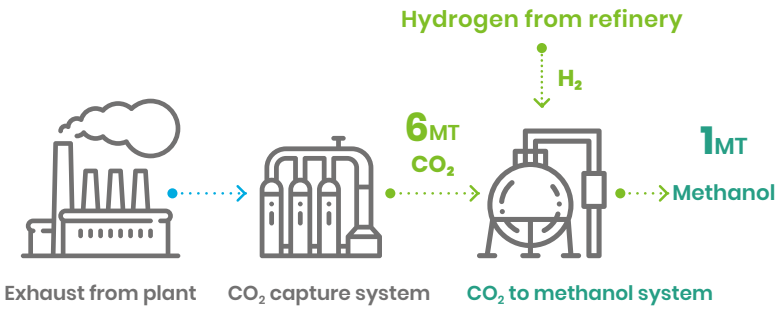
With respect to carbon storage technology, CPC has accumulated extensive expertise and experience in onshore as well as subsea excavation and drilling in Taiwan. The organization has been working with CCS Alliance, an organization spearheaded by the Bureau of Energy of the Ministry of Economic Affairs, since 2010 to develop new technologies for storing carbon. A trial run for the technology was conducted at Yongheshan Power Plant in 2011 to validate the feasibility of the carbon storage technology and to provide useful reference for future R&D efforts. CPC remains committed to mastering the carbon storage technology by integrating domestic resources and drawing experiences from around the world.

Carbon storage technology not only helps businesses lower carbon emission, but also opens up new revenue opportunities. Out of support for national policies, CPC recently reactivated its carbon storage project, which is a vital part of carbon negative technologies, at Tiezhenshan, Tongxiao Township in Miaoli County. The Tiezhenshan Carbon Capture Collaborative Trial Project passed environmental assessment in 2023, and once the ground treatment works are complete, Miaoli Tiezhenshan will have the capacity to store 300,000 MT of CO2 over 3 years. Actual carbon storage will be monitored persistently for the period from 2028 to 2030. CPC has invested approximately NT$162 million into developing the technology over the last 5 years, and expects to invest another NT$3.7 billion before 2030.

Carbon capture and utilization

As a support to Taiwan's net zero goals, CPC assembled a Carbon Capture, Utilization, and Storage (CCUS) Team in 2021 to assist the Company with the implementation of carbon reduction policies at emission-intensive plant sites. CPC turns the CO2 it captures into chemical products such as dimethyl carbonate, methane, and methanol, and the additional supply of methanol not only lessens Taiwan's dependency on imports but may even meet the increasing methanol demand in Northeast Asia and be turned into chemical products of longer carbon cycle for carbon reduction benefits.





In order to make a viable commercial model out of carbon cycling, CPC has been exploring ways by which CO2 can be captured and utilized, and installed trial facilities for "CO_2 Capture and Methanol Conversion" within oil refineries to validate the technology. The trial facilities for "CO_2 Capture and Methanol Conversion" comprise two main systems: "CO_2 Capture" and "Conversion and Utilization," which are based on an innovative technology that involves low energy consumption. The technology adopts the chemical absorption method, using liquid amine to capture CO_2 from the exhaust gas generated from production activities. By applying the right catalyst and a highly efficient process, CO_2 is turned into methanol, which has a lower carbon footprint and can be made into chemical materials such as ethylene, propane, and ethyl.

The construction began in 2022 and was completed in December 2023. Outcomes of the trial run showed CO_2 capture and methanol production having met expectations, and that concentration of captured CO_2 exceeded 99%. Currently, CPC is able to capture 6 MT of CO_2 from exhaust and convert them into 1 MT of methanol a year. In the future, CPC will continue to engage in technology validation, catalyst development, and production optimization while aiming to maximize carbon negative benefits with more scalable and more efficient solutions.

CO_2 capture and utilization system

With the completion and full production of the trial facilities, CPC hopes to replace oil with CO2 as an alternative source of raw material, and in doing so contribute to the supply of low-carbon plastics for the domestic petrochemical industry in order to meet the low-carbon requirements and carbon taxing in USA and the EU. Construction of this trial facility not only conveys CPC's resolve to reducing carbon to the general public, but also helps accumulate practical experience on the technology, which may prove beneficial to the research and development of CO2 hydrogenation catalysts while allowing technical support to other production procedures within the company. CPC has made plans to construct facilities capable of capturing more than one million metric tons of CO2 each year as a show of initiative and resolve to reducing carbon.

CPC capture and utilization goals

2030

- Construct carbon capture plants with capturing capacity of 1 million MT/year and utilization capacity of 250,000 MT/year.
- Feasibility report for 750,000 MT/year of storage will have to be completed first.

2040

- Increase capacity of carbon capture plant to 2 million MT/year.

2050

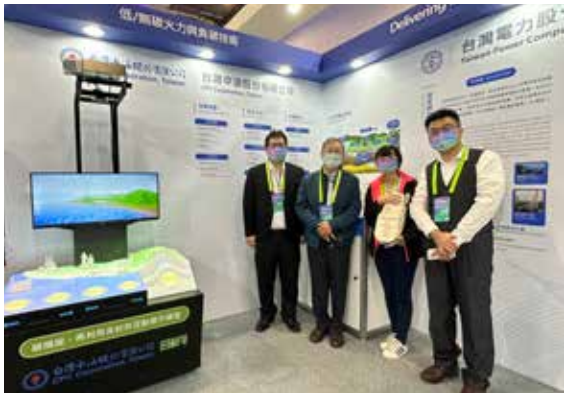
- Increase capacity of carbon capture plant to 3 million MT/year. The CO_2 utilization capacity to be determined based on availability of hydrogen$_{Note}$ at that time.

» Note: CO2 utilization requires a stable supply of hydrogen, which is why a hydrogen source is a critical factor to the feasibility assessment.

Education, awareness, and communication

CPC takes part in multiple exhibitions to showcase CCUS interaction model and convey proper knowledge on carbon storage to the public

CPC spares no resources in promoting knowledge and communication. The organization also takes the initiative to organize awareness campaigns, and cooperates with local government agencies, colleges, research institutions, and environmental protection organizations to convey to the general public the proper knowledge on CCUS, thereby eliminating their concerns about the new technology. CPC participated in a total of eight exhibitions in 2023, during which it used the CCUS model as a means to interact with the general public. Additionally, 350 questionnaires were issued to survey the public's awareness, support, and concerns about CCUS.



CCUS Mystery event at CPC Petroleum Discovery Museum

Carbon reduction issues continue to gather attention around the world. Considering how net zero emission has become a global shared value, the International Energy Agency (IEA) has designated "carbon capture, utilization, and storage" (CCUS) as one of the critical technologies for carbon reduction. CPC has made prominent progress in the development of CCUS technology, and aside from relying on its own R&D capacity, CPC also exchanges knowledge and cooperates with academic and research institutions in a proactive manner, and supports government policies by taking part in cross-department carbon storage trials. Data gathered from the test sites is presented to government agencies to support law-making. CPC hopes to convey its net zero carbon goals and promote CCUS technologies to the general public, and join the world in turning climate risks into green transformation opportunities as we take steps toward accomplishing net zero.

Furthermore, CPC Petroleum Discovery Museum hosted a reality mystery-solving event in 2023 that invited visitors to look for clues in a physical setting as the story unfolds. The game not only gave participants a sense of accomplishment but also strengthened bonds between them. In this "CCUS Mystery" event, the museum introduced elements of CCUS technology into the game and designed a number of challenges that aimed to convey basic scientific knowledge to the participants, and thereby helping the general public develop proper awareness.

05
SPECIAL COVERAGE

Environment and Ecology

Environment and ecosystem protection have always been part of CPC's core value. CPC holds the conviction that businesses should embrace ecosystem, social, and cultural protection not only as an important mission, but also a responsibility to future generations. For this reason, CPC actively engages in various environmental protection activities and makes ecosystem preservation a part of the organization's sustainability guidelines.

To fulfill this vision, CPC has adopted the "science-based survey and research" approach, working closely with experts and scholars from various fields of expertise to survey and study biodiversity in both marine and land environments, and thereby gaining insight into the current state and changes of the environment.

These studies help us establish how business activities affect the nearby environment, and allow CPC and business partners to devise more effective science-based preservation strategies. While constructing the Third LNG Terminal, CPC responded to the opinions of environmental protection organizations and local residents by assembling the Guantang Industrial Park (Port) Ecosystem Preservation Committee to oversee ecosystem preservation in the Guantang area. Meanwhile, through events such as environmental seminar, community activity, and education program, CPC conveys environmental protection awareness to the general public and encourages everyone to take action for the protection of Earth's environment.

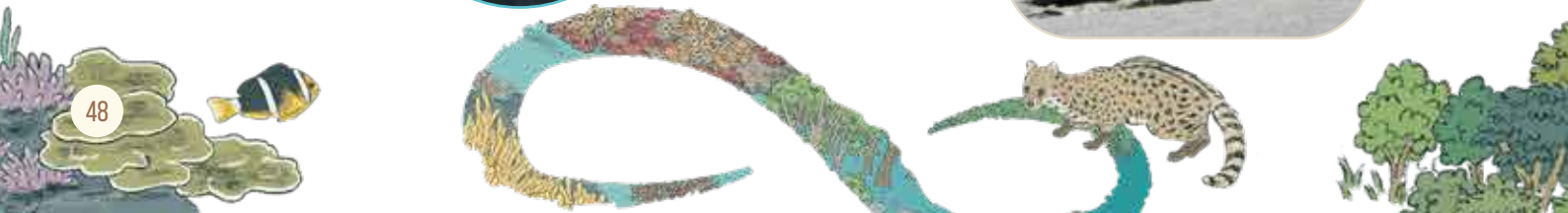
> **Restoring marine and terrestrial habitats as a commitment to the Third LNG Terminal**

For marine habitat, CPC continues to clean up and maintain the nearby environment, and commits efforts into studying marine life, including observation and habitat restoration for crustose coralline algae and endangered coral (polycyathus chaishanensis). As an improvement to the observation technique, unmanned aerial vehicles (UAVs) were used to survey coverage of crustose coralline algae for the first time. CPC also executes biodiversity promotion programs; the Ark for Coral project at Yongan LNG Terminal, for example, was introduced as an attempt to preserve and restore coral species found along Taiwan's coastline.

As for terrestrial habitat, CPC surveys biological resources within the areas of its operation and turns findings into accessible knowledge. Taoyuan Refinery Plant, for example, created nature trails that bring employees and local residents closer to nature, and has been collaborating with outside partners for the preservation of animal species. Following the success of the four reproduction habitats created along the coastlines of Taoyuan for little terns, a protected species, that increased breeding success rate to 70%, CPC then created habitats for birds such as Kentish plovers and Pacific golden plovers.

Protection of marine species

Protection of terrestrial species



Founding of Taiwan's first "Ecosystem Preservation Fund"

During the "Little Tern Preservation Progress Conference" held in 2022, CPC once again stated its commitment to protect the ecosystem, and announced its intention to found Taiwan's first ecosystem preservation fund as a way to rally businesses to this cause. CPC will be obtaining the permit to found its ecosystem preservation fund in accordance with "Regulations on Permit and Supervision of Marine Charity Trust," and expects to contribute budgets of NT$200 million each year over five years for a total of NT$1 billion. Meanwhile, an ecosystem preservation fund management committee and a set of "CPC Corporation Guidelines on Ecosystem Preservation Fund" will be introduced to ensure proper management of the fund and adequate support of ecological preservation actions and research programs in Taiwan.

Progress

Short-term

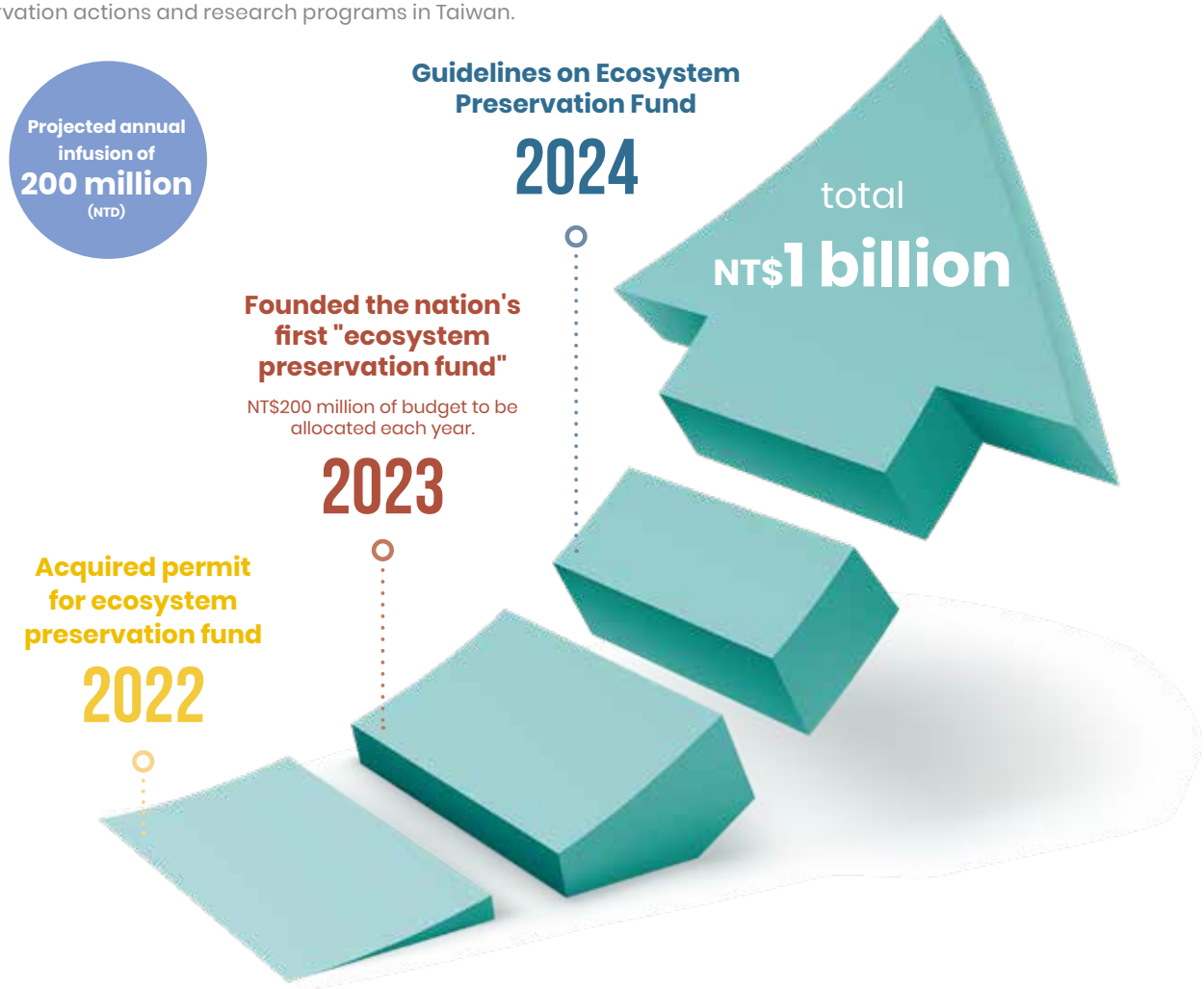
- Establish an Ecosystem Preservation Fund Management Committee and obtain permission for social welfare charitable trust from the authority (Ocean Affairs Council)

Medium-term

- Accept application and review requests for cases that meet the requirements of "Guidelines on Ecosystem Preservation Fund"

Long-term

- Organize ecosystem restoration (preservation)/environmental protection progress announcement events to communicate performance of the charitable trust



Uses of the charitable trust

Support ecosystem preservation research, ecosystem restoration, and environmental education at locations where the Company's production, operational, or construction activities or important facilities are situated. The fund is prioritized to supporting the county/city where development of Third LNG Terminal takes place.

Support environmental protection and ecosystem preservation studies, construction of healthy and sustainable environment, and implementation of necessary measures or plans for promoting environment quality and environmental education in Taiwan (including offshore islands).

Engaging the public in ecological preservation through digital interactions

Through transparency, citizen science, and public involvement, CPC and Guantang Industrial Park (Port) Ecological Conservation Committee hope to deliver the promises of its Third LNG Terminal to coexist with life. Using the dedicated website and APP, the public is able to gain knowledge on environmental preservation, monitor construction works, report the species observed, and engage in various forms of digital interaction at any time to take part in the protection of the algal reef ecosystem.

CPC Bio-Map

Available on the App Store

GET IT ON Google Play

Guantang Ecological Preservation Portal

As per the resolution of the Guantang Industrial Park (Port) Ecosystem Preservation Committee, the Guantang Ecological Preservation Portal (https://cpcguantang.tw/) has been created to communicate with the public on CPC's dedication to protecting the algal reef ecosystem, as well as the committee's role as a 3rd-party supervisor and various suggestions and practices it has made with regard to the preservation of the algal reef. The website openly presents a wide range of information including monitoring data, an introduction to the ecosystem, and live feeds that give the public a thorough understanding of the current state of algal reefs, which in turn reduces conflict between the preservation group and the engineering team and promotes environmental education.

Open and transparent disclosure
of CPC's and committee's preservation efforts

Visual presentation
of environmental monitoring data and ecosystem survey

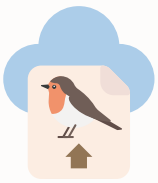
Algal reef livestream
elps monitor construction works and the current environment

Webpage has accumulated more than **150,000 views**

The "CPC Ecosystem Map" APP

A "CPC Ecosystem Map" APP has been created for the public and employees to take part in ecosystem survey, and in doing so raise the society's ecosystem preservation awareness.

With the "CPC Ecosystem Map" APP, users are able to take photos of the lifeforms they observe at or near plant sites using a smartphone camera and upload them to the database, where a team of ecological experts will identify the species and provide feedback with correct information to the users. It is an attempt at promoting the idea of "citizen scientist."



5,250 valid lifeforms

A total of valid lifeforms have been identified through the upload feature

"Ecological Treasure Hunter"

CPC organized a competition called "Ecological Treasure Hunter" between November 2023 and February the following year as a way to bring people's attention back to ecosystem preservation and environmental protection. In this event, we encourage employees and the general public to download and install the CPC Ecosystem Map APP developed by the Department of Environmental Protection and Ecological Conservation, which allows them to experience the fun of exploring nature and scientific knowledge all within a handheld device. Participants were assigned the role of citizen scientist and were encouraged to visit areas near the Company's premises throughout the duration of the competition to explore, record, and share the lifeforms they encounter along the way. The competition was more than just about exploring the ecosystem, but was also about being close to and understanding nature. As participants discovered new life forms, they started to observe habitual behaviors and record the environments these life forms exist in. This engagement not only increases employees' knowledge on the life forms and resources near places where CPC operates, but also strengthens the association between employees' work and sustainability, and emphasizes CPC's commitment to environmental protection.

The extensive volume of data and knowledge gathered through the "Ecological Treasure Hunter" campaign will provide useful reference to CPC when devising preservation strategies for certain species near places of operation. With this precious data, CPC will fine-tune its preservation approach to align with the biodiversity movement that has been gathering attention around the world, and contribute to the biodiversity in Taiwan.

498 people
downloaded the APP and completed registration

4,332
records and photos of animals and plants were uploaded

2,793
of which passed review as valid lifeform entries

88 records of
endangered wild animals, including black-naped oriole, mountain scops owl, crested goshawk, and brown-spotted pit viper

INTEGRITY AND SUSTAINABILITY

01

CHAPTER

Chapter summary

Despite challenges such as international politics and worldwide inflation that caused oil and gas prices to surge in recent years, CPC held its ground and absorbed much of the cost of oil and gas imported to stabilize domestic oil prices. This article explains the fundamental information concerning CPC's operations in the current year, including business locations, facilities, and equipment, and provides an in-depth analysis on the challenges faced by CPC given the current environment as well as its responses and progress.

Reader Priorities

Shareholder (MOEA) • Partners
Public representatives • Customers
Government

1.1 OUR CPC P.53
1.2 DIRECTORS OVERVIEW P.68
1.3 CORPORATE GOVERNANCE P.81
1.4 SUSTAINABLE GOVERNANCE P.95
1.5 SERVICE AND INNOVATION P.102

Corresponding SDGs

CPC's performance highlights

Rated AAA (twn) by Fitch Ratings for

18 consecutive years

Satisfaction score by petrol station customers

97.1

Satisfaction with customer service center's suggestion/grievance handling

99.6%

Received "Excellent" rating for public restrooms at direct petrol stations nationwide

100%

As a subordinate of the Ministry of Economic Affairs in 2023

Excellent rating of Governance Evaluation

Starting from the 34th board of directors

CPC introduced 3 independent directors and assembled an Audit Committee to replace supervisors.

1.1 Our CPC

For more than 78 years, CPC has supported the growth and transformation of Taiwan's industries and supplied them with essential energy sources. As a state-owned enterprise, CPC supports the nation's policies and carries the responsibility to ensure the stability of society and the economy. Motivated by principles of integrity and compliance, CPC strives to operate in stakeholders' best interest, evaluate and control risks of the business environment, and incorporate sustainable governance into the corporate DNA while adhering to its missions on energy supply, diverse service, and sustainable growth. There had been no major change in the organization or supply chain, whether in terms of capital structure or supply chain location/structure, etc., in the current year. The scope of the report covers all entities included in the consolidated financial statements or equivalent documents, and no entity was omitted or excluded.

1.1.1 Introduction to CPC

CPC's business activities cover virtually everything from importing petrochemical materials in the upstream to supplying consumer goods in the downstream. Different production and sales models have been developed for the different types of oil products offered, and CPC has staffing offices in place to oversee operations and governance at the organization level. CPC has operating and sales locations available throughout Taiwan. It explores oil supply around the world in an attempt to create a vertically integrated supply chain that meets the nation's demand for various types of oil products, thereby supporting every aspect of the nation's growth, from infrastructure to consumer lifestyle.

Company Name
CPC Corporation

Establishment Date
June 1, 1946

Ownership
State-owned Enterprise
(MOEA 100%)

Employee count (December 31, 2023)
17,142 Persons
(including contract employees)

Headquarters Address
No. 2, Tso-Nan Road, Nan-Tzu District, Kaohsiung City, Taiwan 811 (R.O.C)

Authorized Capital
NT$130.1 billion.

Sales Volume (2023)
NT$1,103.5 billion

Chairperson
Shun-chin Lee

President
Jeng-Zen Fang

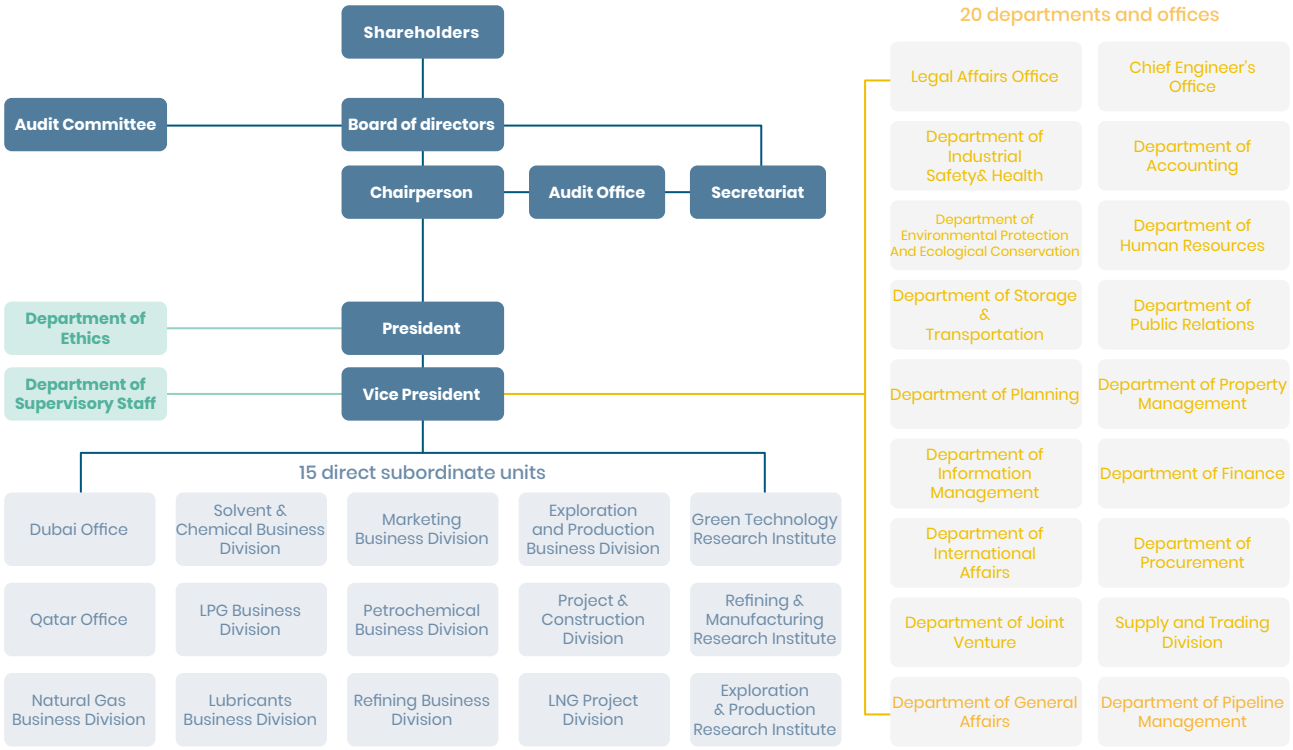
Credit Rating
AAA (twn) by Fitch Ratings

Main business activities

- Exploration, mining, and operation of oil, natural gas, geothermal energy (steam), and other related energy sources or minerals
- Establishment and operation of oil refineries and hydrocarbon compound production plants
- Import, storage, transportation, and sale of crude oil, natural gas, steam, hot water, and oil products, and rendering of related services

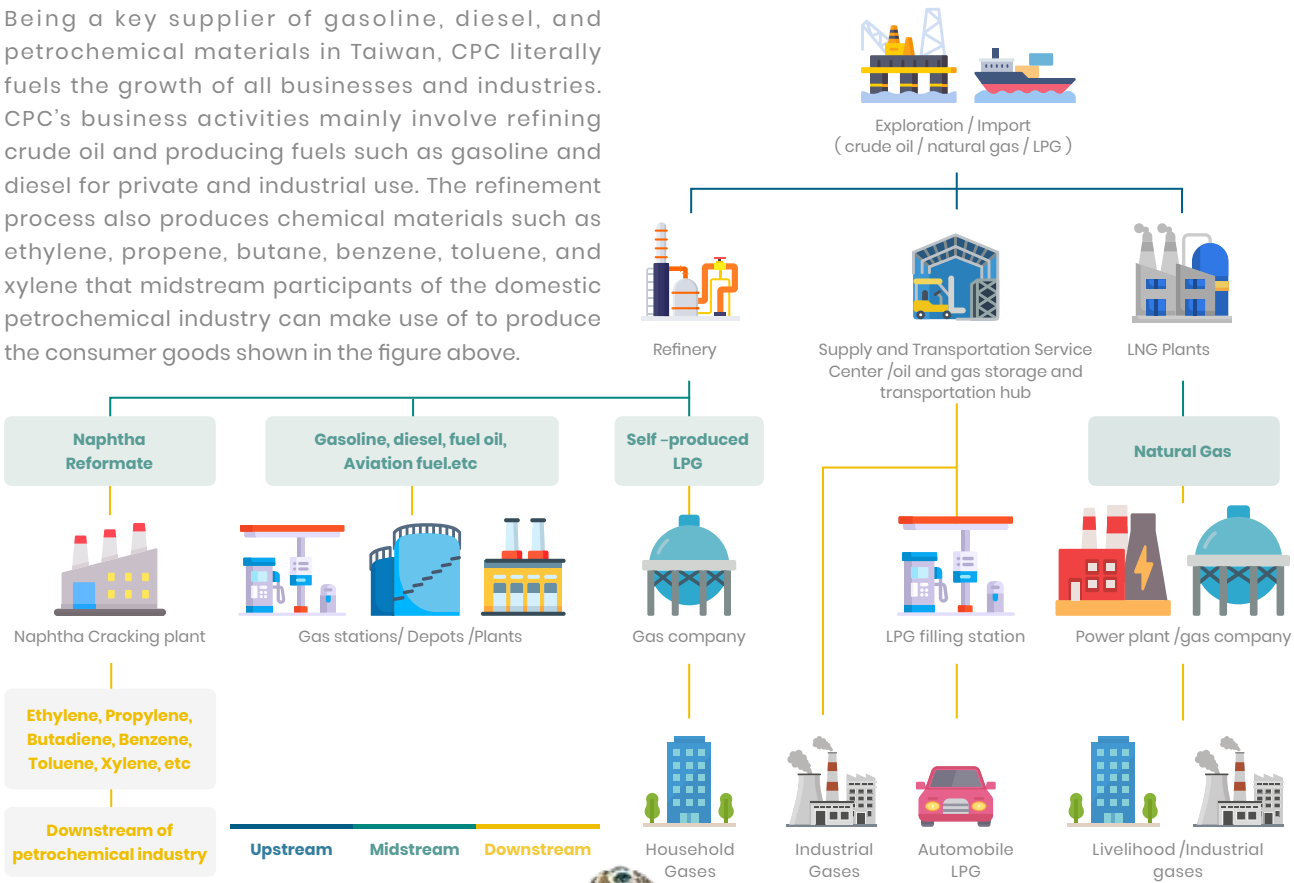
Organization

CPC currently has 20 staffing units and 15 first-line direct report units. For details, please refer to the Organization Chart on the CPC website: https://www.cpc.com.tw

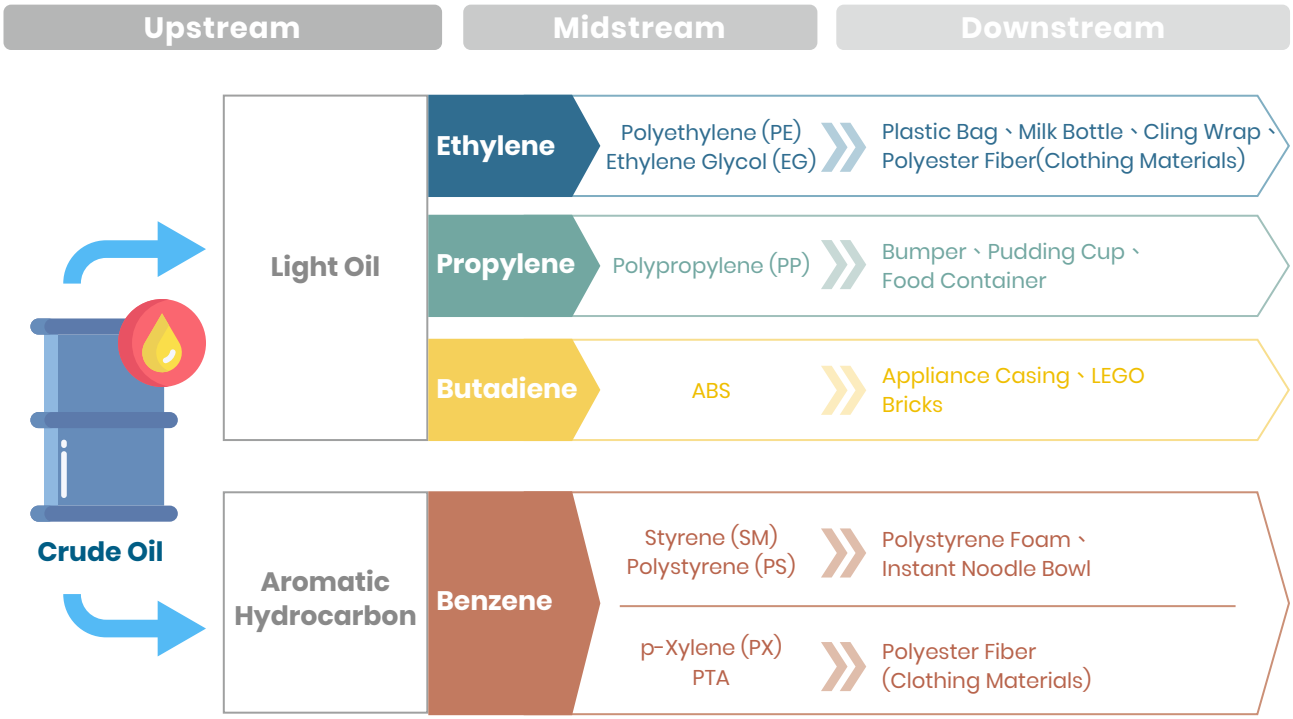


Business activities

Being a key supplier of gasoline, diesel, and petrochemical materials in Taiwan, CPC literally fuels the growth of all businesses and industries. CPC's business activities mainly involve refining crude oil and producing fuels such as gasoline and diesel for private and industrial use. The refinement process also produces chemical materials such as ethylene, propene, butane, benzene, toluene, and xylene that midstream participants of the domestic petrochemical industry can make use of to produce the consumer goods shown in the figure above.



The petrochemical industry plays a critical role in supporting lifestyles, industry development, trade, and economics. It can be divided into: petrochemical raw materials, chemical fertilizers, synthetic fibers, synthetic resins, and plastics in the upstream/midstream and paint, cleaning agents, synthetic fiber textiles, knitted wear, rubber etc., in the downstream that are closely related to people's lifestyles.



Petrochemical products are commonly used in lifestyle goods, transportation, production machinery, and synthetic goods, which is why CPC plays a critical role and holds the keys to lifestyle improvement and industry transformation. CPC devotes great attention to the environmental, social, and governance (ESG) impacts of the petrochemical industry, and evaluates and examines each decision in stakeholders' best interest while taking actions to minimize the negative impacts of its operation, examine risk tolerance, expand positive influence, and explore potential opportunities.

Major Domestic Locations

Refinery	Petrochemical Complex	Fuel Distribution Center	Oil Product Offices	LNG Terminal	Natural gas Supply Centers	Business Divisions	Research Institutes
2	1	13	10	2	8	8	3
Taoyuan, Dalin	Linyuan			Taichung, Yongan			
Supply and Transport Center	Storage and Transportation Office	Nationwide petrol stations (direct, franchise, and collaborative stations)		Natural gas Transportation Center	Natural gas Service Center	Construction Division	Training Institute
1	1	1,926		1	4	2	1

Global operations

In 2023, CPC exported approximately 7.212 million kL of oil products to countries including The Philippines, Hong Kong, Singapore, Malaysia, Australia, USA, Indonesia, Japan, Korea, and United Arab Emirates. CPC adopts a global deployment strategy that covers 15 countries on 4 continents.

Overseas offices

1 USA
Overseas oil operation and investment
Opicoil America, Inc.
Opicoil Houston, Inc.

2 Ecuador
Overseas oil operation and investment company
Ecuador Branch, OPIC)

3 Niger
Overseas oil operation and investment
OPIC Niger S.A.R.L

4 Chad
Overseas oil operation and investment
OPIC Africa Corp.

5 Dubai
Dubai Office

6 Qatar
Qatar Office

7 ingapore
CPC International Trading Pte. Ltd
CPC International Trading Pte. Ltd

8 Indonesia
Overseas oil operation and investment company
Indonesia Branch, OPIC
OPIC East Seram Corp.

9 Australia
Overseas oil operation and investment
OPIC Australia Pty. Ltd.
OPIC Ichthys Pty. Ltd.
OPIC LNG Holding Pty. Ltd.

15 Somaliland
Overseas oil operation and investment
OPIC Somaliland Corp.

Locations of business investments

6 Qatar
Qatar Fuel Additives Co. Ltd.

9 Australia
ICHTHYS LNG Pty Ltd

11 Vietnam
Dai Hai Petroleum Corp.
Maxihub Company Limited

12 Liberia
Faraway Maritime Shipping Co.

13 Cayman Islands
NIMIC Ship Holding Co., Ltd.
NIMIC Ship Management Co., Ltd.

14 Taiwan
China American Petrochemical Co., Ltd.
CPC Shell Lubricants Company Ltd.
Kuo Kuang Power Co., Ltd.
Chun Pin Enterprise Co., Ltd.
Global Energy Maritime Co., Ltd.
Taiwan Stock Exchange Corporation
CSBC Corporation, Taiwan
Overseas Investment & Development Corp.

Overseas mining sites

1 USA
Guardfish site

2 Ecuador
Site No. 17

3 Niger
Agadam site

4 Chad
Oryx oil site

5 Indonesia
East Seram site

6-14 Australia
Ichthys site
Prelude site
WA-285-P site
WA-533-P site
Bedout project
(ncluding sites WA-64-L, WA-435-P, WA-436-P, WA-437-P, and WA-438-P)

15 Somaliland
Site SL10B/13

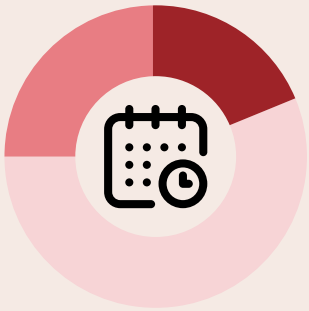
16 Mexicanos
B15 site

1.1.2 Directors overview

Diverse board composition

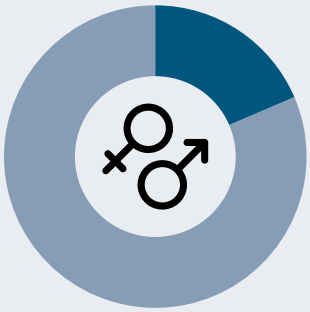
PC is a state-owned enterprise that is 100%-held by the Ministry of Economic Affairs. The board of directors is the highest governance body and it exercises authority on behalf of shareholders. The 33rd board had a total of 13 directors and 3 supervisors, including 2 independent directors, all of whom were appointed by the Ministry of Economic Affairs. Both the Chairman and President held positions as executive directors. Starting from November 15, 2023, the number of seats for the 34th board of directors has been increased to 15, including 3 independent directors, and an Audit Committee has been assembled. For details on directors' and supervisors' academic/career background, salary composition, and education, please refer to the 2023 annual report.

Information on the board of directors



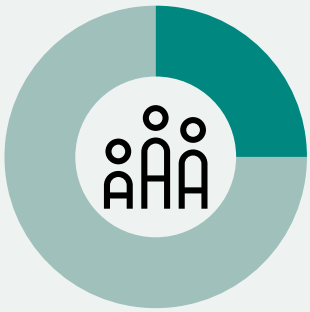
Term of service of director

27%	33%	40%
Within a year	1~5 years	More than 5 years



Gender of director

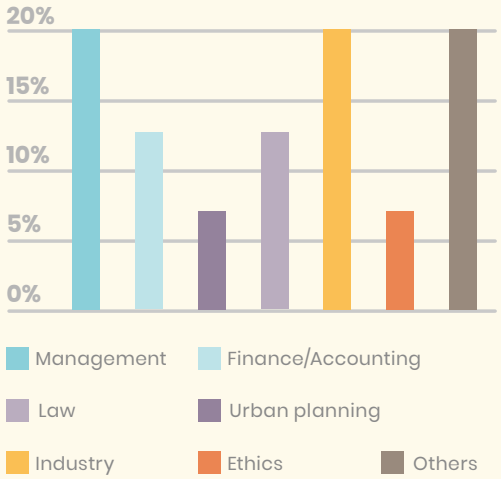
67%	33%
Male	Female



Age of director

7%	93%
Aged 30~50	Aged 51 and above

Professional capacity

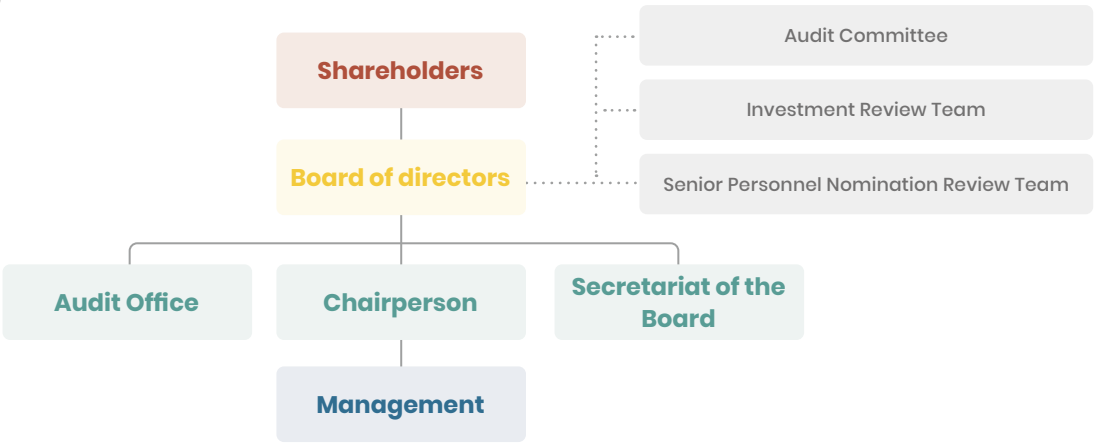


» Note: Based on data of the 34th directors currently in active duty (as of the end of December 2023)

Board operation

Starting from the 34th board of directors, CPC has introduced 3 independent directors to the board and assembled an Audit Committee. A set of Audit Committee Charter has also been established to outline the committee's responsibilities, which include the review of annual financial statements, establishment and modification of the internal control system, and discussion of motions concerning material asset disposal, endorsement, guarantee, derivative transactions, appointment/dismissal of financial statement auditor, chief internal auditor, and head of accounting/finance. Responsibilities that were previously undertaken by supervisors have been taken over by the Audit Committee. Furthermore, CPC previously had "Exploration Review Team," "Business Plan Review Team," and "Procurement Review Team" assembled under the board of directors, and after a series of discussions, the board decided to merge the above teams into an "Operation and Investment Review Team" in the current year.

To assist the board with supervisory duties, CPC would arrange to have directors and supervisors pay on-site visits to various departments and business investments where they can develop a better understanding of the company's business activities to support their supervisory duties. A corporate governance officer was also appointed in 2021 to assist the board with its duties and compliance matters, and to provide necessary support concerning regular training.



Board operation

CPC convenes board of directors meetings on a monthly basis to review the major operating strategies of each department, examine operational reports, track progress, and evaluate the performance of its management team. The minutes of monthly board meetings are published on CPC's website.

CPC has review panels available under the board of directors to assist with decisions concerning corporate strategies, resource exploration, regular procurements, and appointment of senior officers. These panels would thoroughly discuss relevant motions prior to a board of directors meeting and present opinions to the board in order to save time and facilitate the meeting process. A total of 42 motions were discussed in 2023.

Overview of board meetings – 2023

Meetings Held

16

including extraordinary and regular board meetings

Average Attendance Rate

92.8%

Directors and supervisors

Motions Passed

110

HIGHLIGHT

Diverse education and certified home training for directors/supervisors

CPC organizes certified home training courses for directors and supervisors as a way to bring their attention to economic, environmental, and social issues concerning CPC's business activities. These courses are hosted by the Chairman and President, and involve senior managers as well as professional instructors from outside the organization, who will engage directors and supervisors in bilateral discussions so that issues can be reflected in operating activities and decision making.

In light of recent changes in the business environment and regulations, CPC organized three home training courses for directors and supervisors in 2023 on topics concerning "Business Integrity and Fraud Risk Management," "Net Zero: Possible Uses of AI," and "From Climate Action to Nature Action – Key Focus of Business Transformation." Participants were also offered the option to learn via video conference, and some of the courses were open to mid-level managers of related duties. These courses received a total of 141 enrollments.

Diverse engagement between the board and stakeholders

CPC has prescribed in the "Corporate Governance Best-Practice Principles" and the "Rules of Procedure for Meetings of Board of Directors" that: A director having a conflict of interest (COI), either with himself or the corporate investor(s) he represents, shall specify the material contents regarding the COI. When a COI causes threats to the organizational interest, this director shall sidestep from the discussion and voting and their processes of the related proposal, nor shall he represent other directors to exercise such rights. In addition, proposals in relation to related party trade or board members shall be remarked in the proposal to remind directors of COI avoidance. The board of directors had three motions in 2023 that required recusal from directors. See the 2023 annual report for details.

Material bargaining events approved by the board of directors in 2023

In support of national energy policies and transformation goals, CPC plans to construct new power-generating equipment and has included the "M11301 Refining Business Division Dalin Refinery Critical Infrastructure Resilience Improvement Project" as one of its new fixed asset investment plans in 2024.

CPC's Refining Business Division manages 27 parcels of land located in Qianzhen District and Lingya District of Kaohsiung City. To support Kaohsiung City Government's "Asia New Bay Area 2.0 – Smart Technology Innovation Park Project," CPC will aim to commercialize the land through lease of superficies or by participating in government-initiated urban renewal.

To re-evaluate the establishment of a review panel under the board of directors.

Review of tender for power investments.

Performance of the board of directors

CPC has established a set of "Directives for Performance Assessment of the Board of Directors" in accordance with "Corporate Governance Best-Practice Principles for TWSE/TPEX Listed Companies," and evaluates the board of directors' performance by having the board conduct self-assessments internally. Furthermore, individual directors are required to conduct self-assessments in line with "Notes on Appointment of Directors, Supervisors and Key Staff in State-owned Enterprises, Private Businesses and Non-profit Organizations by Ministry of Economic Affairs and Subordinates" and "Notes on Implementation of Independent Director System by Ministry of Economic Affairs and Subordinates" and set performance targets accordingly to enhance board efficiency. CPC also adopts the use of "Review Panel Performance Evaluation Worksheet" to help board members evaluate the performance of various review panels. Performance of the board of directors was rated good overall in 2023. Outcomes of the performance evaluation have been disclosed in the Corporate Governance section of the CPC website.

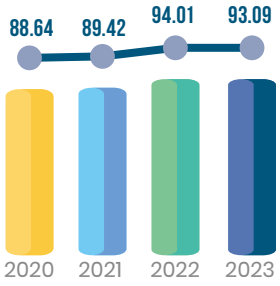
Board performance evaluation

2023

Evaluation outcome

Average score

93.09



Evaluation Indicators

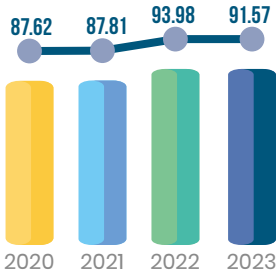
Include level of participation, decision quality, board composition, directors' ongoing education, and internal control.

Description

Each director would offer improvement suggestions with regard to directors' duties, and present the outcome of performance assessment to the board of directors at the end of each year. The outcome of an individual director's preliminary self-assessment, in particular, is forwarded to the Ministry of Economic Affairs for secondary review.

Performance evaluation of review panels

2023



Evaluation outcome

Average score

91.57

Evaluation Indicators

Include level of participation, decision quality, composition of review panel, and scope of proposal.

Description

In October each year, directors and supervisors would evaluate the performance of various review panels including the Senior Personnel Nomination Review Team, Business Plan Review Team, Procurement Review Team, and Exploration Review Team in the last year. The outcomes of the assessment are also disclosed on the Corporate Governance section of the CPC website.

Director and supervisor compensation policy

As a state-owned enterprise held by the Ministry of Economic Affairs (MOEA), CPC compensates its directors, supervisors, and employees according to the "Monthly Compensation Sheet for Directors and Supervisors of MOEA Subordinates" and "Recruitment Policy and Notes on Compensation for Employees of MOEA Subordinates." Performance bonuses are paid according to "Implementation Guidelines on Performance Bonus for MOEA Subordinates. Performance evaluation for senior managers covers ESG goals.

1.1.3 Corporate governance

Short-term

- Strive to avoid major violation of social, environmental, and economic laws as the bare minimum; fulfill social responsibilities and obligations and deliver goals of the government's policies
- Make honest and transparent disclosure of information according to laws or instructions of the authority; adhere to conducts of high ethical standard and avoid corruption

Medium/long-term

- Enhance the quality of the internal control system based on the "Regulations Governing Establishment of Internal Control Systems by Public Companies" and arrange related training and education activities from time to time.

For the purpose of improving corporate governance, CPC not only conducts board of directors performance evaluation, but is also subject to correspondence review and on-site inspection by the State-owned Enterprise Commission, Ministry of Economic Affairs, for corporate governance evaluation, during which the Chairman, independent directors, worker directors, supervisors, the corporate governance officer, chief internal auditor, and head of finance/accounting are interviewed separately to establish a more in-depth understanding of corporate governance practices and how the board functions. Recommendations raised in the previous year's evaluation and CPC's actions taken in 2023 are explained below:

Recommendations for corporate governance evaluation

Recommendation to assemble additional functional committees and designate non-executive directors to serve as conveners.

Outcomes of corporate governance enhancements

- Starting from the 34th board of directors, an Audit Committee comprising the entirety of independent directors has been assembled to help oversee the quality and integrity of the Company's accounting, internal audit, financial reporting, and financial control processes.
- Motions that are subject to review by the Audit Committee include: establishment or amendment of the internal control system, evaluation of effectiveness of the internal control system, business decisions of material financial impact, and matters concerning directors' own interests.
- All major resolutions will have to be supported by more than half of Audit Committee members and proposed for resolution by the board of directors.

Recommendations for corporate governance evaluation

The Supervisor's Mailbox is accessed by three supervisors, who each decide on what to do with the opinions received. However, it was recommended that the Company should standardize the ways opinions are handled by the three supervisors, and devise flow charts that outline the standard procedures.

Outcomes of corporate governance enhancements

- On March 29, 2023, CPC established clear procedures for the Supervisor's Mailbox and in doing so standardized practices across the three supervisors.

Recommendations for corporate governance evaluation

Despite having robust internal audit and internal control systems in place, they should be duly enforced to avoid recurrence of fraudulent conduct.

Outcomes of corporate governance enhancements

- The personnel in question was found to have mishandled purchases during active duty. Improvement suggestions were raised with respect to regulations, policies, and execution.
- A "Checklist for Purchases Above Announcement Threshold" has been designed so that the department in need may use it to conduct their own checks on the necessity and justification for purchase, budget basis, method of purchase, etc., before forwarding the request to the Purchasing Department for review, and thereby enhancing internal control.
- In addition to creating an "integrity section" on its intranet and internet websites, CPC also shares anti-corruption laws, case studies, and improvement suggestions on various occasions such as business report meetings, orientation training, and senior managers' seminar in order to raise employees' awareness and compliance toward rules that are relevant to their duties.
- CPC created a procurement integrity platform for major construction work – "Kaohsiung Intercontinental Container Terminal Phase 2 – Dalin Petrochemical Oil Storage Center Project" and held regular commitment ceremonies. An internal affairs system has also been established to facilitate enhanced audit and tracking over the approval process, budget projection, the tendering process, and tender opening for specific cases. These cases are consolidated regularly into this year's audit plan.

2023 Corporate Governance Evaluation Excellent Award

1

The Company assembled an Audit Committee in November 2023 and increased the number of independent directors from two to three to bring independence and professionalism into the board of directors. The enhancement to auditing and risk management deserves recognition.

2

The 34th board of directors made a resolution to combine the "business plan," "exploration," and "procurement" review teams, which saves time and improves efficiency of board meetings.

3

On January 2023, the board of directors passed a resolution to empower the ESG Committee by creating the role of Chief Sustainability Officer and setting up the Sustainability Office, which are indicative of the Company's resolve in enforcing sustainable business practices.

4

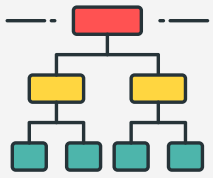
The Risk Management Committee has designed a risk opinion survey form after taking into consideration the practices of the World Economic Forum. These survey forms are completed by members of the board of directors and the Risk Management Committee for the purpose of gathering risk-related information. Outcomes of the survey are presented for discussion by the Risk Management Committee in order to construct the Company's risk profile.

5

The Company spared no effort in promoting innovation, transformation, and new visions. Projects such as geothermal development, hydrogen power, and carbon capture/storage are indicative of the Company's courage to embrace challenge.

For the purpose of enhancing corporate governance, CPC has proposed a series of improvement plans based on the opinions raised for the 2023 first-half corporate governance evaluation, and implemented accordingly to fulfill CPC's visions.

Corporate governance refinement programs – 2023



CPC has reported poor financial position and shown deterioration in long-term and short-term solvency. In addition to reducing the cost of funding, the Company should consider adopting measures that strengthen the capital structure, and take the initiative to suggest reasonable oil price adjustments to the Ministry of Economic Affairs at an appropriate time for the continuity of the Company's operations.

1 CPC will continue exploring ways to reduce cost of capital, such as: making use of low-interest funding tools, signing project loans with banks, issuing commercial papers, making use of overdraft limits, monitoring liquidity and interest rate trends, and making dynamic adjustments to loan tenors. CPC will expand the diversity of borrowing tools used and make open price comparisons in order to keep borrowing costs to a minimum. Additionally, CPC will make dynamic adjustments to the allocation between long-term and short-term borrowings and fixed-rate and floating-rate borrowings in a manner that reduces overall funding cost.

2 Participation in sustainable green finance: CPC signed long-term borrowing agreements that offer margin discounts based on sustainability indices with several banks between 2022 and 2024. It also secured a NT$1-billion green loan specifically for financing green investments from Bank of Taiwan in 2023 in an attempt to reduce interest expenses.

3 CPC reviews the cost of natural gas and possible adjustments to the domestic natural gas price on a monthly basis. Price adjustment proposals are presented to the authority for review. In the second half of each month, CPC would brief the Ministry of Economic Affairs on gas price scenarios for the following month, and try to seek approval to adjust prices in a way that fully reflects the change in gas cost.

The Company's R&D budget for 2023 accounted for 0.48% of the total budget in the last five years (2018–2022), which fell short of the 0.56% target imposed by the Ministry of Economic Affairs in 2021 for state-owned makers of oil products. CPC should increase the percentage of its R&D budget.

All three research institutes have made pragmatic fixed asset investment plans and are actively tracking the progress of their fixed asset investments to ensure timely execution. Progress of the three research institutes is explained separately below:

- In light of the net zero trend and the need for transformation, the Exploration & Development Research Institute has been dedicated to the research of transformation projects in recent years, such as geothermal and geological storage of CO_2. The early stages of research mostly involved lab experiments or computer simulations, and the institute is gradually progressing into fieldwork. The need for site construction should greatly increase R&D budget. Additionally, the Exploration & Development Research Institute is looking to construct a laboratory for analyzing the composition of geothermal fluids given the increasing demand for geothermal, which will also increase capital expenditure. Meanwhile, CPC will continue evaluating the need to construct other laboratories.
- The Refining & Manufacturing Research Institute is currently conducting multiple studies relating to energy/carbon reduction, environmental remediation, and development of biotech products.
- The Green Technology Research Institute is currently undertaking research projects on green and low-carbon energy, high value-adding materials, and circular economy to facilitate transition into the 5G and 6G era and to support development of high-end, next-generation products. The institute looks forward to increasing R&D budget in the coming years to speed up the development progress. In the future, the institute will budget annual spendings according to the progress of its R&D efforts, and will continue investing in the development of advanced technologies in a way that not only meets the requirements of the Statute for Industrial Innovation but also provides a solid foundation for the Company's net zero transformation efforts.

CPC adopted TIPS and was certified for TIPS_A

In 2023, CPC supported the government's energy policies and planned a series of transformations that not only emphasized "diversity, innovation, and sustainability," but also introduced incentives to support researchers' efforts in the development of advanced technologies. To protect the R&D outcome of CPC's three research institutions (namely Exploration & Development Research Institute, Refining & Manufacturing Research Institute, and Green Technology Research Institute), CPC has devised intellectual property management plans, policies, and goals and enforced them as part of the organization's corporate governance and compliance requirements.

Intellectual property management

Goals

1. To submit six patent applications for technologies that are relevant to the Company's environmental and sustainability businesses in the future.
2. To complete productivity assessment on the patents acquired and to openly invite licensing of at least one patent over the corporate website.
3. To make productive use of at least one of the trademarks registered/acquired by CPC, and to provide information and materials on related products.
4. To organize two 3-hour training courses on patent search and analysis, and to test researchers and patent handlers of various research institutes after each training session.

All objectives were accomplished in 2023. A "Report on Intellectual Property Management Plan and Execution" was presented to the board of directors on December 13, 2023 and subsequently disclosed to the public over the CPC website.

Quantitative outcomes of training conducted in 2023

About **30** people participated

A physical "Business Secret and Internal Audit Training" was organized for TIPS personnel

About **100** people participated

The three research institutes jointly organized an online "Patent Search and Analysis Training"

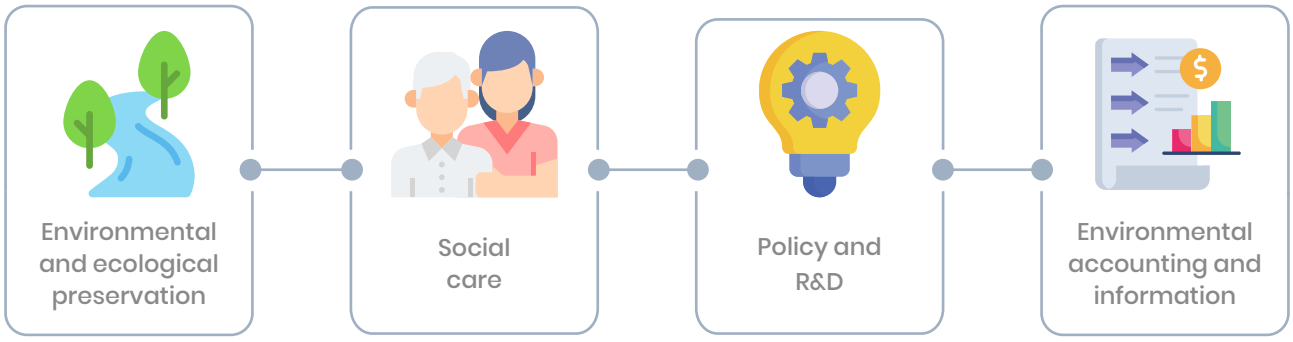
About **370** people participated

An online "CPC Yearly Basic Intellectual Property Training" was made mandatory for new recruits and optional for all existing employees

1.1.4 Sustainable governance

Cornerstone of sustainable governance

CPC is dedicated to integrating operating strategies and sustainable practices as a response to the market's increasing attention to ESG issues. With the assembly of "Sustainable Management Committee" in 2005, CPC divided sustainability management into four main fields, namely:



Environmental

Environmental and ecological preservation & environmental accounting and information

Reduce impact of business operations on the environment; promote renewable energy sources; lessen carbon emissions; accomplish net zero; and support low-carbon, sustainable growth.

Social

Social care

Commit to improving employees' professional capacity; promote education; support charity organizations; and create common interest for the society.

Governance

Policy and R&D

Commit to enforcing sustainability governance; cooperate with supply chain partners toward accomplishing common sustainability goals.

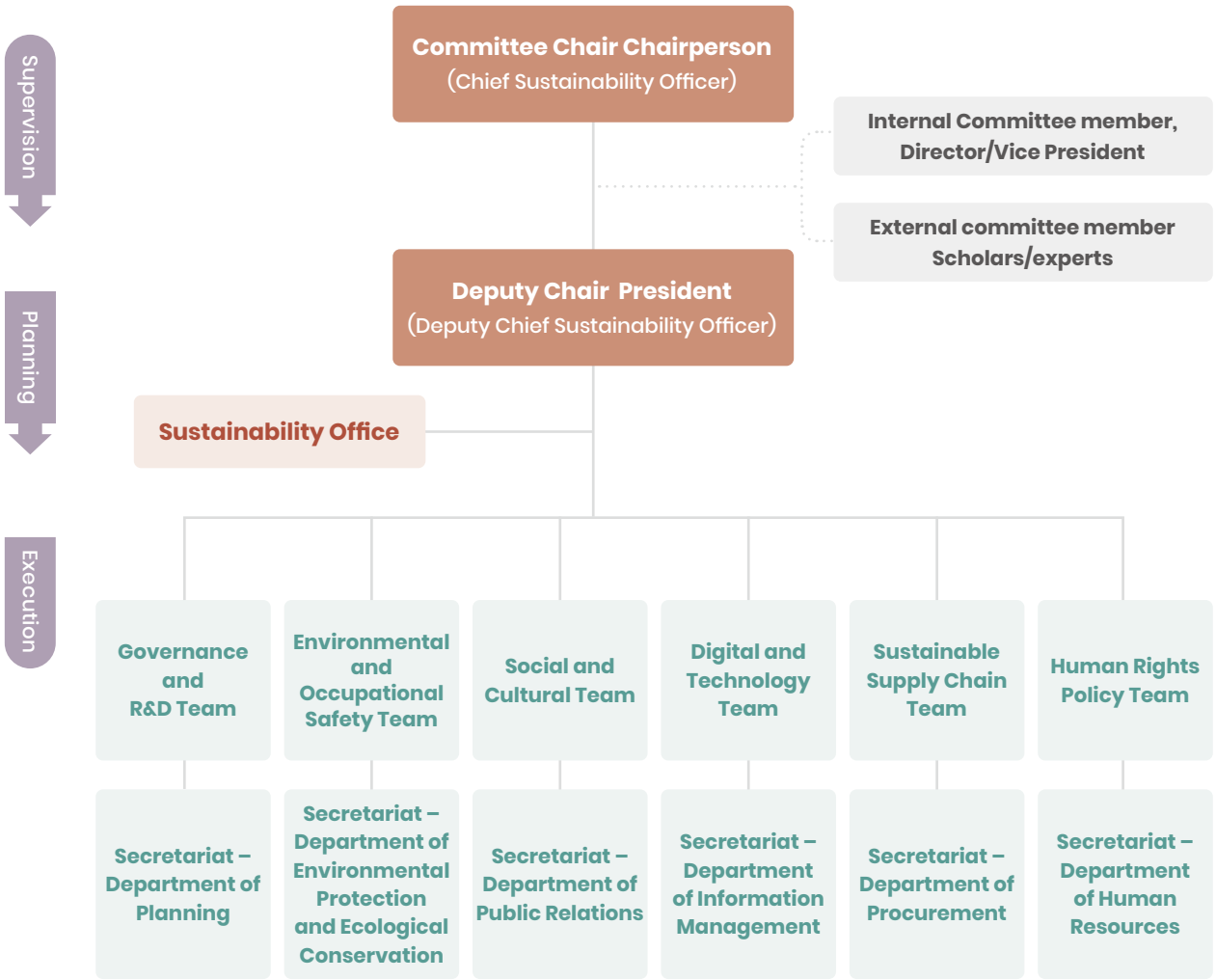
CPC pays constant attention to sustainability trends locally and abroad, contributes expertise on both strategic and operational levels, and promotes the sustainability of the organization as well as society. CPC has implemented internal policies including "Corporate Governance Best-Practice Principles," "Code of Ethical Conduct," and "Rules of Procedure for Meetings of Board of Directors" to enforce corporate governance, and observes "Act on Recusal of Public Servants Due to Conflicts of Interest," "Integrity and Ethics Principles for Employees of the Ministry of Economic Affairs," and integrity principles when carrying out business activities. CPC strictly prohibits corruption, bribery, and any attempt to exploit the vested authority for own gains or gains of others, and continues to empower the board of directors and supervisors for supervisory duties. A corporate governance section, an e-publications section, and a news and announcements section have been created on CPC's website to disclose shareholders' meeting annual reports, sustainability reports, and financial as well as non-financial information on a regular basis. With increased information transparency, CPC hopes to better protect shareholders' and stakeholders' interests.

Sustainable Management Committee

CPC assembled a "Sustainable Management Committee" in 2005 to plan and promote sustainability-related affairs. Starting from 2024, the Sustainable Management Committee has been reorganized to contain three tiers, namely "supervision, planning, and execution," for better alignment with international and regulatory trends and to more actively involve the board of directors in sustainable governance.

To further increase the level of supervision and involvement from the board of directors in sustainability-related matters and to hold senior managers responsible for ESG performance, CPC has appointed the Chairman to assume the roles of committee chair and Chief Sustainability Officer, and assigned the President to the roles of deputy committee chair and Deputy Chief Sustainability Officer, who are tasked with the responsibility to promote ESG culture throughout the organization. Meanwhile, some of the directors, vice presidents, and outside experts and scholars have been designated as committee members to take part in examining sustainability issues that are relevant to business operations and are of stakeholders' concern. Together, they conduct rolling reviews on CPC's economic, environmental, and social impacts as well as responsibilities.

The Sustainable Management Committee convened three meetings in 2023, and directors were invited from time to time to raise proposals relating to sustainability; additionally, the President made unscheduled reports to the board of directors regarding the progress and outcome of sustainability practices. Internal departments were also required to make special reports to the board of directors and examine the impacts of economic, environmental, social, and governance issues as well as responses.



HIGHLIGHT

Creating dialog opportunities and developing net zero consensuses among CPC employees

By creating dialog opportunities, CPC persistently promotes stakeholders' understanding toward net zero transformation and gathers employees' support for CPC's sustainability mission. Since 2020, the organization has engaged in active discussions with managers and employees about the transformation plan, and has been exploring ways to implement strategies for "High-value Petrochemical, Low-Carbon Emission and Lean-Renewable Energy". This resolve toward net zero transformation is conveyed through countless meetings and discussions.

2020

In response to the government's 2025 nuclear-free policy and air pollution control action plans, CPC gathered senior managers and heads of tier-1 units to discuss how these policies may affect the organization, as well as the appropriate transformation steps.

2021

CPC transformation planning conference

The event is intended to give young employees an opportunity to express their thoughts about CPC's future transformations and paths, and how CPC may apply its R&D advantage toward accomplishing the 2050 Net Zero Emission goal. The conference not only draws employees' attention to the importance of sustainable growth, but also encourages discussion and brainstorming about the just transition that CPC must adhere to over the course of growth.

2022

CPC transformation planning conference for mid-level managers

A total of 56 mid-level and senior managers participated in the conference. The event was intended to gather mid-level managers' opinions and visions on how CPC's future should be, and will provide useful reference for future transformations. Through this conference, CPC managers of various levels contributed their wisdom and professional capacity, and supported the organization's transformation efforts with action.

2023

New Vision Conference and Senior Managers' Conference

For the above conferences, 34 internal units (divisions and offices) were asked to each propose a new vision and assign a tier-1 manager to explain the implications. Opinions are gathered from the bottom up to provide reference for future discussions in senior managers' conferences. Two of the above conferences were held during the year to unite consensus toward the new visions, give the public and employees a better picture of where the organization is heading, and show CPC's resolve toward net zero transformation and sustainable growth.

1.2 | Sustainable Supply Chain

1.2.1 Supply chain management

CPC values corporate sustainability. Not only has it imposed strict requirements for its own fulfillment of sustainability responsibilities and commitments, the organization also coordinates with upstream and downstream partners to exert positive influence and spread the sustainability philosophy for the mutual benefit of the supply chain, starting with their own products, services, and operations. Below is a description of CPC's supply chain system:

Upstream suppliers

- Service related (contracting and service)
- Construction related (building, equipment, and contracting)
- Property related
- Crude oil and natural gas

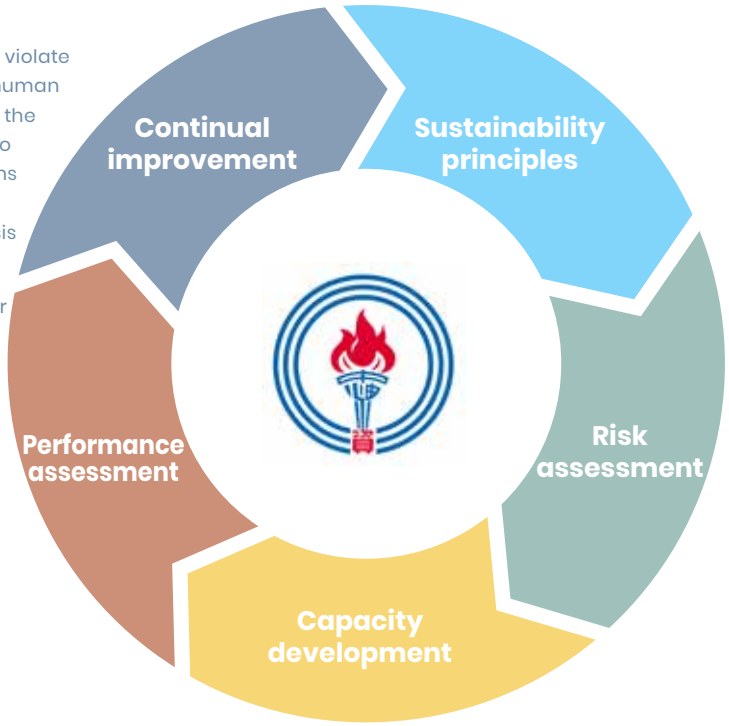
CPC

Downstream

Franchise stations
Petrol station service

Distributor
Solvents
Lubricants
LPG

Supply Chain Sustainability Management



- Supply chain partners that violate worker, environmental, or human rights rules or any policy of the company will be required to propose improvement plans and have performance tracked on an ongoing basis
- ESG self-assessment questionnaires are used for ongoing improvement

- Supply chain partners must comply with worker, environmental, and human rights-related rules

- Supply chain partners are subjected to regular audit, assessment, and counseling for their quality, service, and work safety management

- CPC promotes the use of a supply chain ESG risk self-assessment questionnaire and has created a supplier risk and impact assessment system

- Sharing of training resources; establishment of counseling and training system

1.2.2 Supply chain sustainability assessment

CPC continued supply chain sustainability assessments in 2023, asking all supply chain partners to complete a self-assessment questionnaire over the ESG evaluation system. The self-assessment questionnaire covered five aspects, including: integrity governance, cybersecurity, environmental protection, occupational safety, and human rights. A total of 423 supply chain partners completed the ESG questionnaire, which was 110 more than the previous year. By learning the progress of suppliers' sustainability efforts, CPC hopes to identify areas of weakness and respond accordingly.

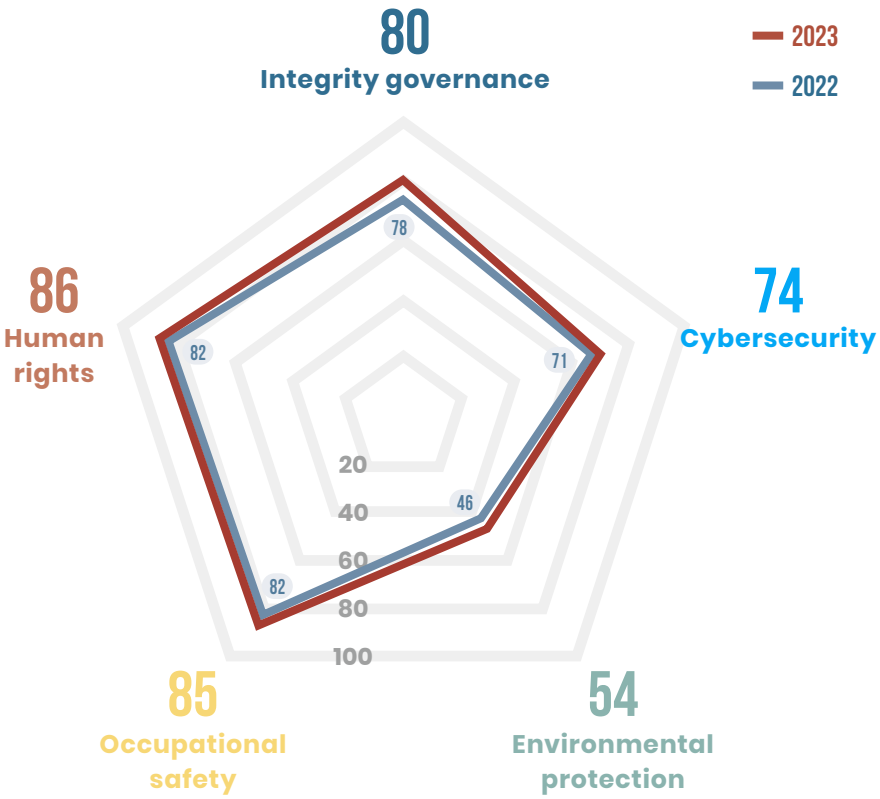
Stage	Key focus
Identifying subjects of evaluation	A questionnaire was distributed to all 423 supply chain partners of CPC, including: suppliers, franchise stations, and distributors.
Design of evaluation questionnaire	The questionnaire had a total of 58 questions that covered five main aspects, including integrity governance, cybersecurity, environmental protection, occupational safety, and human rights.
Analysis of evaluation outcome	A total of 423 supply chain partners including 124 suppliers, 276 franchise stations, and 23 distributors have completed self-assessment. Except for the environmental aspect, all supply chain partners scored above 70 points out of 100 in all other aspects during the 2023 self-assessment.
Improvements to future practices	CPC adjusts its questionnaires based on the outcome of self-assessment, and will continue evaluating suppliers' performance in the five main aspects. Suppliers with low self-assessment scores will be subjected to enhanced oversight, and the procurement and management systems will be improved to achieve greater efficiency.

Total supply chain score and evaluation outcome – 2023

According to CPC's 2023 supply chain evaluation, the supply chain overall delivered better performance in all five aspects compared to the previous year, and improvements were noticed in all sustainability aspects. However, there was still room for improvement in the environmental protection aspect. According to the outcomes of the evaluation, the low score in the environmental protection aspect was mainly attributed to the fact that only 25.3% of supply chain partners adopted greenhouse gas survey.

CPC will take progressive actions to promote greenhouse gas knowledge among supply chain partners in the future. CPC will continue playing the role of industry leader and organize conferences or participate in exhibitions as ways to invite supply chain partners toward supporting CPC's sustainability policies and goals. In 2023, CPC hosted a total of three distributor conferences and meetings to communicate with suppliers on how the organization had adopted a product carbon footprint survey in response to the nation's 2050 Net Zero policy, the possible impacts on future marketing efforts, and issues relating to the net zero trend. Additional courses were also arranged to promote ESG awareness and knowledge. CPC hopes to lead supply chain partners in sustainable practices, and in doing so, fulfill its vision of a sustainable supply chain.

CPC Supply Chain Evaluation



Integrity governance

CPC evaluates integrity and corporate governance practices of the entire supply chain, including: compliance, ethics, fair trade, risk control, and supplier behavior guidelines.

Cybersecurity

CPC evaluates cybersecurity practices of the entire supply chain, including: cybersecurity policy, backup system, and compliance with cybersecurity regulations.

Environmental protection

CPC evaluates environmental protection practices of the entire supply chain, including: environmental management system, greenhouse gas survey, energy conservation measures, use of renewable materials, waste control, and environmental impact assessment.

Occupational safety

CPC evaluates occupational safety of the entire supply chain, including: occupational safety and health principles or policies, labor/health insurance coverage, pension, major illness or work injury, identification of occupational hazards, and training.

Human rights

CPC evaluates human rights practices of the entire supply chain, including: compliance with labor regulations, communication system, human rights policy, prevention against child labor, sexual harassment, and forced labor, and freedom of association.

1.2.3 Supplier management

As a state-owned enterprise, CPC's procurement activities are regulated by the Government Procurement Act and the Company is bound to exercise supply chain management in a fair, just and open manner. The Company treats all suppliers as key business partners, and checks its tenderers for blacklist history using a government database before awarding tender. Suppliers are also required to submit a tax return as proof of integrity. Furthermore, it is essential for suppliers to comply with labor, environmental and human rights criteria; any violation discovered must be responded to with an improvement plan and followed up accordingly.

Policy and objectives of supplier management

- Short-term goal: Pursue quality compliance and competitive pricing
- Medium-/long-term goal: Exert sustainability influence through supplier management; achieve co-existence and co-prosperity and develop long-term partnerships with suppliers

Participation criteria for new suppliers

- Comply with Government Procurement Act and related rules; observe fair trade principles, environmental protection laws, the Labor Standards Act, and occupational safety and health regulations
- Hire people with disabilities and indigenous peoples according to the People with Disabilities Rights Protection Act, the Indigenous Peoples Employment Rights Protection Act, and the Government Procurement Act.

Management system for new suppliers

- CPC has implemented a Contractor Safety and Health Management Policy and requires all purchases amounting to NT$1 billion and above to comply with relevant rules. The policy not only requires suppliers to meet certain social and safety criteria (such as adopting occupational safety and health management system of equivalent standard to CNS 45001 or above), but also outlines reminders, audit practices, penalties, and actions to be taken in the case of social impact. CPC added six new qualified suppliers in 2023, and 100% of suppliers met requirements.

Mechanisms for assessing supplier risks and impacts impacts

Risk prevention

- Suppliers are evaluated for their ability to fulfill contractual obligations
- CPC discusses material supply mechanisms with suppliers periodically and establishes long-term strategic partnerships with them
- CPC determines safety stock based on the material preparation lead-time of various departments to ensure unobstructed supply chain operations

Supplier Risk & Impact Evaluation

Post-disaster damage control

- Damage prevention measures are implemented according to the emergency response system
- CPC gathers information regarding employee safety, plant and equipment, feedstock supply, and finished product damage of suppliers immediately after a disaster and submits the results to all staffing units to understand and take actions
- Depending on the severity of damage, CPC holds emergency meetings, adjusts supplier quota, and assesses the possibility of adding new suppliers to provide backup for the supply chain

Due to the high risks involved with oil refining and petrochemicals, CPC conducts rigorous reviews on suppliers' eligibility as well as their compliance with occupational safety and health laws. Each department would make monthly arrangements to inspect contractors on safety and health issues on-site, and would take the initiative to inspect the factory area daily.

Eligibility of new suppliers (NT$1 billion and above)

6	100 %	0
No. of suppliers having completed social impact assessment	Percentage of suppliers having completed social impact assessment	Number of suppliers having material, substantive or potential social impact

Management of existing suppliers (NT$1 billion and above)

21	100 %	0 %
No. of suppliers having completed social impact assessment	Percentage of suppliers having made improvements after audit	Percentage of suppliers having relationship terminated after audit

Promotion of integrity awareness among suppliers

CPC organized two large-scale campaigns to promote business integrity in 2023, during which it invited suppliers to attend and engage in cross-field exchange of opinions for consensus toward integrity and ethics. The progress of the above campaigns is explained below:

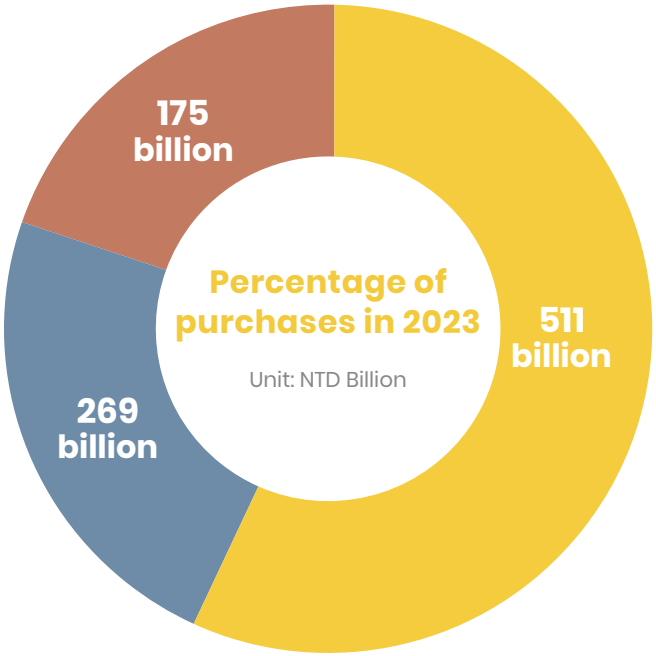
CPC organized an anti-corruption conference titled "Transparency and Integrity in Smart Green Energy," during which it invited approximately 120 participants from industry, government, academia, and supplier representatives to discuss issues concerning corporate transparency/integrity, sustainable management, governance, green energy transformation, etc. The conference received coverage from nine news media outlets.

CPC organized the "Anti-corruption, Work Safety, Transparency, and Sustainability" forum. A total of 110 representatives from various fields of expertise participated in the forum to exchange opinions on issues concerning corporate transparency/integrity, sustainable management, governance, work safety management, etc. The forum received coverage from 20 news media and signified the organization's initiative toward reputation and integrity governance.

CPC introduced anti-corruption procurement meetings in 2023 with the intent to prevent improper outside influence over project execution, performance, and acceptance, and to reduce instances of slander or malicious accusation. Through these meetings, CPC hopes to facilitate communication between prosecution, internal affairs, investigators, the Public Construction Commission, and vendors for the sound execution of procurement projects.

1.2.4 Sustainable purchase

Procurement percentage (excluding crude oil and natural gas)



Procurement of construction work

54% | 51.1 billion

Purchase of property

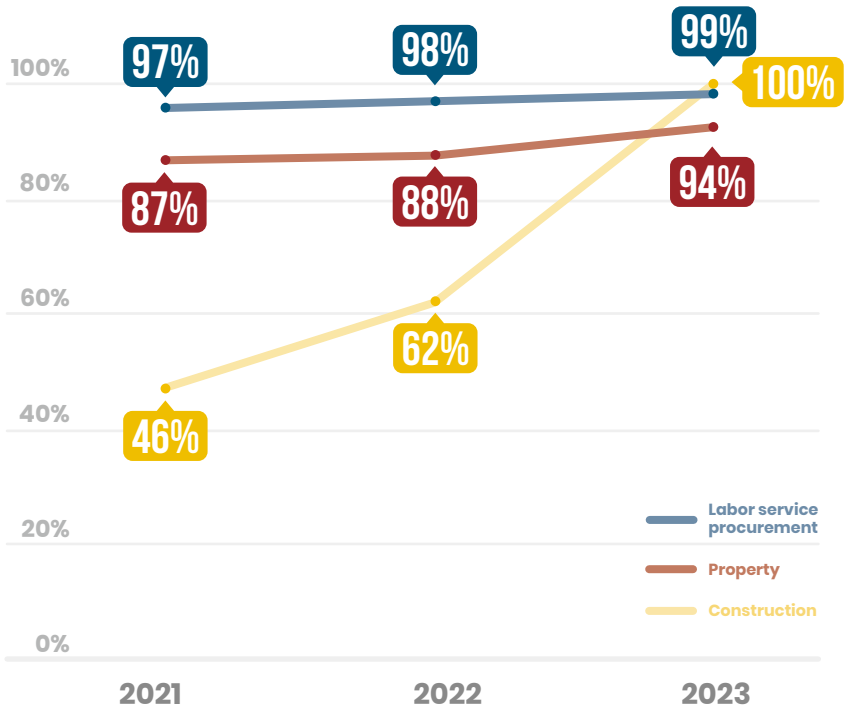
18% | 17.5 billion

Purchase of service

28% | 26.9 billion

CPC believes localized purchase to be an important step toward realizing corporate sustainability, and makes up a part of corporate social responsibilities. For many years, CPC has developed long-term and stable relationships with local suppliers through localized purchases. These efforts have proven effective at reducing supply chain risk and securing the supply of energy and resources. CPC also adopts local purchase as a means to create job opportunities, which in turn supports growth of the domestic economy and increases corporate competitiveness. Localized purchases have increased consistently in amount and percentage over the last 3 years, and now account for 99 % of CPC's total purchases.

Percentage of local purchases in the last 3 years



» Note: Overall percentage of local purchases = sum of local purchases (service, property, and construction outsourcing) / total amount of purchases

Crude oil procurement

Over 90% of energy used in Taiwan is imported. Therefore, it is CPC's responsibility to ensure the security and stability of energy supply by diversifying oil purchase. A crude oil procurement policy has been established based on the Government Procurement Act and internal policies. The United States accounted for the highest percentage (58.75%) of crude oil imports in 2023, while the Middle East and Africa made up the rest.

Establishment of procurement plan

Monthly planning based on production requirements in the next 3 months

Raise procurement request

Send request to qualified crude oil suppliers

Execute administrative procedures

Evaluation of shipping schedule and price negotiation

Procurement decision

The amount of crude oil needed for current month's production should be procured 3 months in advance

Management method

Implement management guidelines to ensure that suppliers:

- Deliver on time without affecting CPC's production and sales plan
- Are able to maintain a consistent supply without compromising Taiwan's energy security or CPC's reputation
- Meet certain standards and are transparent about their backgrounds and track records to ensure that they are able to make delivery on time; only those that pass review may be accepted as qualified crude oil suppliers

Evaluation system

Apart from requesting suppliers to meet certain standards, we investigate their background and track record to ensure that they are able to make delivery on time; only those that pass review may be accepted as qualified crude oil suppliers

New suppliers

Required to submit documents for review to ensure compliance with requirements and standards

Existing suppliers

Subject to regular review at least once a year; suppliers' dealing with other suppliers are also reviewed during this process

Quality management of crude oil

The following methods are taken to evaluate and ensure the quality of new crude oils purchased:

- Assess and test oil quality according to internal procedures to ensure that the crude oil conforms to requirements
- Take samples of the crude oil for quality confirmation and future tracking

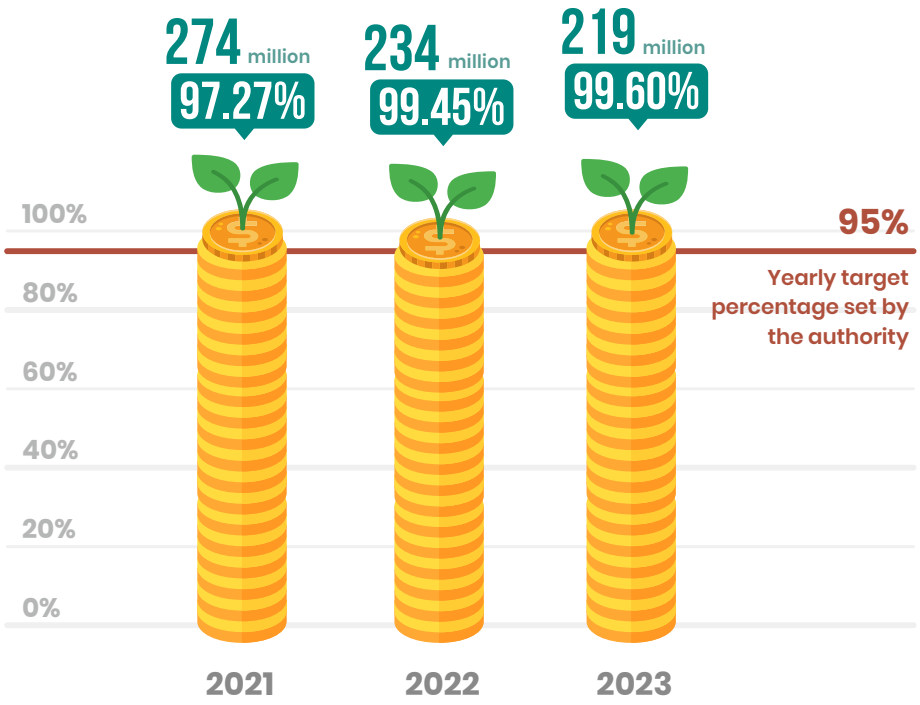
Natura gas procurement

CPC sources LNG from The Middle East, Southeast Asia, Australia, Africa, and USA, and has secured short-, medium-, and long-term purchases with 49 "Master Agreements." These agreements allow LNG to be acquired when needed. CPC purchased LNG from a total of 14 countries (out of a total of 20 exporting nations worldwide) in 2023; by sourcing supply from different parts of the world, CPC hopes to diversify the sources of its natural gas.Two new medium-term natural gas contracts were signed with Indonesia and Oman in 2023 to secure the supply of natural gas for domestic needs.

Green purchase

CPC actively engages in green purchasing and prioritizes the purchase of products that offer environmental protection benefits. Green purchases (class 1 environmental protection products) made by CPC in the last 3 years exceeded 97%, which surpassed the targets imposed by the authority.

Percentage of sustainable procurement



1.2.5 Contractor management

CPC values "safety first" and treats contractors as important work partners. For many years, CPC has implemented a certification and training system specifically for contractors, and all office locations have adopted management practices in accordance with the Occupational Safety and Health Act and relevant laws. It is our hope to exert positive influence in ways that help contractors develop professional capacity and systematic practices.

Contractor Safety and Health Management Policy

- Outlines entry and operational safety rules for contractors, machinery, and vehicles.
- Certification and proof of on-the-job training of occupational safety personnel and heads of various operations are reviewed before commencing work.
- Workers are educated each day before commencing work activities.
- Coordination meetings are convened on a regular basis.

Development of contractor skills

- Contractors are required to undergo a safety and health seminar before commencing work activities.
- Contractors are trained on skills such as: use of 3-in-1 scaffold, equipment installation/disassembly, use of aerial work platform, etc., for improved professional capacity.

Contractor violation control system

- Employees are required to complete a Contractor Evaluation Form once the contractor has completed the work; points deducted for the contractor's violations will have to be uploaded.

Contractor management system

Management system	Practices and performance
Rules on workers' rights	• Contractors shall comply with occupational safety and health laws and organize regular health checkups for employees. • Contractors shall maintain effective labor insurance and health insurance coverage for the workers hired. • Contractors may not hire smuggled labor, illegal immigrants, or foreign (including Mainland Chinese) labor that is not approved by the Ministry of Labor. • Contractors shall comply with laws when dismissing or transferring workers from job positions.
Development of professional skills	**CPC continues to assist contractors with the acquisition of certificates and implementation of relevant training. Training progress for 2023 is explained below:** • 3-in-1 scaffold training for contractors: 34 sessions, 824 enrollments, and 797 passes. • Equipment installation/disassembly training for contractors: 18 sessions, 384 enrollments, and 369 passes. • Aerial work platform training for contractors: 8 sessions, 66 enrollments, and 66 passes.
Occupational safety and health protection	• CPC has outlined safety and health management rules to regulate the entry and safety of contractors' workers, machinery, equipment, and vehicles. • New technologies such as facial comparison, finger vein verification, and license plate recognition have been adopted for enhanced management and protection of contractors' workers. • Contractors are required to designate eligible site supervisors and occupational safety personnel before commencing work activities. • Contractors are required to convene work safety meetings and notify workers of potential hazards before commencing work activities. • Work permits are to be issued on a day-by-day basis, and workers shall be educated each day before commencing work activities. • Coordination meetings are convened on a regular basis to coordinate work site management.
Performance evaluation system	• Establishment of contractor violation control system: CPC conducts statistical analysis on contractors' violations, and evaluates contractors' overall safety and health management capabilities. • Enhanced management and audit: Employees arrequired to complete a Contractor Evaluation Form once the works are finished; contractors that have an average score of less than 6 (out of 10) will be notified of the violations committed on a quarterly basis for enhanced management and supervision.

1.2.6 Management of franchise stations

CPC has rigorous management and counseling systems in place to help franchisees construct and operate petrol stations. Below is a description of the actions involved:

Management system	Practices and performance
Development of business philosophy and basic skills	**Operating goals:** Achieve consistency in terms of "business philosophy," "corporate identity," "products and services," and "operational management." **Hardware and software support for the construction of fuel stations:** CPC offers counsel to franchisees for the construction of fuel stations and the acquisition of operating permits as required by laws. CPC also assists franchise stations in operational management, introducing uses of "oil tank connection system," "automated information management system," "CPC PAY," and major mobile payment tools to provide consumers with diverse payment options and the optimal service experience. New business activities are being explored and introduced to CPC fuel stations for additional revenues and improvements to operating performance. **Trademark licensing:** To ensure that a corporate identity system (CIS) is implemented and used uniformly across franchise stations and direct stations, all uses of CIS are subject to prior approval and licensing. Once the initial approval has been granted, CPC will conduct evaluations physically at each franchise station on a monthly basis to ensure that the CIS remains intact. For franchise stations, CPC has been implementing "CIS for Canopy of New Petrol Stations" progressively since 2022 as a way to create a new corporate image and strengthen the value of the CPC brand for continuity and growth. A total of 154 new stations were completed in 2023.
Improvement of professional knowledge and skills	CPC actively assists franchise stations in the development of fueling SOP, and offers subsidies for environmental testing and training. Issues relating to environmental work safety are addressed in contracts and form part of performance evaluation so that franchisees may duly follow for the safety and health of their employees. **Annual training for franchise stations:** 1. Manager training: About 1,300 trainees a year. 2. 3S system training for franchisees: About 50 participants a year. 3. CPC University – practical training for franchisees: About 90 participants a year. **Foreign observational tours:** About 2,158 participants in 2023.

Quality management and evaluation

Quality of oil products:

1. Oil products are sampled and tested during shipment and delivery for quality assurance.

2. CPC has implemented oil quality sample testing rules for franchise stations: oil samples are taken at franchise stations and tested on a monthly basis to ensure the quality of products sold.

3. CPC made plans to have 23,413 sample tests conducted on oil products by franchisees and distribution centers in 2023, and subsequently increased the number of tests to 38,018 in an attempt to tighten control over the quality of oil products. All sample tests indicated CPC's products having conformed with standards.

- CPC provides franchise stations with full counseling and an integrated 3S system.
- Policies have been implemented for the licensing, utilization, and management of CIS.
- Service performance evaluation policy is stated as part of the contract.
- Top-performing stations are commended.

ESG, sustainability, and co-prosperity

- With regards to the environmental protection aspect that scored relatively low in the supply chain survey, CPC has since introduced regular VOC tests for franchise stations and subsidized their testing expenses and tank cleaning expenses. Meanwhile, CPC also provides counseling to franchise stations for the execution of environmental protection tests.
- CPC promotes smart green energy fuel stations, e-bike charging/battery swapping stations, and the CPC PAY service, and actively assists franchise stations with green energy transformation. By the end of 2023, a total of 470 franchise stations had installed charging/battery swapping stations.
- CPC introduced a public restroom quality improvement program and included it as a key performance evaluation for all fuel stations in an attempt to bring quality into its brand image.
- CPC supports local festivities (by gifting couplets and red packets) and participates in World Toilet Day, Earth Day, and charity activities in which it donates tree seedlings.

Commendation of top-performing franchise stations – 2023

CPC encourages all CPC fuel stations to contribute to brand value by exploring diverse services and improving service quality.

1.2.7 Distributors management

Distributors are key business partners to CPC. Through regular communication and implementation of an enhanced management system, CPC works with distributors toward growing brand value and sales for the benefit of both parties. CPC adheres to its management and operating principles and executed the following measures in an attempt to stay resilient against market challenges:

Management system	Practices and performance
Contract management	• CPC examines and amends contracts with distributors depending on the current state of the market and changes in supply and demand. These contracts outline the rights and obligations of two parties with respect to distribution and brand management, and are signed after negotiation.
Improvement of professional knowledge and skills	• CPC pays unscheduled visits, monitors the market and current state of competition, and makes flexible adjustments to operating strategies. • CPC supports product promotion and after-sale technical service. • Annual training courses are arranged for distributors and employees thereof to help increase professional capacity, management experience, and quality of technical service.
Incentives and performance evaluation system	• CPC implements a reward system that caters to both the obligations and incentives of its distributors; distributors that meet performance requirements are rewarded with price discounts. • A distributor evaluation system has been implemented to identify top-performing distributors and support lagging distributors. • Customer satisfaction surveys are conducted each year to gather feedback/opinions and to examine and improve satisfaction with regard to distributors' sales, logistics, and technical services.
Persistent improvement in feedback	• CPC hosts distributor conferences to convey sales strategies and marketing philosophy, gather business intelligence and customers' feedback, and maintain and strengthen a trusted relationship • Strategies and plans for the next year are adjusted according to the outcome of the satisfaction survey. • Through in-depth interviews with distributors, CPC examines the effectiveness of its current system and adjusts/revises sales targets accordingly and provides individual counseling to unite consensus among distributors toward the common goal.

2023 distributors conference

CPC maintains productive communication with distributors and hosts regular distributors conferences to report business updates, exchange intelligence and opinions, and make plans that are beneficial to both parties.

1.3 | Operating Environment and Results

1.1.3 Financial performance

Short-term

Strengthen business health, implement proper financial goal setting and performance management/evaluation, and examine performance indicators on a yearly basis to ensure conformity with the overall goal

Medium/long-term

Due to changes in the production and sales structure, uncertainties concerning the volatility of international oil and gas prices, and ongoing infrastructure projects, CPC will aim to maintain financial stability and achieve sustainability by reducing energy and carbon, keeping oil and gas prices within a reasonable level, and exploring diverse business opportunities

Direct economic impact and operating performance

CPC has been entrusted with the mission to stabilize oil and gas prices for the growth of the national economy since the day it was founded. In 2023, CPC generated NT$1,103.5 billion in revenues and contributed NT$103.3 billion in taxes to the national treasury. Please visit the following web pages for CPC's consolidated financial statements and related financial information.

Annual report information

Government donations

		2021	2022	2023
Direct Economic Value	Revenue	9,038	12,219	11,035
	Operating Expense	9,331	14,258	11,173
Economic Value-Allocated	Employee Wages and Benefits	237	235	237
	Payment to Investors	20	44	87
	Financial contribution to governments of various countries and regions	1,018	737	1,033
	Community Investment	6.20	5.38	5.02
Others	Pre-tax profit (loss)	(471)	(2,144)	(224)
	Net Income (loss)	(393)	(1,862)	(214)
	Total Assets	8,423	9,750	10,524

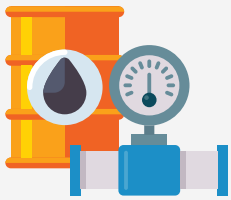
» Note 1: 2021 and 2022 figures were certified, whereas 2023 figures were audited

(NT$100 mn)

2023 business overview

CPC mainly sells oil products, petrochemical products, and natural gas, and has a monopoly in the domestic supply of natural gas. CPC supplies natural gas to power generators, utility service providers, and industrial users; approximately 80% of the natural gas supplied is used for generating electricity.

Main products



Product types
(including multilateral trade)

- Natural gas finished product
- Petrol
- Diesel
- Aviation Turbine Fuel (ATF)
- Fuel oil
- Olefins
- Others

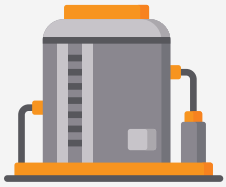
Other products and services

Lifestyle products

- Biotech products
- Festive gifts
- Agricultural Products
- Vehicle fuel

Quality service

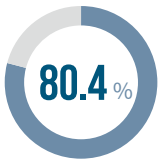
- Quick Service and Tire Centers
- Carwash
- Compound stores and excellent public toilets
- Cup & Go Café
- Charging and Battery Replacement Points



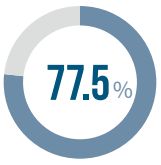
Mid-stream and upstream products

- Refinery and supply of petrochemical feedstock

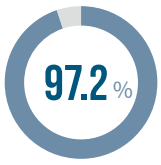
Market share of key oil products – 2023



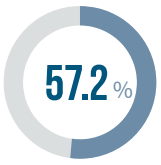
Market share of gasoline



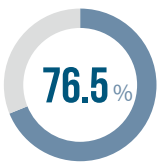
Market share of diesel



Market share of fuel



Market share of aviation fuel



Market share of petrol stations
(direct, franchise, and collaborative)

Production and sales volume of oil and gas products – 2023

Crude Refining Volume	Oil products total sales (including petrochemical products and multilateral trade)	Sale of natural gas products
21.17 million kL	27.2 million kL	26.138 billion cubic meters

Revenues and revenue weight of main products

Product Types (including multilateral trade)	2021	2022	2023
Natural gas finished product	23.49%	30.38%	35.27%
Petrol	23.23%	20.39%	21.13%
Diesel	12.48%	12.64%	11.64%
Aviation Turbine Fuel (ATF)	2.31%	3.25%	3.95%
Fuel oil	6.60%	5.81%	4.39%
Olefins	7.26%	5.12%	4.53%
Others	24.63%	22.42%	19.09%

Indirect Economic Impact

CPC continued increasing commitments to major infrastructure in 2023, using smart, low-carbon, and efficiency enhancement technologies for energy and resource integration while adopting energy creation, utilization, storage, and management systems for enhanced energy control. Meanwhile, the uses of new technologies such as gas liquefaction, pressure energy-based power generation, and diamond water-based aquaculture are being promoted. CPC also supports the government's electric vehicle and green energy plans by constructing integrated power systems with upgraded energy supply. For more complete explanations, please refer to chapter – CPC and Green Contributions.

1.3.2 Tax governance

CPC has long supported the implementation of tax-related policies, and is dedicated to making transparent disclosure of information and promoting sustainable growth

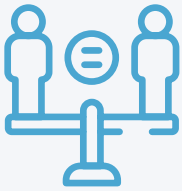
Tax policy

All operating activities of the organization are conducted in accordance with relevant tax laws

The financial statements have made tax disclosures in compliance with relevant rules and requirements, and presented information in a transparent manner

CPC does not make use of tax heaven or make tax plans with the intention to evade tax

CPC does not intentionally transfer the profits it generates to countries with a low tax rate



CPC builds relationship with the tax authority on the basis of mutual trust, transparency and respect

Income tax information

CPC bears the responsibility of stabilizing oil and gas prices for the growth of local industries, and therefore has been making losses in recent years. Considering that calculation of effective interest rate and cash rate was not meaningful in this case, CPC has opted to disclose only its pre-tax profit (loss) and income tax expense (benefit) shown in financial statements for the last 3 years, as shown below.

	Pre-tax profit (loss)	Income tax expense (benefit)
2021	(47,131.72)	(7,847.29)
2022	(214,431.24)	(28,272.22)
2023	(22,411.43)	(1,048.85)

(Unit: NTD millions)

Tax information by country – 2023

CPC's global presence spans across 16 countries in 4 continents, and operates a total of 15 overseas offices. Through coordination between international offices, CPC is able to supply oil products and related services around the world. Tax information for various jurisdictions is explained in the chart below. CPC complies with the tax rules of applicable countries and fulfills its tax obligations. All relevant tax information is duly disclosed for transparency.

Tax jurisdiction	Net sales to non-related parties	Pre-tax profit (loss)	Income tax paid	Income tax expense (benefit)	Tangible assets	Employee count
Taiwan (TW)	1,085,137,632	(22,411,428)	0	(1,048,848)	11,043,003,075	17,142
Australia (AU)	4,898,064	(426,736)	0	0	34,749350	2
United States (US)	130,703	(376,368)	0	0	510,776	8
Ecuador (EC)	3,152,883	876,397	0	123,322	1,458,811	1
Singapore (SG)	13	1,207	242	180	9,686	4
Niger (NE)	1,669,844	(3,598,909)	0	217,388	10,917,194	1
Congo (CG)	0	0	0	0	45,398	0
Chad (TD)	0	1,105,992	0	505,198	4,472,169	0
Indonesia (ID)	0	(7,795)	0	0	209,154	3
Panama (PA)	1,699,445	2,728,801	0	4,86,918	38,531	0
Somaliland (XX)	0	(2,887)	0	0	841,283	0
Mexico (MX)	0	0	0	0	0	0

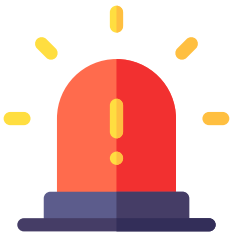
» Note: Countries from AU to MX was based on 2022 data.

(Unit: thousand dollars; person)

1.3.3 Response to significant events

Event 1

Description of financial losses incurred in 2023



Impact

The surge of global natural gas price induced by the Russia–Ukraine war back in 2022 has since fallen and stabilized. However, supply of LNG remained tight due to limited increase in production capacity, and as a result, global natural gas prices over-reacted to market news (such as workers strike in Australia, the Israel–Palestine conflict) and rose to a level that far exceeded historical average in 2023.

Given that the international prices of oil and natural gas stabilized in 2023, CPC has progressively lowered the price of natural gas used for power generation, but halted the hike of natural gas price for non-power generation uses as it continued to support the government's price stability measures. As a result, CPC made operating losses including NT$(24.7) billion from the sale of natural gas products for the year. Combined with interest rate hikes from the U.S. Fed and the Central Bank of Taiwan, the cost of borrowing increased. By the end of 2023, CPC reported interest-bearing liabilities of NT$643.8 billion and incurred record-high NT$8.7 billion in interest expenses.

CPC observes the gas price formula and reviews the cost of natural gas as well as possible adjustments to the domestic natural gas price on a monthly basis. Price adjustment proposals are presented to the authority for review. The Company seeks approval to adjust prices in a way that fully reflects the change in gas cost.

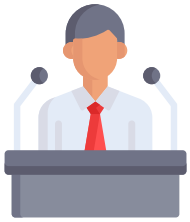
Response and subsequent enhanced measures

Given the operating losses incurred by the Company in 2023 and the relatively high interest rate following the Central Bank's decision to increase rates by a total of 0.75% (3 ticks) between 2022 and 2023, CPC will be adopting the following measures to address funding and funding cost:

1. Enhance risk management, make flexible use of funding tools, secure adequate short-term credit facilities, raise long-term borrowings at an appropriate time, and explore syndicated borrowing to ensure the availability of working capital.
2. Make timely adjustments to long-term, short-term, fixed rate, and floating rate borrowings and make open price comparisons to lower the cost of capital.
3. Aim to source capital from green finance at preferential rates.
4. Maintain strong credit rating to secure borrowing with financial institutions.

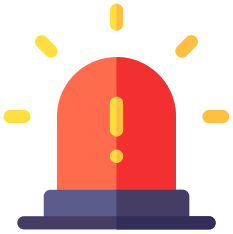
CPC's response strategies for improving operating performance:

CPC continues to purchase LNG with the priority of providing consistent gas supply for domestic needs. The Company adopts the strategy of "securing purchase primarily using medium-term and long-term contracts, and secondarily using short-term or spot contracts." CPC would evaluate domestic natural gas demand 2 to 4 years before expiry of any contract, and conducts rolling reviews on potential purchases over the medium-term and the long-term in order to negotiate for suitable medium-/long-term contracts. Domestic prices of oil and gas are being adjusted to reflect costs, whereas actions are being taken to explore supply sources, increase revenues, and save expenses. CPC will continue monitoring the global natural gas market closely and make necessary adjustments to domestic selling prices for improved financial position and business performance.



Event 2

Accident during airport construction



Impact

In April 2023, while removing fences for the re-piping of CPC's pipelines at 29km of Provincial Highway 15, the contractor encountered a rupture of hydraulic hose in one of the excavators, and the loud noise combined with splash of pressurized fluid startled the workers, resulting in an accidental fall. However, the location of accident was outside CPC's jurisdiction and did not affect any of the Company's facilities or pipelines, and no personnel was assigned to take part, command, or supervise the operation.

Response and subsequent enhanced measures

Equipment

1. Mobile fences must be installed to create a complete seal
2. Placement of equipment on upper and lower elevations must comply with legal requirements

Systems

1. The contractor has been instructed to re-convene coordination meeting to outline word safety responsibilities for the work site
2. The contractor has been instructed to duly analyze the safety of works that involve removal of retainers or fences

Execution

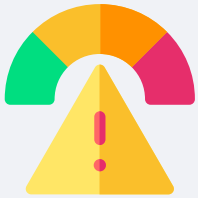
1. Personnel control has been duly enforced in areas where construction machinery and vehicles operate
2. The contractor has been instructed to gather construction-related personnel, remind them of work safety matters, and upload conclusions onto the chat group before commencing work each day

» Note: The above major incident was reported to the board of directors along with the monthly President's Business Report (including environmental protection and occupational safety and health incidents; see sections 2.5.1 and 3.2.2 for details). A total of 13 incidents were reported in 2023.

1.3.4 Risk control

CPC has established its own "Principles for Risk Management and Crisis Handling Practices" and "Overall Risk Measurement Principles" to support the enforcement of risk management policy and the development of a crisis management system. A risk management system, an internal audit system, and a Crisis Response Team have also been put in place to provide appropriate and effective support for internal control practices. Four key risk management policies have been implemented to serve as guiding principles for organizational risk management:

Four major risks Management policy



Reduce business risks for corporate sustainability

Adopt total risk management and enforce operating procedures

Improve risk management capacity and shape a risk management culture

Enhance communication with employees and stakeholders and enforce the risk management policy

Risk management goals

Short-term

Based on the risk management policy, each unit (department and office) carries out its duties and functions with respect to its objectives and plans; implements routine operations; manages, prevents, and monitors risks and makes continual improvement; and establishes an effective emergency response and reporting system.

Medium/long-term

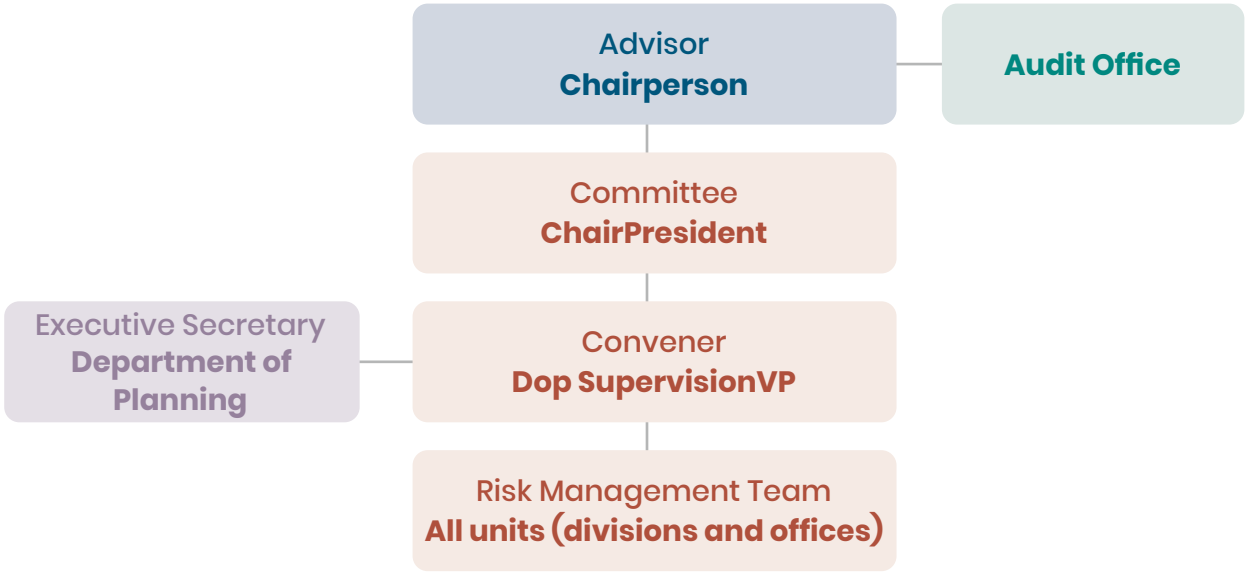
Arrange appropriate training and education on risk management or organizational learning for employees of all levels for them to understand their responsibilities, develop the ability to carry out risk management tasks, enforce the risk management mechanism, and reduce operational risk of the Company.

Equip employees with risk awareness and risk management ability; blend risk management into routine operations and decision operations; and improve corporate crisis handling capacity to achieve our medium- and long-term plans and sustainable management goals and protect the rights and interests of stakeholders.

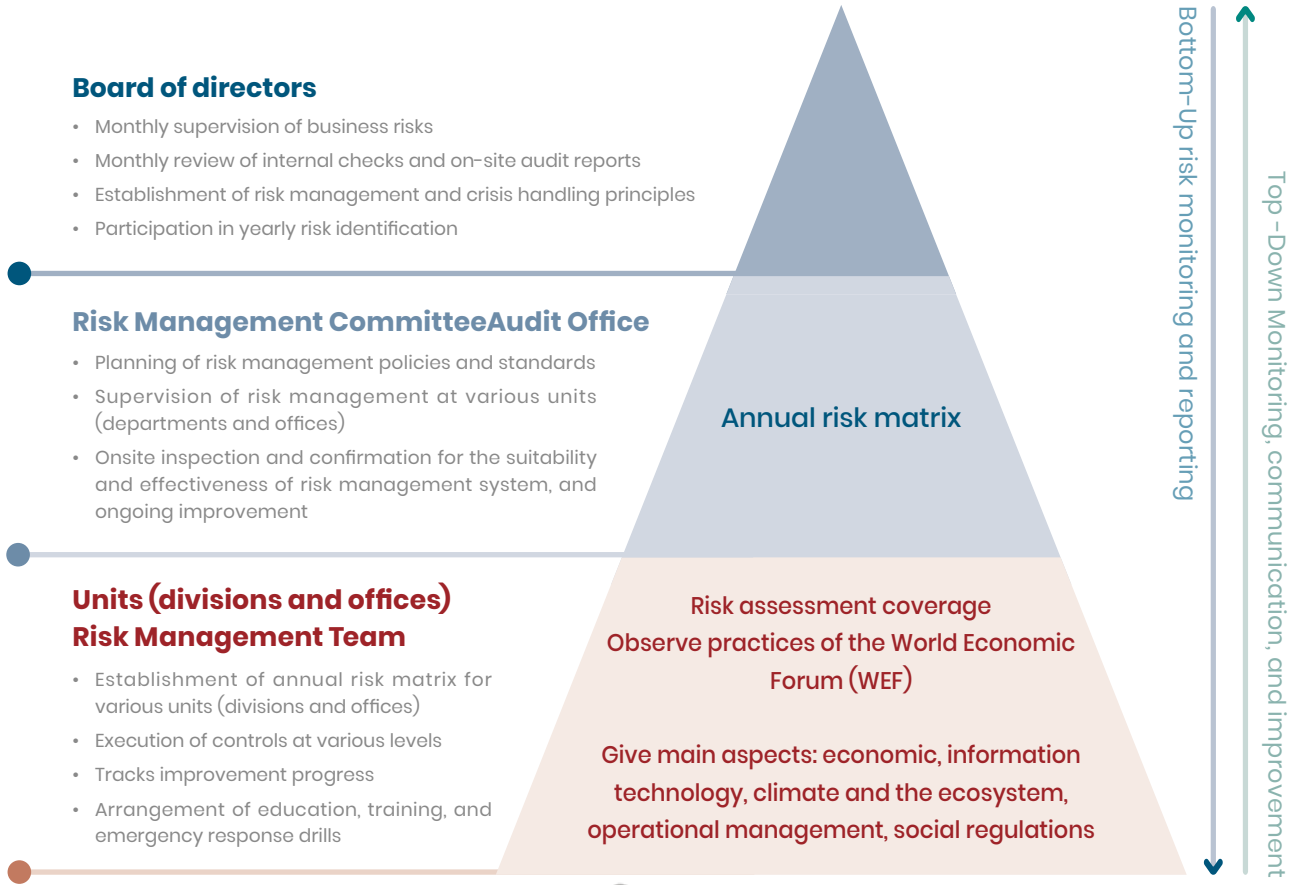
Risk Management Committee and risk management practices

In March 1998, CPC assembled its "Risk Management Committee" and risk teams under various units (divisions and offices) to help enforce the risk management system. The committee and teams continue to execute CPC's risk management system today, using "Risk Matrix" as an assessment tool and enterprise risk management (ERM) system to systematically record, trace, and control improvement of all risks that CPC is susceptible to.

Risk Management Framework



Risk management practice



Outcomes of risk management practice – 2023

CPC has a Risk Management Committee in which the Chairman serves as the Advisor and supervises meetings on behalf of the board of directors. All members of the board take part in the annual risk survey and ranking exercise, and participate in advanced risk management conferences from time to time.

The Risk Management Committee conducts a full-scale examination of risks that the organization may be exposed to, devises appropriate responses for various scenarios, and examines and monitors the outcome of each response. CPC identified a total of 11 risks in 2023, and after adopting improvement measures and continuous monitoring, it found 9 risks where the residual value-at-risk remained unchanged and 2 risks (leak of long-distance oil/gas pipe, equipment failure and unplanned boiler halt) where the residual value-at-risk was reduced.

Risk category

Regulations

Identification of risks and opportunities

Impacts of green energy transformation

Response measures and actions

1. Licensee registration for electric vehicles continues to rise, increasing by as much as 71%. It is necessary to monitor closely how market trends affect sales revenues and devise timely responses.
2. The exploration department is actively involved in the development of green energy, and plans to survey geothermal potential for power generation in Yilan. The site has an estimated power capacity of 4 MW, and CPC will be working with private businesses to develop geothermal power.
3. Adjust the refining process, introduce new technologies, adapt to the supply and demand of oil products, improve the refining process, and adopt measures that add value to products. Take initiative in the research and development of new technologies and products, including transition into high value-adding chemicals and development of green energy sources.
4. Renewal of the 4th naphtha cracker is progressing according to plan, and CPC will cooperate proactively with downstream partners to reduce CO_2 emissions and produce high value-adding petrochemical products. In the meantime, data relating to green energy transformation will be gathered to support formulation of strategies, action plans, and approval procedures.

Financial and operational impacts from suspension of oil/gas price hikes

1. Out of support for the government's policy to stabilize oil prices, the Company will continue reporting losses to the authority. In 2023, CPC adjusted gasoline and diesel prices to the price floor of Asian neighbors for a total of 43 times, activated price stabilization measures for a total of 49 times, and halted price hike for 2 times during the Chinese New Year. Approximately NT$16.919 billion of cost was absorbed through the above.
2. The Company maintains inventory within an appropriate range, and makes adjustments to the RFCC/ROC process and export volume based on oil price changes. CPC also develops new markets for added flexibility and profit.
3. As a response to the IMO2020 policy, the Company will be reducing production of high sulfur fuel oil while at the same time increasing production of low-sulfur fuel oil in line with market changes.
4. CPC actively seeks approval from the government to make reasonable adjustments to the selling prices of oil and gas, and makes proactive requests for cash injection/subsidy to minimize financial risk and ensure stability of its operations.

Risk category

Information technology

Identification of risks and opportunities

Risk of cybersecurity attack

Response measures and actions

1. A Cybersecurity Center has been established and staffed with adequate personnel to oversee cybersecurity matters.
2. CPC took a complete count of privileged account access and tightened security by activating two-factor authentication and passwordless authentication. In addition to maintaining operation of the Security Operation Center (SOC), CPC continues to deploy endpoint detection and response (EDR) at all terminal equipment throughout the Company, and thereby expands the scope of security monitoring.
3. CPC continues to monitor backup performance and enforces daily differential backup as well as weekly and monthly full backups; progressive improvements are being made to increase the efficiency of backup recovery, for which full-scale inspections and audits are also being conducted
4. CPC conducted two on-site audits on the cybersecurity service provider in 2023, and continued to enforce proper management over its service providers.
5. A total of 3 social engineering drills, including planned and ad hoc drills, were conducted in 2023 to reduce the risk of employees succumbing to social engineering attacks.

Risk category

Employee conduct

Identification of risks and opportunities

Employees' corruptive and abnormal conducts

Response measures and actions

1. CPC reviewed a total of 3,567 purchases in 2023; 1,972 of these were on-site reviews and 1,595 of which were correspondence reviews. These reviews help reduce procurement risks and maintain the Company's integrity image.
2. CPC issued 5 early alert reports and conducted 6 special audits on violations, risk events, or personnel. The outcomes were forwarded to the business administration unit for improvement and enhancement of the internal control system.
3. CPC organized 442 anti-corruption awareness events for a total audience size of 13,041; additionally, 175 digital correspondences were issued and were read 90,231 times in total.
4. CPC established a procurement integrity platform and organized a commissioning ceremony in 2022. In 2023, the Company continued hosting meetings and paying visits to district prosecutor's offices as a way to disclose procurement information and maintain communication with the anti-corruption authority for enhanced supervision.
5. CPC raised 6 enhanced anti-corruption reports to address procurement fraud; all reports have been presented to the head of department for review in order to prevent recurrence, and are deemed as an effective anti-corruption risk control measure.

Risk category

Ecosystem

Identification of risks and opportunities

Impacts of climate change

Response measures and actions

1. As per instructions of the Energy Administration, CPC assessed wind risk and flood risk for its oil supply centers, gas supply centers, and refineries based on the latest climograph.
2. Climate change task force meetings were held to facilitate low-carbon transformation and energy/carbon reduction strategies and actions.
3. Water conservation measures were implemented according to the water availability indicator. By adopting a rolling management approach and hosting water response meetings, CPC was able to avert a reduction in production activity.
4. CPC signed agreements to secure sustainability index-linked long-term borrowing of NT$4.4 billion and green loan of NT$1 billion. These arrangements not only signify the organization's resolve to conserve energy, reduce carbon, and develop renewable energy sources, but also offer interest rate discounts.

Risk category

Operational management

Identification of risks and opportunities

Stable supply and safety of oil and gas

Response measures and actions

1. CPC diversifies its oil sources and takes the initiative to explore new types of crude oil. Currently, there are more than 130 types of crude oil from 42 countries that are suitable for refining, which means that the Company is able to diversify risks and ensure stability of oil supply while at the same time avoiding importing crude oil from Russia.
2. CPC uses linear programming to calculate the optimal resource allocation, and convenes production and sales review meetings at the end of each month to plan the production and sale of key oil products in the next three months, after taking into consideration the progress of each unit.
3. Through enhanced negotiation with suppliers, proactive sourcing of gas inventory, and additional investments into LNG storage capacity, CPC aims to develop backup gas pipelines and dual gas supply for some of its key customers.
4. Pipeline management is being tracked regularly, and pipeline inspection is being conducted at a faster rate to ensure the safe delivery of oil and gas.
5. CPC avoids sourcing crude oil and naphtha from Russia in order to prevent impacting domestic production of gasoline, diesel, aviation fuel, and low-sulfur fuel oil, and thereby ensure a consistent supply of fuel to domestic consumers.
6. Supply of oil and gas to domestic demand had been stable throughout 2023.

Risk category

Operational management

Identification of risks and opportunities

Risk of talent and core technology succession gap and outsourcing overall risk

Response measures and actions

1. CPC has recruited 708 employees for senior positions and 2,449 employees for entry-level positions between 2020 and 2022. Additionally, CPC introduced a "10-year Advance Recruitment Plan for Core Technology Workers" back in 2014, and had recruited 581 workers through the plan between 2014 and 2018; these 581 advance headcounts were gradually returned between 2019 and 2023. The Company may launch a similar plan in the future depending on the state of its operations.
2. Rigorous talent selection and 5-year intensive training for new recruits" was implemented to help employees develop professional capacity and obtain certification.
3. All departments were required to report the number of outsourced manpower and control the total size on a quarterly basis; they were also instructed to explain reasons for any increase and propose control measures. CPC will continue examining the nature of outsourced works and explore the feasibility of reducing outsourced manpower.

Crisis/extraordinary occurrence Mishandling

1. Crises and extraordinary occurrences are handled according to "CPC Corporation News Release Procedures."
2. CPC actively gathers public opinions and responds in a "timely" and "proactive" manner by ways of press release or press conference. In 2023, CPC made 7 press releases relating to crisis or extraordinary occurrence.
3. Employees were given enhanced training on quick reporting and the reporting timeframe so that they may respond to emergencies appropriately while avoiding errors in documentation. A total of 359 emergency response drills were organized in 2023.

Construction or operation risk due to failure to implement the OHS SOP (including contractors)

1. More proactive efforts were made to promote awareness toward standard operating procedures (SOP), train employees (including contractors) on related matters, enforce SOPs, and conduct audits.
2. Contractors are required to perform proper hazard identification, risk assessment, and job safety analysis (JSA), and duly implement work safety rating, work site inspection, coordination meeting, and work permit checks.
3. CPC made 33 construction quality inspections in 2023, during which it checked the safety of the construction sites; CPC also followed the work safety rules of its construction guidelines by examining the certification and eligibility of contractors' personnel, reviewing the proposed plans and execution, and tracking defects until improvements are completed.

Identification of risks and opportunities

Leakage of long-distance oil and gas pipelines

Response measures and actions

1. For any pipeline excavation work performed, the Company requires the office-in-charge to measure coordinates of the pipelines and upload data onto the pipeline information system to update map data.
2. Regular pipeline tests: CPC adopts cathodic protection, closed-interval potential, and conducts tests using smart pipeline inspection gauge to ensure protection and safety of the pipelines. Tests are conducted on a yearly basis, and the Company completed IP tests on a total of 34.5 pipelines in 2023. For every pipeline tested, CPC would dig open five areas to verify the test result and repair or replace severely corroded sections before resuming usage. These practices have proven effective to date.
3. CPC has already installed leak detection systems (LDS) on 9 pipelines with another 6 currently under construction. Industrial pipelines that are without LDS will be prioritized for installation in the future.
4. CPC participated in the "2023 Response Center for Public Gas Pipe and Oil Pipe Disasters" drill organized by the Department of State-owned Enterprise Affairs, Ministry of Economic Affairs, which helped familiarize internal departments with the presence of the response center and reporting procedures.
5. CPC organized courses on "Emergency Contact and Pipeline Reporting" and "Introduction to the Cross-reference System" so that shift workers may become familiar, responsive, and knowledgeable about their duties.

Equipment failure and unplanned boiler halt

1. Each plant is responsible for increasing equipment availability by conducting its own checks, equipment maintenance, and replacement. Other maintenance actions such as enhanced anti-corrosion coating, testing of pipelines, and regular full-plant VOC testing are being taken to increase availability of pipelines and equipment.
2. Completed installation of RBI and corrosion controls, and introduced computerized management for repairs and alterations.
3. Unplanned boiler halts were met with in-plant inventory; equipment integrity is being tracked persistently with measures taken to increase utilization rate.
4. Departments susceptible to the risk organized 7 response drills, 7 reporting drills, and 19 training sessions during the year for an audience size of 530.

» Note: CPC also follows "TCFD Recommendations" when identifying potential risks and opportunities of climate change. Please see Chapter 2.1 – Mitigation and adaptation to climate change for details.

Internal audit and external supervision

CPC has assembled an Audit Office under the board of directors to enforce its internal control, inspection, and audit systems. CPC respects the professionalism and independence of its Audit Office and internal auditors, and fully authorizes them to carry out inspection or audit tasks. The following rules have also been implemented to support the internal audit system:

Policy aspect	For any internal control document established by the management and approved by the board of directors, each unit (division and office) is required to examine and evaluate on a regular basis the appropriateness and completeness of such document given the internal/external business environment, the prevailing regulations, organizational adjustments, and business changes, etc., and thereby improve the internal control system.
Execution aspect	1 CPC devises audit plans according to risk assessment and duly conducts on-site audits each year: On-site audits were conducted on a total of 21 units and 21 headquarter departments/offices in 2023. 2 The management department shall conduct internal control self-assessments at least once a year. 3 Annual internal control special audits: CPC conducts special audits on high-risk business activities and recurring defects each year; a total of three special audits were executed in 2023, and any defects or non-conformities discovered are placed on a watchlist and tracked persistently until improvements are made.

Internal audit

- An Audit Office has been created directly under the board of directors; the Audit Office devises internal inspection/audit plans for the next year in accordance with “Regulations Governing Establishment of Internal Control Systems by Public Companies” and CPC’s operating policies, overall risk assessment, etc.
- Communication meetings with Audit Committee members are arranged on an unscheduled basis each year to check and verify flaws within the internal control system and to evaluate the effectiveness and efficiency of current practices.

Externa supervision

- CPC is required to undergo a CPA audit and FSC inspection every year.
- CPC is subject to the supervision of the Department of State-owned Enterprise Affairs, MOEA, and the National Audit Office, Control Yuan.

1.4 | Business Integrity

Short-term | **Medium/long-term**

- Prevent corruption and pursue the highest standards of integrity
- No significant violation of social, environmental, and economic regulatory compliance
- Ensure the appropriateness and effectiveness of the internal control system and build an ethical business that is free of corruption

1.4.1 Compliance

As a state-owned public enterprise, CPC values the integrity of its business practices and is dedicated to enforcing integrity values as part of the corporate culture. For this reason, CPC has established numerous principles and compliance requirements to be followed by employees:

Principles and commitments	• Guidelines for the Adoption of Codes of Ethical Conduct for TWSE/TPEX Listed Companies • CPC Code of Ethical Conduct • Act on Recusal of Public Servants Due to Conflicts of Interest • Integrity and Ethics Principles for Employees of the Ministry of Economic Affairs
Applicable subjects	• Members of the board • Management • General employees
Practices	• CPC carries out all business activities while observing integrity principles, and considers compliance with government regulations to be the minimum requirement. • CPC strictly prohibits corruption, bribery, embezzlement, and any attempt to exploit the vested authority for own gains or gains of others, so as to preserve a corporate culture of sustainability and integrity. • CPC pays constant attention to international conventions and policies that are potentially impactful to the Company given the prevailing trends, so that rules and procedures can be optimized to ensure that employees conduct business activities in accordance with laws.

Corporate governance and business integrity principles

Corporate governance framework	Performance and results
Implications of government ownership	CPC follows regulations and instructions of the authority, and commits efforts and issues authorizations as deemed necessary to fulfill special responsibilities and obligations under social and public policies.
The government in every role	① CPC is 100%-owned by the government; all members of the board of directors are appointed by the shareholder (Ministry of Economic Affairs), who exercises voting rights during shareholder meetings (which the board of directors will perform on the shareholders' behalf). ② CPC submits business status reports and performance review reports to the Department of State-owned Enterprise Affairs, Ministry of Economic Affairs, every month and reports performance and related review reports to the Executive Yuan every year.
The role of state-owned enterprise in market regulation and fair competition	① CPC is dedicated to making petrol accessible to everyone (even if it means sustaining fuel stations in remote locations and mountainous areas at a loss). ② CPC sells oil products in direct competition with Formosa Plastics. It sets selling prices for oil products each week using a government-approved floating oil price adjustment system, whereas privately owned fuel stations are free to set the retail price of oil, thereby keeping the market in productive competition. ③ CPC carries the mission of supporting government policies, and plays a critical role in stabilizing domestic oil prices.
Fair treatment for shareholders and other investors	① CPC has outlined and disclosed its own self-regulatory rules that prohibit insiders from exploiting non-public information for profit. ② CPC has clear rules in place to govern asset acquisition and disposal, external party lending, and external party endorsement/guarantee.
Responsible business and relationship with stakeholders	① CPC actively enforces its corporate social responsibility policy. ② CPC complies with laws and makes proper disclosures with respect to the fairness of employment, welfare and retirement system, work environment, and safety. CPC has appropriate rules and systems in place to handle illegal and negligent conducts of employees. ③ CPC reviews environment-related penalties for improvement on a monthly basis, and devises feasible responses to minimize the negative impacts of pollution on the environment. ④ CPC has a 1912 toll-free customer service hotline in place that is attended by dedicated personnel 24 hours a day (and fully recorded), all days a year. Cases that the customer service center cannot resolve on the spot and issues submitted through the opinion mailbox over the CPC website or using other sources (such as chairperson's mailbox, referral, personal visit, and supervisor's mailbox) are created on file on the back-end system and forwarded to the accountable unit for response.

Information transparency and disclosure

① CPC prepares a "sustainability report" on a regular basis; all relevant information and progress have been disclosed on the CSR section of CPC's website.

② CPC discloses financial statements within the required timeline. The shareholders' meeting annual report discloses information on directors', supervisors', and senior managers' duties, career experience, concurrent positions, performance, and compensation as well as the amounts and nature of fees paid to financial statement auditors.

③ CPC discloses rules and important information concerning corporate governance, such as directors' and supervisors' meetings, over the Corporate Governance section of its website.

Responsibilities of board of directors in a state-owned enterprise

① CPC has 15 members on the board, including 5 female directors. The directors offer a broad diversity of expertise including chemical engineering, law, finance, and business administration. Starting from the 34th board of directors, CPC introduced three independent directors and assembled an Audit Committee to replace supervisors. All three independent directors possess leadership and crisis management skills and offer insight into international markets.

② Directors and supervisors participated in the training courses organized by Taiwan Corporate Governance Association, Taiwan Institute for Sustainable Energy, and Financial Supervisory Commission in 2023.

③ Directors and supervisors averaged a 92.8% attendance rate in board meetings in 3.2023.

Accounting system

① CPC evaluates the independence and suitability of its CPAs on a yearly basis. Appointment of CPAs is subject to the approval of the board of directors.

② The CPAs regularly communicate with supervisors on how they plan to audit the financial statements and the audit opinions they have. CPAs are also invited to the board of directors meetings and supervisor meetings, where they reply to queries from independent directors and supervisors concerning the outcome of financial statement audits.

» Note: Starting from the 34th Board of Directors on November 15, 2023, CPC Corporation, Taiwan will establish an Audit Committee. The authority and duties originally exercised by the supervisors will be carried out by the Audit Committee.

Integrity violations

CPC committed no violation against social or economic law in 2023, and did not engage in any action that would be considered anti-competition or anti-trust.

1.4.2 Anti-corruption

Our anti-corruption work begins with corruption prevention. By establishing business reform and anti-corruption measures and the "Principles of Co-Supervision of Government Ethics Personnel" and the "Platform for Reporting Procurement Anomalies to Government Ethics Department," we hope to prevent procurement corruption and ensure open, impartial, and transparent competition. In addition to promoting anti-corruption laws during training and department meetings, CPC also conveys the implications with contractors that it has a relationship with, and instructs contractors to uphold ethics in business dealings. All CPC units are required to evaluate corruption risks and identify responsibilities, rectify defects, make payments, and raise improvement suggestions for any area of weakness that is likely to lead to a "corruption incident" depending on severity. For incidents that involve crime, employees will be required to gather intelligence, report to investigators, and assist the anti-corruption authority fully in investigations.

Business location corruption risk assessment – 2023

No. of business locations assessed for corruption risk: 14

Total No. of business locations: 14

= 100%

Percentage of business locations assessed for corruption risk

» Note: "Business location" refers to any single location that the organization uses for production, storage, product/service distribution, or administrative purpose (e.g. office).

Corruption risk events – 2023

Severity of corruption risk	Type
Low corruption risk	Embezzlement, forgery of documents, fraud, inappropriate language/behavior, breach of discipline, violation of corporate vehicle rules
Moderate corruption risk	Incorrect filing for small purchase, incorrect filing for small claim, abnormality in procurement procedures, abnormality in fuel station bookkeeping
High corruption risk	Improper inspection of the services procured to the extent that constitutes suspicion for a surrender of interests to the vendor, suspected breach of duty that involves a large bribe, suspected divulgence of secrets

1.4.3 Whistleblowing system and whistleblower protection

CPC has several channels in place (e.g. e-mail, physical mail, and phone line) to facilitate whistleblowing of corruption-related issues, and uses a combination of digital and printed media to make them known to the public. A total of 18 judicial investigations were concluded in 2023; 3 of which led to indictment, 10 of which led to deferred prosecution, and 5 of which led to court judgment. Four of the above cases involved corruption, whereas the remainder were general criminal cases (embezzlement, bid-rigging etc.) Violations are compiled into case studies and conveyed to employees on a regular basis.

Furthermore, CPC has an "Internal Control System for Whistleblower Protection" and "Whistleblower Protection Guidelines" in place to maintain the secrecy of a whistleblower's identity, and all misconduct reports are handled in a confidential manner throughout the entire process. Any reply to the whistleblower is sent using a separate mail, and any discussion with the whistleblower will take place at an appropriate venue with proper confidentiality measures taken for whistleblower protection. Extra attention is being directed to protecting identity and job security for whistleblowers.

Procedures for accepting misconduct report

Department of Ethics receives misconduct report

Initiate administrative investigation to gather facts and evidence and establish the violating act

Findings of the investigation are circulated to the head of the unit and to the ethics department of the competent authority

Impose administrative liability or refer to the justice system

Outcomes of misconduct report – 2023

Cause for report	Case count	Handling measures	Percentage handled
Violation against Government Procurement Act	24	Clarification; referred to investigation	100%
*Surrender of interests to vendors	5	Clarification; administrative resolution/discipline	100%
*Corruption/bribery	4	Referred to investigation	100%
*Fraudulent claim of business expense/overtime pay	3	Clarification; administrative resolution/discipline; referred to investigation	100%
*Fraud	10	Clarification; administrative resolution/discipline; referred to investigation	100%
Embezzlement of common property, theft	3	Clarification; administrative resolution/discipline; referred to investigation	100%
Employee conflict, internal management (attendance, internal control etc.)	25	Administrative resolution, administrative discipline	100%

» Note: *Indicates that the case is under judicial investigation

CPC devises yearly plans to promote anti-corruption awareness among employees. There were 442 physical sessions of anti-corruption promotion conducted in 2023 for a total enrollment of 13,041. Additionally, 175 issues of digital material (e.g. anti-corruption monthly, e-mail, and internal correspondence) were made to a total audience count of 90,231. CPC has ethics teams under various departments that are responsible for organizing anti-corruption campaigns for the public. A total of 256 social engagement activities were organized in 2022 to an audience size of 26,179. CPC assigned a total of 84 internal and external instructors and committed more than NT$1.2 million in expenses to anti-corruption awareness campaigns and social engagement activities in 2023.

Internal corruption reporting channels

CPC Department of Ethics:
Taipei Xinyi P.O. Box 128-36
TEL: (02)8725-8478
Fax: (02)8789-9007
e-mail: report@cpc.com.tw

External corruption reporting channels

MOEA Procurement Audit UnitAddress:
No. 15, Fuzhou Street, Taipei City.
TEL: (02) 2397-1592
Fax: (02) 2397-1593
Email: ps.unit@moea.gov.tw

Central Government Procurement Audit Unit, Public Construction Committee, Executive Yuan Address:
9F, No. 3, Songren Road, Xinyi District, Taipei City
TEL: (02) 8789-7548
Fax: (02) 8789-7554

Agency Against Corruption, Ministry of Justice
No. 166, Boai Road, Zhongzheng District, Taipei City.
Mailbox: Academic Historica P.O. Box 153, Taiwan 10099
Free reporting line: 0800-286-586
Fax: (02) 2381-1234
Email: gechief-p@mail.moj.gov.tw

Offices and contact numbers of the Investigation Bureau, Ministry of Justice
(website: https://www.mjib.gov.tw/EditPage/?PageID=68997624-Bae6dd97c5ca1f87)

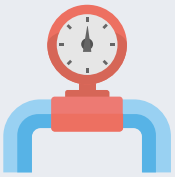
Number and percentage of department employees subjected to anti-corruption training (by department)

Department	Employee role	2023 Employee count	2023 No. of employees trained	2023 Percentage
Headquarters	Supervisors	162	162	100%
	Non-supervisors	832	832	100%
Oil Product Marketing Division	Supervisors	258	258	100%
	Non-supervisors	4,899	4,899	100%
Exploration & Production Research Institute	Supervisors	13	13	100%
	Non-supervisors	126	126	100%
Chemical Solvent Business	Supervisors	11	11	100%
	Non-supervisors	236	236	100%
Project & Construction Division	Supervisors	24	24	100%
	Non-supervisors	220	220	100%
LPG Business Division	Supervisors	14	14	100%
	Non-supervisors	116	116	100%
Refining Business Division	Supervisors	224	224	100%
	Non-supervisors	4,182	4,182	100%
Natural Gas Business Division	Supervisors	113	113	100%
	Non-supervisors	1,822	1,822	100%
LNG Project Division	Supervisors	17	17	100%
	Non-supervisors	163	163	100%
Lubricants Business Division	Supervisors	20	20	100%
	Non-supervisors	130	130	100%
Exploration and Production Business Division	Supervisors	111	111	100%
	Non-supervisors	1,250	1,250	100%
Petrochemical Business Division	Supervisors	92	92	100%
	Non-supervisors	1,379	1,379	100%
Refining & Manufacturing Research Institute	Supervisors	17	17	100%
	Non-supervisors	370	370	100%

1.4.4 Transparent product pricing

CPC has been implementing a price stabilization system for oil and natural gas in line with the government's price stabilization policies. The system operates under the supervision of the authority, and is intended to charge users for the amount of energy used in a fair manner so that oil and gas prices can be set logically. CPC encountered no lawsuit in 2023 that involved manipulation of oil/gas prices. All key products such as oil (including 92 unleaded, 95 unleaded, 98 unleaded, ethanol, super diesel), LPG, and natural gas have passed quality requirements imposed by laws, and no loss on exchange was reported.

Product price adjustment system

 **Gasoline and diesel**	**Compliance principles**	CPC proposes price adjustments each week according to the "Floating Price Adjustment Principles for Domestic Gasoline and Diesel" approved by the authority, and announces and implements the adjustment after seeking approval through administrative procedures.
	Basis of price adjustment	CPC makes weekly adjustments in line with international oil prices and the average exchange rate; the extent of adjustment is determined solely by the outcome calculated using an oil price formula. Once calculated, the retail prices of 92 Unleaded and Super Diesel are used to determine the pre-tax wholesale prices. These prices are then compared to the current week's lowest pre-tax price observed in competing countries in Asia (namely Japan, Korea, Hong Kong and Singapore), which serves as the upper limit for price adjustments. Weekly price adjustments are disclosed on CPC's website and through a press release.
	CPC's care for consumers	To lessen the financial burden and impact that price changes have on the general public, the MOEA announced a new set of oil price stabilization measures in 2018 that set three price thresholds for 95 Unleaded at NT$30, NT$32.5 and NT$35 per liter. If the retail price rises above the threshold, the government will absorb 25%, 50% and 75% of the excess, respectively. The same absorption rate applies to 92 Unleaded, 98 Unleaded, and diesel on a per-liter basis.
 **Natural gas**	**Compliance principles**	The MOEA first approved the "natural gas price adjustment system" back in 2008, and given the current state of the natural gas industry, CPC issued a correspondence titled "Review and amendments to CPC's natural gas price and supply cost" to the MOEA in September 2020, and was granted approval to implement the amended supply cost from 2021 onwards.
	Basis of price adjustment	According to the natural gas price adjustment system, CPC is required to conduct monthly reviews of changes in LNG cost, and make adjustments within the scope of delegated authority (up to 3% in a single month and up to 6% over 3 consecutive months) and notify the central authority afterwards. Adjustments above this cap must be reported to and approved by MOEA before taking effect. Explanations of gas price adjustment and the basis of calculation (including cost of natural gas and pricing formula) are announced and updated on CPC's website.
	CPC's care for consumers	Given that the international prices of oil and natural gas stabilized in 2023, CPC has progressively lowered the price of natural gas used for power generation, but made no adjustment to the price of natural gas for domestic and industrial users between June 2021 and May 2024 out of support for the government's price stabilization measures. Any shortfalls that were not met given the current selling price were temporarily absorbed by CPC.

 LPG	**Compliance principles**	CPC adjusts prices according to the "LPG price adjustment system" on a monthly basis, and announces and implements the adjustment after seeking approval through administrative procedures.
	Basis of price adjustment	CPC calculates the amount of adjustment each month using the price adjustment system. These adjustments, once approved by the Chairman, are updated to the LPG rate sheet on CPC's website along with relevant details (including wholesale price, international CP average price, exchange rate, and prices in Asian neighbors) for public inquiry. In the downstream, canister filling factories and local gas suppliers are free to set end sales prices according to the market rate, which CPC does not interfere with.
	CPC's care for consumers	CPC follows the government's instructions to halt or defer price hikes whenever there are drastic changes to the supply, demand, or competitive landscape of the domestic or foreign market, and thereby preventing any excessive change in price levels that may otherwise impact people's lives. Losses arising from adjustments that fall short of the real changes will be reversed when international prices fall. CPC offers fuel subsidy to low-income households and has been implementing the "Tanked Gas Subsidy for the Underprivileged" program since 2014, in which it paid subsidies whenever the wholesale price of household tanked gas exceeds NT$30 per kg.

1.5 | Service and Innovation

CPC upholds "supreme quality, excellent service and best contribution" as its business philosophy. Every employee is committed to fulfilling that mission by learning customers' needs, protecting customers' interests, executing product safety management, and delivering products and services of the best quality. Ongoing attention is being directed to rectifying and reducing fails, preventing problems, and improving product quality and safety for the protection of customers' interests, which in turn raises customers' satisfaction and shapes a favorable corporate image.

1.5.1 No. 1 in Quality

Product/service quality requirements and tests

CPC places great emphasis on the safety of its products to customers and complies with relevant laws. Product quality is strictly managed using ISO 9001, among other standards. CPC discloses safety data sheet (SDS) for all key products and services on its website, which includes details on ingredients and potential hazards, along with product prices and price adjustment history for inquiry by all stakeholders. To ensure user safety, each individual package is printed with important notes that users should take note of. CPC's Refining & Manufacturing Research Institute, refinery, oil/gas supply center, transportation department, and fuel stations all conduct regular testing and monitoring of oil quality, natural gas quality, and thermal value, and produce LPG test reports at various points of shipment. Product and service performance are reviewed from time to time. Furthermore, the Energy Administration regularly executes the "Petroleum Product Quality Inspection and Management" program, whereas the Bureau of Standards, Metrology and Inspection also conducts random inspections on petroleum products that are imported and sold domestically (as well as refineries) according to "Petroleum Product Testing Procedures" to determine whether product quality conforms with national standards. There was no report of non-compliance with consumer health and safety involving our product or service in 2023.

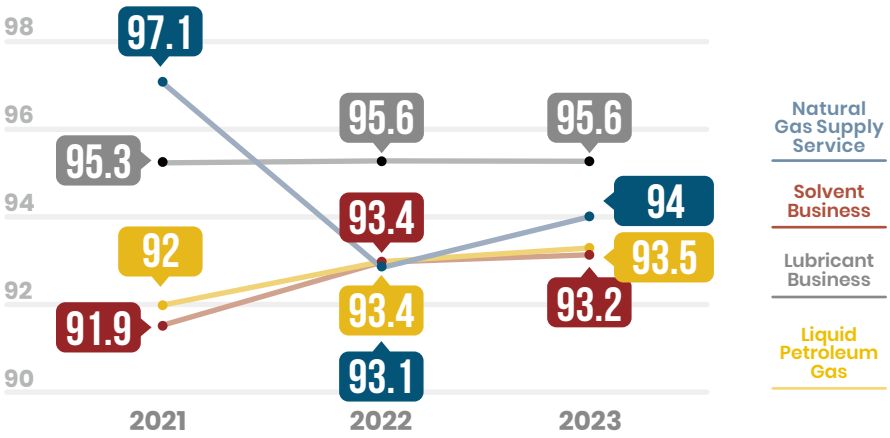
Furthermore, the quality of oil products and level of customer satisfaction has been included as part of the performance evaluation criteria in accordance with Notes on Implementation of Annual Performance Evaluation for State-Owned Enterprises of the Ministry of Economic Affairs and CPC's Notes on Implementation of Responsibility Center-based Annual Performance Evaluation. Interim and annual targets have been set across internal departments and are being examined for target attainment.

1.5.2 No. 1 in service

Customer Satisfaction

Driven by the mission to serve the public, CPC learns customers' needs and opinions and strives to deliver the best services using complaint resolution rates, satisfaction surveys, and performance evaluations as internal measurements. CPC also implements the "Satisfaction Survey SOP" and analyzes survey outcomes on a yearly basis so that changes can be made to improve service quality. Outcomes of the survey are as follows:

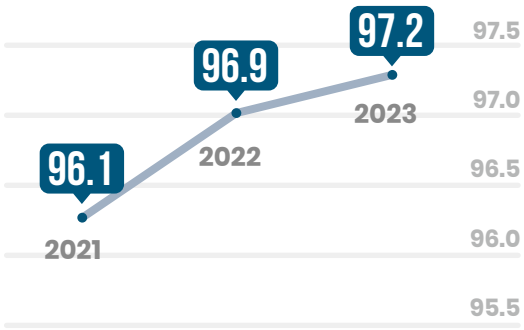
① Outcomes of product and service satisfaction survey



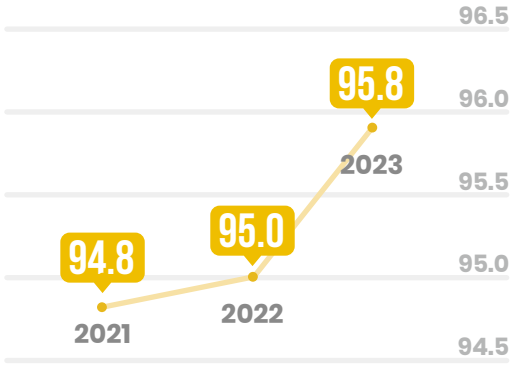
CPC gathers customers' opinions and satisfaction data through a combination of physical visits and call visits, and takes the initiative to help customers resolve problems for increased satisfaction. Overall satisfaction score this year has increased slightly from the previous year. CPC will continue striving for improvements and bring better services and products to customers.

② Petrol station customer satisfaction survey

The State-owned Enterprise Commission, MOEA, commissions external service providers to conduct customer satisfaction surveys on a yearly basis. Using a combination of face-to-face interview, phone interview, and questionnaires specifically designed for different customers, the surveys focus on investigating the underlying reasons for customers' satisfaction and dissatisfaction. Owing to CPC's persistence at improving the service quality of each petrol station employee, the organization has been favorably recognized for service attitude, presentability, and automated voice of the customer service center, which resulted in a progressive increase in overall satisfaction score year after year. CPC will continue making improvements to sustain a high quality of service.



③ Customer experience management (CEM)



CPC focuses on consumer experience and opinions and makes continual improvements to the quality of petrol station services. Through the introduction of "customer experience management" (CEM) and ongoing survey of customer satisfaction, we learn areas of petrol station service that require improvement. CEM is being introduced to at least 125 petrol stations a year. By having the customer service center make telephone surveys to VIPs who had spent money at a petrol station in the previous 24 hours, CPC gathers responses with respect to the overall service quality, service attitude, fueling technique, and the fueling environment so that improvements can be made to specific areas to increase service quality. With these efforts, we hope to raise satisfaction scores year after year.

Customer grievance system

In an attempt to improve service quality to the next level, CPC promoters not only pay monthly visits to direct customers, but also gather and analyze interview reports and devise feasible strategies for customers' suggestions and needs. By interacting with customers and helping them solve problems, CPC is able to raise satisfaction over time. Furthermore, CPC has set up a dedicated customer service center and handles each complaint or suggestion separately on file. Average turnaround time for each case is 3–6 working days; cases that remain unresolved for more than 6 working days whether due to the additional time required or failure to establish contact with the customer are deemed overdue.

visits to customers
3,362 times

helped resolve
255 issues

CPC customer service center received
99.6% satisfaction

Customer complaints and suggestions received in 2023

94.9%
resolved on the spot

CPC received a total of 181,634 cases, including 174,666 customer inquiries, 3,873 customer suggestions, 2,077 customer comments, 83 customer complaints, and 935 cases of other nature (including affirmation and recognition). The Customer Service Center and Customer Service Office resolved 94.9% of these cases on the spot, and 5.1% (9,123 cases) were referred to related responsible units for further assistance and reply. All customer service cases were handled in an appropriate manner.

0.01%
overdue rate

There were 28 overdue cases, representing an overdue rate of 0.01%. All 83 consumer disputes (customer complaints) were resolved in time.

1912 – a toll-free hotline accessible 24 hours a day

Opinion mailbox on CPC website

Resolution workflow for customer service cases

Customer Service Case Processing SOP

Staff of Customer Service Center	Manager of Customer Service Center	Stationed Head of Customer Service Office	Customer Service Office	Dispatch of the handling department
Create file	Preliminary review	Secondary review	Approval	Assignment
			Confirmation	
			Closure	

Security and privacy

CPC cybersecurity promotion team and policy

In 2021, CPC established the Cybersecurity Center, a unit responsible for cybersecurity management and protection, to continually enforce cybersecurity protection in the IT environment and industrial automation. CPC has allocated cybersecurity personnel in accordance with "Regulations on Classification of Cyber Security Responsibility Levels" and the "Cybersecurity Maintenance Plan" (Level A unit: 4 officers, Level B unit: 2 officers, Level C unit: 1 officer), and all Level A and Level B units have been certified for ISO 27001 standards by an independent 3rd party. Personnel of all three tiers above are responsible for the enforcement, management, and execution of cybersecurity tasks within their respective units to ensure conformity with legal and cybersecurity protection requirements. CPC committed approximately NT$210 million (tax-exclusive) to cybersecurity in 2023, which accounted for 22.44% of the total IT budget and was slightly higher than the 20.5% in 2022.

2.1 million (tax-exclusive)
cybersecurity budget in 2023

2022	2023
20.5% →	22.4%

accounted of the total IT budget

Review criteria and performance goals of the CPC cybersecurity promotion team – 2023

2023

Quantitative performance – 2023

① No cybersecurity incident involving alteration of data on CPC's website had occurred – Target attained

② All reports, responses, and recoveries were completed according to rules – Target attained

③ Social engineering drills conducted in 2023 averaged a click rate of 0.37% and an attachment view rate of 0.25%; both of which were within the MOEA's cap (click rate: 8%, attachment view rate: 5%) and within CPC's stringent caps (click rate: 4%, attachment view rate: 2.5%).

Qualitative performance – 2023

CPC continues to strengthen cybersecurity protection, enhance cybersecurity training for employees, and engage external service providers for cybersecurity management in accordance with laws and CPC's Cybersecurity Maintenance Plan; outcomes of the above efforts have met the prescribed goals.

2024

Quantitative targets for 2024

① Conduct at least two internal audits of the headquarters and six on-site audits of external units (including contractors) each year.

② Report, respond to, and recover from cybersecurity incidents within the prescribed timeline.

③ To keep the click rate below 4% and attachment view rate below 2.5% in social engineering drills.

Qualitative targets for 2024

① Ensure the confidentiality, integrity, and usability of CPC's business-related information.

② Meet requirements for the given level of cybersecurity responsibility, and reduce cybersecurity risks.

③ Organize cybersecurity training to raise employees' capacity and awareness.

④ Enhance cybersecurity protection in line with policies and laws.

⑤ Adopt proper outsourcing of information/communication system or service, and meet cybersecurity requirements.

CPC's cybersecurity and personal data response measures

Short-term

- To review internal procedures for gathering, processing, and use of personal data at least once a year
- To organize at least two awareness campaigns and training seminars a year
- To complete the current year's audit before the end of December, and produce a personal data protection audit report

Medium/long-term

- To continually implement proper protection and management of personal data

CPC has established "Customer Service Center Information Security and Personal Information Management SOP," and regularly reviews existing operational mechanisms, enhances the security maintenance of information systems, and strengthens the training and education of employees in "privacy protection" and "information security" to ensure the retention and protection of the customer's personal information. Any ill-intended damage or corruption of personal data and any leak of personal data, whether due to negligence, hacker's attack, or illegal intrusion, will be met with emergency response measures and quickly escalated to CPC's personal data protection promotion team. Leaks of personal data that constitute security incident will be handled according to the cybersecurity rules mentioned above. CPC has been convening at least one personal data protection meeting each year following the enactment of the Personal Data Protection Act. These meetings are hosted by the vice president of legal affairs and attended by personal data protection officers of various departments, and are intended to discuss relevant issues and exchange opinions relating to personal data protection. CPC has allocated budgets to acquiring software and hardware for the protection and management of personal data, including the creation of a personal data input management system. All personal data held in possession is checked yearly to ensure proper handling.

Training and response drills

CPC organizes two training sessions on Personal Data Protection Act each year to strengthen employees' awareness of legal requirements and practical interpretations, and thereby prevent violation due to ignorance. In light of the increasing frequency of personal data leaks covered in news, CPC has taken additional measures to prevent data leaks, convey the underlying principles of the Personal Data Protection Act, raise compliance awareness toward the Act, and organize response drills for potential incidents involving personal data leaks so that appropriate actions can be taken in a timely manner to prevent or minimize damage to the data owner or the Company. In 2023, CPC hosted two classroom courses titled "Personal Data Protection Act – A News Perspective" and Personal Data Incident Response Drill"; video recordings of the classroom courses have been uploaded onto "CPC University" and made accessible online for all employees.

There was no report of customer privacy violation or leakage or theft of personal information in 2023. For more details on CPC's information protection policy, please visit the CPC website.

Complaints concerning breach of customer privacy or loss of customer data

0

Substantiated complaints from outside parties

0

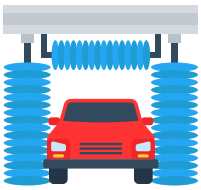
Substantiated complaints from the authority

1.5.3 No. 1 in contribution

CPC is the pioneer of vertical integrations in Taiwan's petrochemical industry. Not only does the organization expand its product and service range from a value chain perspective, but it also takes the initiative to explore innovations and introduce smart technologies like 5G and AIoT growing in popularity around the world. By incorporating digital technologies into existing research capacity, CPC facilitates the transformation of the entire petrochemical industry and exerts a positive influence in ways that minimize negative impacts.

Business diversification

In light of changes in the domestic and international markets, CPC is actively exploring alternative business activities in addition to the sale of oil, gas, and petrochemical products that bring value to its petrol stations and contribute to its stature as the one-stop shopping channel. CPC's petrol stations currently provide a wide range of services, from express vehicle maintenance, car wash, parking, convenience store, advertising, payment collection, Etag top-up, and coffee to the sale of agricultural products. Member rewards along with exclusive privileges are being offered to attract consumers and increase returning purchases and loyalty. As a response to the rise in environmental protection awareness, CPC began installing e-bike charging and battery swapping facilities in petrol stations that consumers can use to charge up their vehicles, and continues to support the transformation of its petrol stations into supply stations of diverse energy sources and services.



CPC-Life Wash

- CPC provides fast, convenient, and professional car cleaning services (including detailed manual wash and mechanical wash with manual finish) as well as add-on oil removal film and vehicle coating.
- In 2023, carwash service was being provided across 270 direct petrol stations.

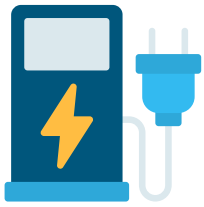
CPC-Life Express

- The petrol stations provide express car maintenance, tire changing, and fitness diagnosis for consumers' vehicles. All service technicians on-site have passed the national exam on Level B technician for automotive mechanics, and are competent at maintaining vehicles for the safety of their drivers.
- 62 direct stations are equipped with express car maintenance and tire service facilities.

CPC-Life Shop

- Petrol stations have been designed to serve as convenient spaces to shop for supplies and goods. Aside from general necessities, petrol stations also sell festive hampers, agricultural products,
- proprietary brand products, and Cup & Go.

  All 144 direct stations nationwide have either a compound store or a convenience store, whereas CUP & GO, CPC's proprietary coffee brand, is available at 187 stations (including franchise stations).



Charging&Swapping

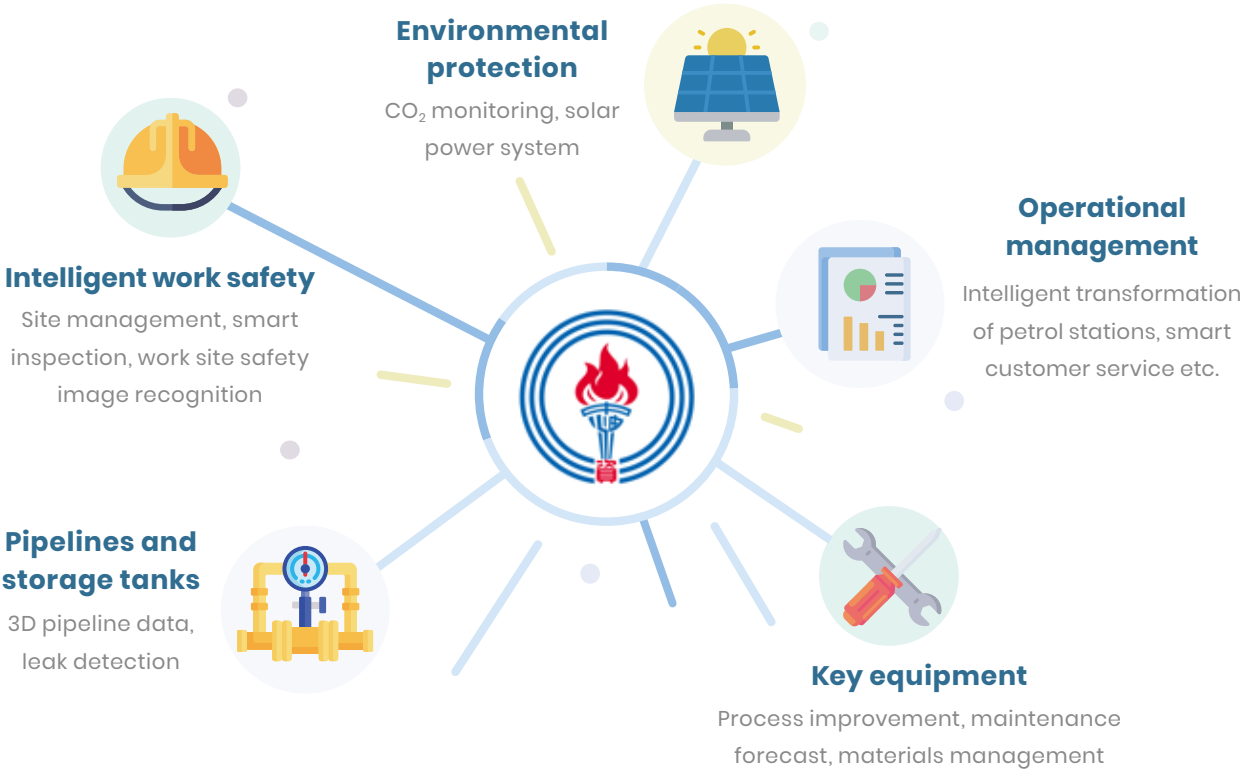
- Stations now offer charging and battery swapping services for electric cars and bikes to accommodate the growth of electric vehicles and rising
- environmental protection awareness.

  CPC has a total of 100 e-bike charging stations, 900 e-bike battery swapping stations, 10 normal EV chargers, 48 quick charges in 10 stations, and 4 smart green energy fuel stations nationwide.

Technology innovation

Through implementation of the 5G AIoT project, talent training, and creation of smart traffic network, CPC actively adopts digital technologies and supports technological integration. By engaging the industry, the government, the academia, and research institutions in close collaboration, CPC takes progressive steps toward its vision for sustainability transformation and smart production, and prepares the organization for the arrival of the digital era.

5G and AIoT application



CPC has always played an essential role in Taiwan's industrial development. Being the nation's energy steward, CPC is tasked with the responsibility of ensuring stable supply of energy, and is required to explore innovation and collaborative opportunities amidst intensive global competition and technology shift as a way to cope with future challenges.

Out of support for the nation's development policies, CPC works closely with the Export Processing Zone Administration, MOEA, to make more efficient use of resources and land across all plant sites and to support the expansion of Kaohsiung Software Technology Park with the hope of enabling growth of the high-tech industry. By "bringing in industry leaders," CPC aims to increase the growth of new business ventures within the park. In a collaboration with AI startups at Kaohsiung 5G AIoT Innovation Park, the Department of State-owned Enterprise Affairs, and Kaohsiung City Government, CPC organized several intelligent work safety conferences and exhibitions where new businesses are able to showcase their progress. Meanwhile, CPC continues to strengthen cooperation with other industry participants such as Formosa Chemicals & Fibre Corporation and Formosa Petrochemical Corporation on exploring the potential of applying AI technology in corrosion monitoring and predicting the useful life of bearing.

With regards to academics and research, CPC actively incorporates advanced technologies into business operations and collaborates with several universities on exploring ways to improve the production process or predict equipment useful life. These collaborations not only incite technological innovation within CPC, but also contribute to the growth of industries and progression of society.

CPC's push for 5G AIoT technology focuses on five main aspects: intelligent work safety, key equipment, pipelines and storage tanks, environmental protection, and operational management.

Applications	Actions
 **Intelligent work safety**	CPC adopts the use of advanced tools such as bionic dog and work site safety image recognition system to improve the efficiency and safety of the operating environment; these tools will greatly increase employees' ability to identify and prevent potential hazards within the workplace.
 **Key equipment**	CPC prioritizes both real-time monitoring and improving the efficiency of its equipment. By adopting systems such as advanced process control (APC) and maintenance forecast, CPC is able to monitor equipment in real time and predict or even prevent malfunction using AI, and thereby ensure the stability and efficiency of the production process.
 **Pipelines and storage tanks**	CPC incorporates 3D pipeline data and leak detection technology to improve monitoring and management over the pipeline system, which in turn ensures safe storage and transportation of oil as well as petrochemical products
 **Environmental protection**	CPC places great emphasis in this respect and makes use of several new technologies and environmental protection measures to ensure sustainability of the organization's growth. Investments in CO_2 monitoring and solar power system not only help CPC lessen and monitor carbon emission, but also promote use of renewable energy sources. These projects are a strong demonstration of CPC's commitment and efforts toward environmental responsibilities.
 **Operational management**	Through intelligent management and use of AI-assisted customer service, CPC not only improves service efficiency and customers' satisfaction but also facilitates digital transformation of business processes.

Training of 5G and AIoT talents

I. Planning and commencement of AI courses

Having realized how AI technologies will affect the growth of every business, CPC has devised a 6-stage "AI capacity training plan" as depicted in the figure below:

		Estimated time	Subject	Course objective	Training plan
General knowledge course A	**Entry level A1**	2 hours	General employees	Strengthen general knowledge	Existing online course (TibaMe)
	Fundamental A2	8-10 sessions/ hours	General employees	Learn new knowledge	Keynote speech by experts via CPC LIVE
	Managerial A3	3 hours	Mid-level/senior managers	• General knowledge • Specific topics	Included in the managerial curriculum
Specialist course B	**Application B1**	More than 6 months of brainstorming and discussion	Field experts	• Field knowledge • Contribution of topics • Commitment/planning/ execution	Technical courses are delivered by external lecturers or outside professionals
	Technical B2	6 months to more than 1 year of training	AI engineers	• Assessment of needs • Algorithm and modeling • Generate outcome	
	Technical B3	3 to more than 6 months of training	Data engineers	• Analysis of needs • Data analysis • Visualization	

The training applies to everyone from general staff, mid-level/senior managers, field experts, AI engineering to data engineers, and the course content covers an introduction, general knowledge, management skills, and technical details. It is the Company's intent to not only equip all employees with the basic AI concept, but also give managers an understanding of how the technology can be applied and provide engineers with access to AI-related data and technologies.

The Company uses a variety of channels including classroom sessions, e-learning, live stream, and broadcast to deliver the above courses to employees. Details are as described below:

1. The Training Institute organizes classroom courses relating to AI and invites employees of different departments to enroll for the training. Industry experts and scholars are invited to either share knowledge or host practical workshops during these sessions.
2. Classroom sessions of the AI course are video-recorded and converted into e-learning format before uploading onto CPC University where employees may access at any time.
3. CPC leases AI-related e-learning courses and makes them accessible online to employees at any time. Course contents are also broadcast via CPC-Live to encourage participation from employees.
4. Through collaboration with industry participants, government agencies, and the academia, CPC broadcasts 5G AIoT courses and conferences as a way to bring additional learning resources and opportunities to employees and to facilitate knowledge exchange between different fields of expertise.

II. Acquisition of AI platform access and purchase of Azure license for real practice

In addition to the training courses, CPC also purchases Azure licenses and access to PrimeHub so that employees may apply what they learn in practice. Azure AI helps developers make use of existing APIs and models to quickly develop applications, whereas PrimeHub provides an environment for AI development, machine learning, and AI training; together, they allow technicians to develop applications that are practically useful.

III. Testing of knowledge and behavioral changes for improved learning efficiency

Through actual project involvement, employees not only have a better understanding of the processes involved in the development of AI applications, but are also able to develop basic skills through real practice. By April 2024, nearly 80 proof-of-concept projects had been created, and while employees were able to gain AI development experience and technical capacity through this exercise, their creations may someday be developed into real AI applications to help the Company resolve real problems.

Through execution of the above plans, CPC hopes to ride the wave of AI and leverage the power of digital technologies to become an efficient business.

Tank truck digital IoT fleet management system

Oil transportation is an important factor in the stability of the oil supply. For the safety of tank trucks during transportation and to facilitate proper monitoring of oil quality and quantity and effective prevention of work safety accidents, CPC has developed a proprietary, patented (utility model) digital IoT fleet management system that combines in-vehicle GPS (global positioning system) with 4G communication, big data, AI, and IoT technologies. This management system allows real-time monitoring and status reporting of tank trucks, and has proven effective at optimizing the oil loading, unloading, and transportation workflow. Combined with the Tyre Pressure Monitoring System (TPMS), CPC has successfully introduced AI into oil transportation and safety management.

The digital IoT fleet management system has been equipped with active alerts and fool-proof functions to address errors such as “residual oil in tank truck,” “incorrect station and incorrect oil type,” and “tank overfill.” 2023 In 2023, the system initiated 17,996 real-time alerts for residual oil in tank truck, 2,149 active alerts for incorrect unloading of oil, and 21,015 unloading halts for tank oil. Overall, the system has proven effective at preventing non-complete emptying of tank truck, station error, oil type error, and tank overfill.

17,996

real-time alerts for residual oil in tank truck

2,149

active alerts for incorrect unloading of oil

21,015

unloading halts for tank oil

Electronic Internet of Things (IoT) Management System

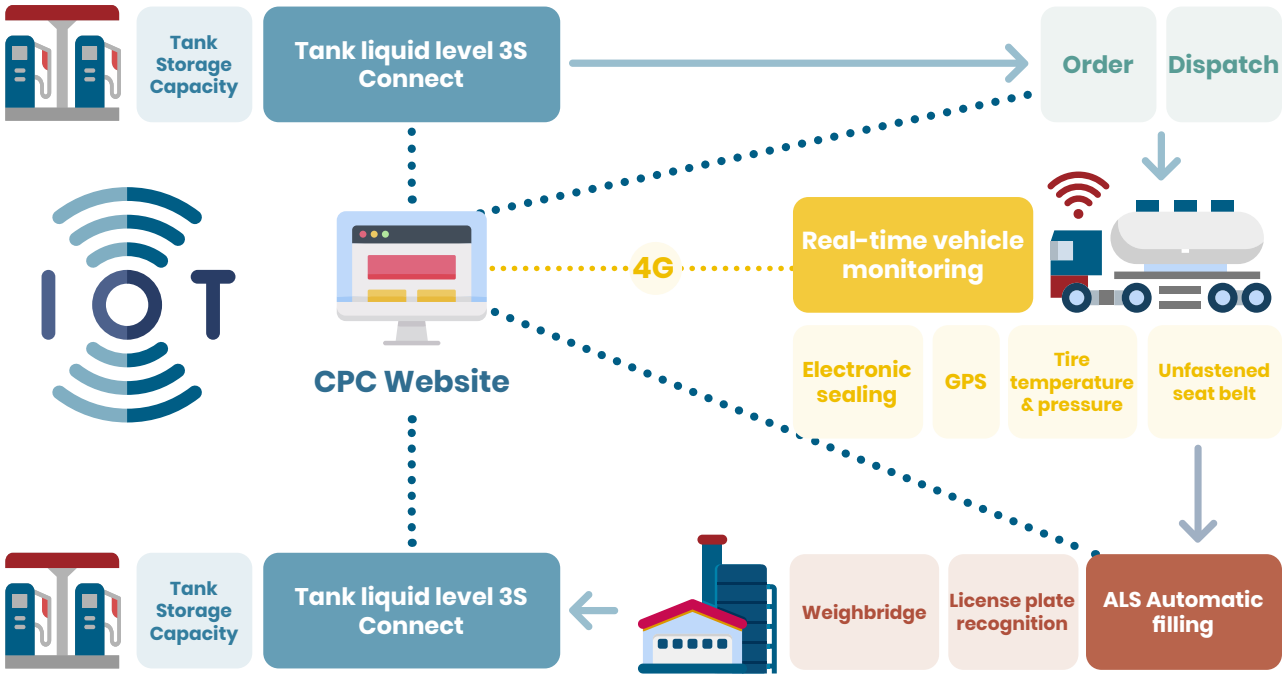
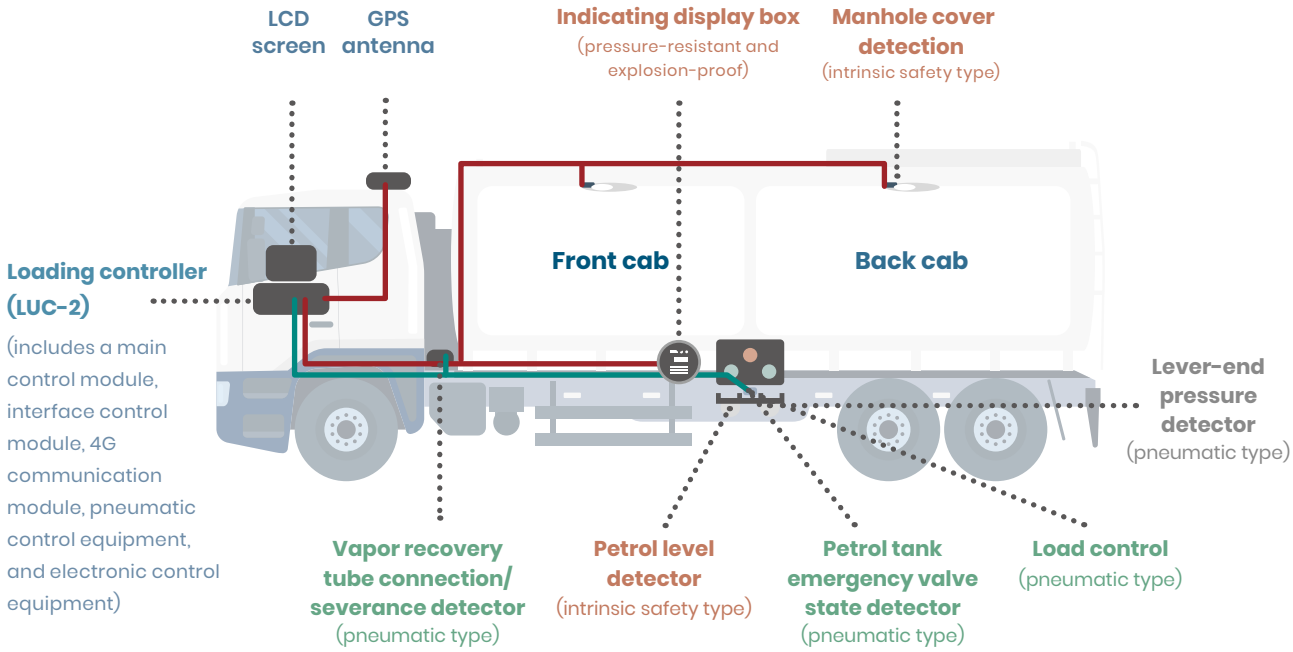


Diagram of Smart Fuel Tanker Truck



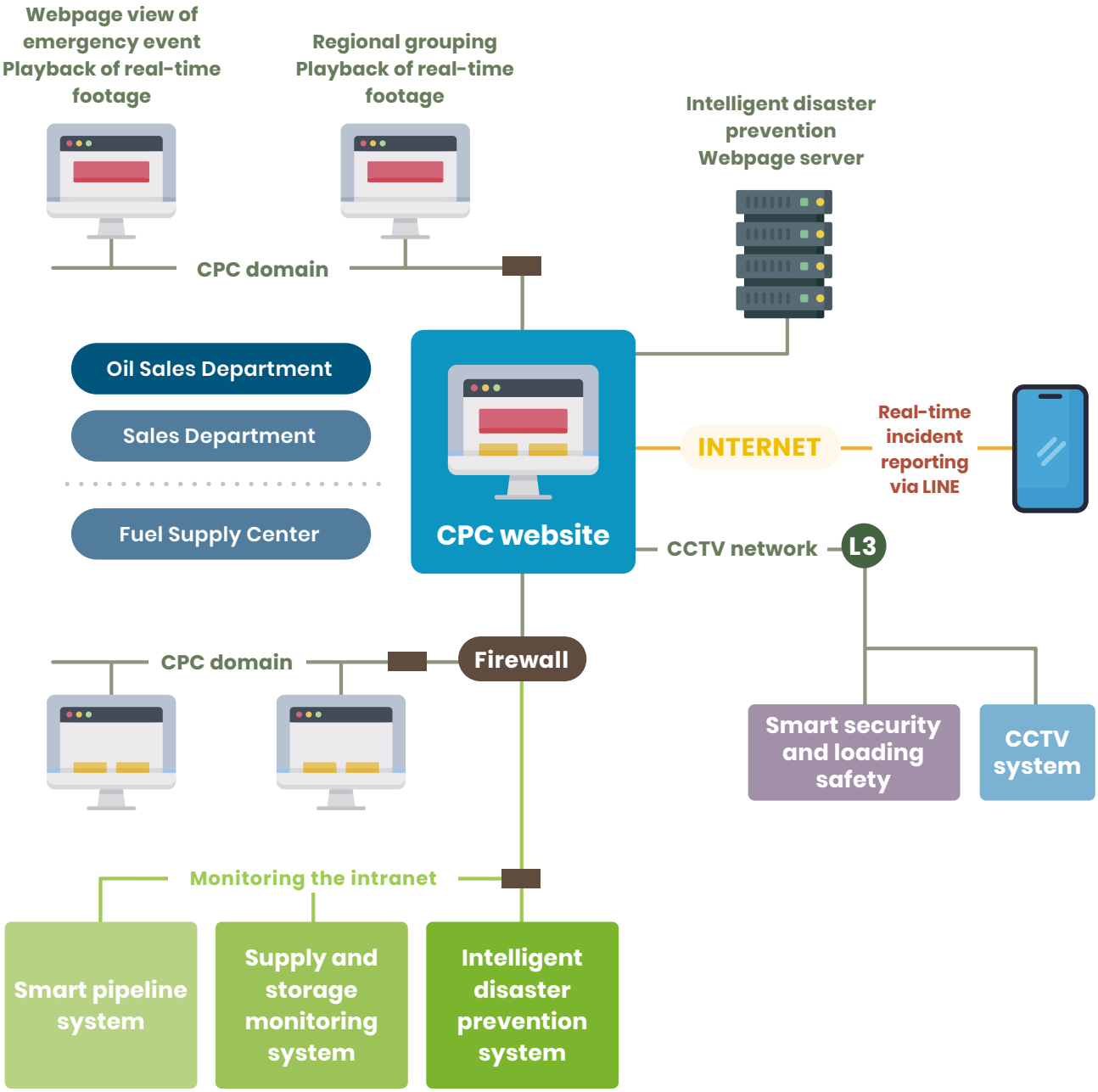
Cables and piping (explosion-proof or intrinsic safety type)

Pneumatic tube

Pneumatic type: Pneumatic tubing extends to the cabin for monitoring and control

Fire safety VR simulator and intelligent disaster prevention system

CPC has created an intelligent disaster prevention system to address oil leaks and fire at fuel distribution centers. By integrating this system with the monitoring and alert systems of various sites, employees are able to report incident and provide instant footage using smartphone for more timely response. This practice also provides more complete intelligence that can be analyzed afterwards to enhance disaster prevention efforts. Furthermore, CPC upgraded its fire safety VR simulator by adding new functions such as floating fire alert line, voice prompt, and images of new petrol stations so that the VR simulator may create a more realistic fire scene to prepare personnel for fume and other potential hazards when extinguishing fire. The simulator also trains employees to become familiar with the use of fire extinguishers.

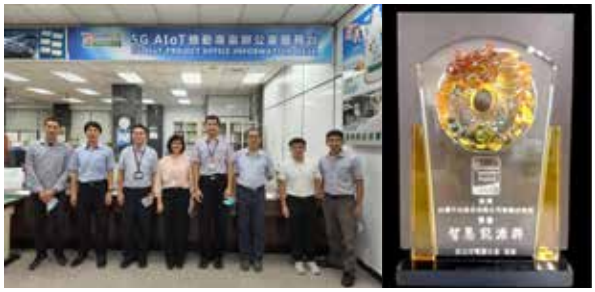


1.5.4 External recognition and collaboration

Innovative R&D awards

CPC has a 5G AIoT Project Office that not only matches innovative startups to various business divisions, but also conducts its own R&D for new technologies. The "AI-assisted Image Recognition for Detecting Current Spectrum in Compressors and Motors," for example, received the 20th National Brand Yushan Award, the 11th Smart City Innovative Application Award, and the Outstanding Thesis Award. The 5G AIoT Project Office will be promoting and applying this technology at Linyuan Petrochemical Complex, Taoyuan Refinery Plant, and other facilities designated as critical infrastructures (CI) to improve the stability of plant operations and therefore ensure consistent supply of natural gas, oil, and petrochemical materials in Taiwan.

Additionally, the 5G AIoT Project Office invites lecturers from several national universities to host seminars relating to "AI-assisted process improvement" with the goal to apply AI in chemical engineering. By incorporating AI in the analysis of production data and PI, the Company hopes to ensure safety, improve productivity, and reduce energy usage in production activities.



Signing of collaborative agreements

- CPC has signed MOUs with five companies and continues to explore climate change responses as well as low-carbon business opportunities. These MOU partners include Taiwan Cement, Academia Sinica, ExxonMobil, SLB, and Baseload Power Taiwan.
- CPC signed a memorandum of understanding for "Safety Testing Technology Alliance for Storage and Transportation of Compressed Hydrogen" with Metal Industries Research & Development Centre, and will be cooperating with the counterparty on the development of safety testing/validation technologies for hydrogen power storage and transportation, as well as consultation, research, development, and training of related issues.
- CPC signed memorandum of understanding with two companies to develop geothermal power in Taiwan as a progression toward the nation's 2050 net zero goal. These two companies are Ormat-International Inc. and GreenFire Energy.
- Driven by the resolve for net zero transformation, CPC signed a "net zero emission MOU" with National Taiwan University, under which the two parties will engage in an industry–academia collaboration to promote net zero emission and accomplish CPC's goals toward "High-value Petrochemical, Low-Carbon Emission and Lean-Renewable Energy".
- CPC signed a "net zero emission MOU" with National Chung Hsing University to engage in a number of industry–academia collaborations. Through the MOU, CPC hopes to implement nature-based climate change solutions that not only work in tandem with the organization's "High-value Petrochemical, Low-Carbon Emission and Lean-Renewable Energy" transformation goals, but are also representative of its resolve toward achieving "net positive biodiversity."
- CPC signed a collaborative agreement for "Smart Monitoring of External Industrial Pipelines at Kaohsiung New Petrochemical Zone" with the Industrial Technology Research Institute; this collaboration will focus on the pipeline monitoring technologies adopted at Dalin and Linyuan plants.

Engagement with external organizations

CPC participates in several local and foreign industrial organizations and associations. This engagement provides CPC with the opportunity to expand multilateral relations, exchange business experience and market information, connect with international industry trends, and ultimately maintain corporate competitiveness and global visibility. Below is a list of key external organizations that CPC is a part of and its existing role.

Industrial exchange and development

Name of external organization	Form of participation	Key discussions, decisions, or performance – 2023
International Group of Liquefied Natural Gas Importers	• Member • Executive Committee Member	Being a member of the organization facilitates the exchange of information and experience with LNG importers, and thereby improves the safety, reliability, and efficiency of LNG imports.
Chinese International Economic Cooperation Association (CIECA)	• Member • Member representatives: 5	CPC participates in member conferences to keep up to date on the global economy and overseas investment opportunities.
Chinese Association for Energy Economics	• Member • Directorship and supervisorship	By taking part in board meetings and annual conferences, CPC keeps up to date on the development of energy economy and energy management technologies, which enables the exchange of knowledge with the energy industry.
Chinese Petroleum Institute	• Member • Directorship	In an attempt to capitalize on energy transformation opportunities, CPC engages the institute to help determine winners for the "CPC Outstanding Thesis Award" and publish papers in the institute's quarterly periodicals for greater influence.
Petrochemical Industry Association of Taiwan	• Member	CPC takes part in the association in accordance with the Industrial Group Act. The purpose of the association is to connect peers within the domestic petrochemical industry and explore improvements that promote common interest and support economic development.
Sino-Arabian Cultural & Economic Association	• Member • Chairperson, directorship, and supervisorship	CPC takes an active part in this association to promote cultural exchange, economic collaboration, and relationships with Arabic nations, which will prove favorable for oil sourcing in the future.
ROC-USA Business Council	• Member	CPC takes an active part in this association to promote investment, trade, and technological collaboration between Taiwan and the USA, and thereby strengthen international trade relations.
Taiwan Museum Association, ROC	• Member	CPC makes use of the association's resources (such as website and periodicals) to distribute information relating to CPC's museum, and consults the association for professional advice. The association also bridges interaction between museums for mutual benefit.
Taiwan Biotechnology Industry Alliance	• Member • Member representatives: 3	Being a member of the alliance not only strengthens collaboration between domestic biotechnology companies and academic research institutions, but also facilitates the integration of resources between the industry, the academia, and researchers in a manner that is favorable to the sale and promotion of CPC's biotech products.

	Name of external organization	Form of participation	Key discussions, decisions, or performance – 2023
Corporate image and academic exchange	**The General Association of Chinese Culture**	• Member	CPC takes active part in this association to promote Taiwan's diverse cultures and to demonstrate Taiwan's soft power.
	Taipei Measuring Instrument Association	• Member	CPC maintains its membership in this association to exchange and receive news about the government's economic policies and amendments to metrics-related laws and regulations.
Professional capacity enhancement	**Chinese Society of Structural Engineers**	• Member • Member representatives: 1	CPC takes part in various engineering conferences organized by the society; the society also publishes quarterly periodicals that CPC employees may read to improve their professional capacity.
	The Corrosion Engineering Association of the Republic of China	• Member • Member representatives: 1	CPC co-hosts academic events on anti-corrosion engineering, and engages the association from time to time to study and resolve issues concerning anti-corrosion engineering.
Sustainable management	**The Institute of Internal Auditors-Chinese Taipei**	• Member • Member representatives: 4	CPC's internal auditors participate in courses organized by the institute as a way to expand their knowledge of internal audit theories and practices, which helps enhance CPC's internal audit system.
	Taiwan Institute for Sustainable Energy	• Member	CPC takes part in Taiwan Corporate Sustainability Awards (TCSA) and submits corporate sustainability reports as a means to exchange information. CPC also engages proactively in the training and certification of corporate sustainability managers.
	Center for Corporate Sustainability	• Member • Directorship	CPC supports the organization in various initiatives to promote sustainable practice and achieve United Nations Sustainable Development Goals (SDGs).
	World Business Council For Sustainable Development Taiwan	• Premium member • Member representatives: 12	CPC assisted in the review of Traditional Chinese translation for GRI 306: Waste (2020).
	Taiwan Association of Soil and Groundwater Environmental Protection	• Member • Member representatives: 1	CPC participates in soil and groundwater remediation conferences organized by the association, and engages the association in technology exchange from time to time.
	Groundwater Remediation Technology Alliance	• Member	The association allows CPC to build up technological capacity and engage upstream, midstream, and downstream partners for the creation of Soil and Groundwater Remediation Technology Alliance.

	Name of external organization	Form of participation	Key discussions, decisions, or performance – 2023
Industrial safety management	**Industrial Safety and Health Association of the ROC**	• Member	CPC takes part in various occupational safety and health training activities organized by the association in an attempt to improve employees' awareness and know-how relating to work safety. The association also helps train occupational safety and health officers.
	Taiwan Safety Council	• Chairperson, directorship, and supervisorship	CPC participates in various academic forums organized by the council, and engages in the discussion and study of issues concerning safety culture, safety leadership, production safety management, etc., as well as possible improvements.
	Taiwan Responsible Care Association (TRCA)	• Member • Member representatives: 3	CPC participates in yearly plenary meetings and conferences organized by the association to keep up to date on international work safety, health, environmental protection, and sustainability trends in the petrochemical industry.
	Taiwan Occupational Hygiene Association	• Member • Member representatives: 1	CPC participates in international academic conferences organized by the association, during which it exchanges knowledge with experts and scholars in the field of occupational health.
Technology innovation	**Chinese Society of Structural Engineers**	• Membe • Member representatives: 1	CPC takes part in various engineering conferences organized by the society; the society also publishes quarterly periodicals that CPC employees may read to improve their professional capacity.
	The Corrosion Engineering Association of the Republic of China	• Member • Member representatives: 1	CPC co-hosts academic events on anti-corrosion engineering, and engages the association from time to time to study and resolve issues concerning anti-corrosion engineering.

CPC & GREEN CONTRIBUTIONS

02

CHAPTER

Chapter summary

As a major player in the energy industry, CPC has been tasked with the responsibility to reduce carbon emissions and therefore contributes proactively to the nation's net zero goal. Out of concern for the risks and opportunities of climate change, CPC assembled a Climate Change Response Task Force to consolidate international management systems such as TCFD and TNFD into a low-carbon, green energy transformation strategy with "High-value Petrochemical, Low-Carbon Emission and Lean-Renewable Energy" being the three main emphases. CPC currently leads the industry in the development of prospective technologies such as lithium-titanium oxide materials for energy storage, and actively searches for opportunities to lower carbon emissions and promote circular economy through construction of smart green energy fuel stations, establishment of advance catalyst center, full-scale product carbon survey, and introduction of internal carbon pricing. Meanwhile, CPC responds proactively to the claims of environmental protection organizations by taking actions to protect the algal reef ecosystem near where the Third LNG Terminal is being built. CPC even founded the first ecosystem preservation fund in Taiwan to support preservation efforts, taking progressive steps to cater for sustainability of the ecosystem and economic growth at the same time.

Reader Priorities

Shareholder (MOEA) • Customers • Employees • Public representatives NPOs/NGOs • Partners • the Media Communities • the Government

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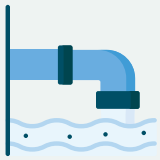
2.2 LOW-CARBON TRANSFORMATION AND CIRCULAR ECONOMY P.142
2.3 ENERGY/RESOURCE MANAGEMENT AND TRANSFORMATION P.162
2.4 BIODIVERSITY P.169
2.5 POLLUTION PREVENTION P.180

Corresponding SDGs

CPC's performance highlights

water recycled

98%



reduction in effluent intensity

8%

CDP climate change questionnaire

B rating

The nation's first

Ecosystem preservation fund

conducted scenario analyses for physical and transition risks to facilitate early response to potential climate risks

Developed complete TCFD framework

risk management framework

Adopted a TNFD compliant biodiversity

Environmental protection expenses

Unit: NTD thousands

Environmental protection expenses	2021	2022	2023
Company operating cost [1]	2,744,830	3,065,659	3,158,306
Supplier and customer cost [2]	21,578	20,651	25,387
Management activity cost [3]	246,365	290,809	257,608
R&D cost [4]	146,138	227,451	247,191
Social activity cost [5]	132,394	159,053	117,377
Loss and compensation cost [6]	34,785	41,277	68,405
Fees and taxes [7]	4,039,028	4,153,115	4,157,135
Total	**7,365,118**	**7,980,015**	**8,031,409**

» Note 1: Expenditure on pollution prevention expenditure, global environmental protection, and resource recycling.

» Note 2: Expenditure arising from green procurement, resource recovery and recycling, and the products and services offered for the protection of the environment, and additional expenditures incurred on packaging containers for the reduction of environmental impacts.

» Note 3: Expenditure on environmental education and training, verification and certification, environmental monitoring and measurement, handling of environmental impacts, and insurance for environmental protection.

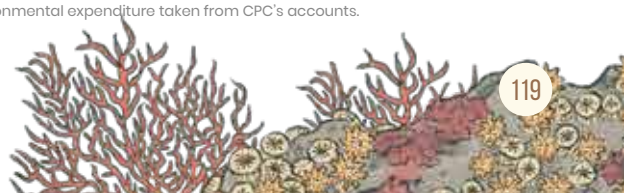
» Note 4: Expenditure on products researched and developed for environmental protection and expenditure on research to reduce environmental impacts at the product sales stage, and expenditure on environmental impact assessment.

» Note 5: Expenditure on nature conservation, afforestation, landscaping and other environmental improvements, expenditures on sponsoring community activities for environmental protection, environmental groups, announcements, environmental protection publicity, and other information.

» Note 6: Expenditure on environmental issues, compensation, penalties and lawsuits, and maintenance of urban landscape and living environment quality.

» Note 7: Fees regarding the air pollution, soil pollution, water pollution and other fees imposed by the government.

» Note 8: Based on amended environmental expenditure taken from CPC's accounts.



Environmental performance indicators

Indicator	2021	2022	2023
Petrochemical feedstock input (kL)1/petrochemical output (kL) 1	0.090	0.093	0.096
Crude oil input (kL)/equivalent distillation capacity for refinery (kL) 2	0.204	0.213	0.224
Liquidized energy input (kL) 3/(equivalent distillation capacity for refinery + petrochemical output) (kL)	0.001	0.001	0.001
Gasified energy input (kM^3) 4/(equivalent distillation capacity for refinery + petrochemical output) (kL)	0.017	0.019	0.020
Water consumption (kM^3)/(equivalent distillation capacity for refinery + petrochemical output) (kL)	0.183	0.194	0.208
Electricity consumption (kWh)/(equivalent distillation capacity for refinery + petrochemical production) (kL)	11.634	12.853[7]	13.937
CO_2 emissions (MT)/(equivalent distillation capacity for refinery + petrochemical output) (kL)	0.043	0.045[8]	0.058
Waste (kg)/(equivalent distillation capacity for refinery + petrochemical output) (kL)	0.761	0.820	1.005
Effluents (MT)/ (equivalent distillation capacity for refinery + petrochemical output) (kL)	0.068	0.086	0.079
Total effluent pollutants (kg) 5/(equivalent distillation capacity for refinery + petrochemical output) (kL)	0.004	0.003	0.005
VOC emissions (kg)/(equivalent distillation capacity for refinery + petrochemical output) (kL)	0.020	0.020	0.24
Air pollutant emissions (kg) 6 / (equivalent distillation capacity for refinery + petrochemical output) (kL)	0.022	0.026	0.026

» Note 1: Petrochemical feedstock input = (naphtha+reformate+xylene mixture) input, petrochemical output is the output of ethylene, propane, butadiene and benzene converted into equivalent distillation capacity (EDC).

» Note 2: EDC for refinery refers to the standardized equivalent capacity for the given refinery process.

» Note 3: Liquefied energy input=(gasoline+ diesel+ fuel oil) input.

» Note 4: Gasified energy input=(NG+ fuel gas) input.

» Note 5: Total effluent pollutants = total amount of chemical oxygen demand (COD) + suspended solids (SS) + oil.

» Note 6: Air pollutant emissions = total amount of sulfur oxides (SOx) + nitrogen oxides (NOx) + (total suspended particulates (TSP).

» Note 7: Taiwan Power Company adjusted electricity rates in 2022, hence amendments were made to electricity yield indicators starting from 2023.

» Note 8: CO2 emission data includes Scope 1 and Scope 2; Scope 3 data will be provided once 3rd-party verification is completed at the end of July 2023.

2.1 Mitigation and Adaptation to Climate change

As a major energy supplier in Taiwan, CPC has been actively monitoring possible risks and opportunities of climate change in recent years. As a response to the global sustainability development strategies, CPC conducted scenario analyses, quantified financial impacts, and devised response measures using the climate scenarios published by United Nations Intergovernmental Panel on Climate Change (IPCC) and International Energy Agency (IEA), so as to evaluate possible operational impacts as well as physical and transition risks to CPC. CPC also adopts the framework developed by TCFD (Task Force on Climate-related Financial Disclosures) for disclosure of climate resilience, and thereby ensures the sustainability of its practices.

Governance

- The board of directors continues to supervise climate change issues and review major investments including prospective R&D projects, green energy investments, and natural gas infrastructures while taking part in annual risk opinion surveys.
- CPC has assembled an interdepartmental panel to carry out important tasks while recognizing climate change impact as a major risk and enforcing controls using the corporate risk management system.
- CPC assembled a Sustainable Operations Promotion Committee in 2005 to explore climate change-related visions and strategies and enforce real actions. Starting from 2024, the committee has been further empowered with three additional seats that are undertaken by directors, who represent the board in supervising CPC's involvement in sustainability and climate action-related matters.
- Tasks forces on climate change response, carbon footprint survey, and carbon pricing have been assembled to enforce climate actions.
- CPC continues to organize certified home training courses for directors and supervisors, and engage senior managers, external committee members, directors, and supervisors for the discussion of climate change issues.

Risk management

- CPC has incorporated the TCFD framework into its business risk management process, and developed climate risk identification and assessment procedures that departments may follow to evaluate potential operational and financial impacts to CPC. Based on the outcomes of climate risk identification and risk matrix, CPC develops strategies that help improve climate resilience of the entire organization.
- CPC conducts rolling assessments of physical risk, transition risk, and opportunities on a yearly basis, and analyzes the operational and financial impacts of climate change risks and opportunities using the TCFD framework.

Strategies

- Through interdepartmental discussions about short-, medium-, and long-term climate risks and opportunities, the Risk Management Committee is able to proceed with materiality assessment and devise response strategies for major climate risks and opportunities as well as their potential operational and financial impacts to CPC. Resolutions of the Risk Management Committee are presented to the board of directors. CPC is actively adopting low-carbon practices in response to climate change risks, and although doing so incurs additional investments and costs, it allows CPC to better conform with future trends of the energy industry.
- CPC analyzes risks by adopting science based targets using transition scenarios (IEA 2DS) and climate scenarios (RCP 2.6, RCP 8.5, etc.)

Goals and indicators

- Based on the outcomes of risk identification exercises, CPC sets management indicators relating to climate change and monitors performance and attainment on a regular basis.
- CPC conducts regular surveys of greenhouse gas emissions using ISO 14064-1 standards, and engages a 3rd-party institution to validate data.
- CPC has set medium-term goals to reduce emission by 40.6% and 49.5% by 2025 and 2030, respectively, compared to the 2005 baseline. As technologies mature, CPC will also adopt renewable energy, hydrogen power, carbon capture/utilization, and carbon negative technologies to help achieve net zero emission by 2050.

2.1.1 Climate change governance

CPC places great emphasis on the possible risks and opportunities of climate change, and everyone from the board of directors to risk management teams of various departments are committed to enforcing risk supervision, governance, and management practices. A Sustainable Operations Promotion Committee and a Risk Management Committee have been assembled at the executive level to make and approve decisions, and to coordinate climate-related task forces within CPC (such as the Climate Change Response Task Force, Energy and Carbon Reduction Task Force, and Renewable Energy Development Act Response Task Force) toward carrying out interdepartmental actions. These measures are indicative of the completeness and depth of CPC's climate change governance and risk control efforts.

Climate change governance and risk management framework

Management level

Board of Directors

Supervision of CPC's Climate Change Risks and Opportunities

Sustainable Operations Promotion Committee

An interdepartmental decision-making body on climate change issues, with the chairman of the Board of Directors as the chairperson and the President reporting to the Board of Directors from time to time on the results of implementation

Risk Management Committee

Review the climate change risk management mechanism, supervise the improvement of the management situation, and report to the Board of Directors on a regular basis

decision-making and supervision

promote and implement

Implement level

Climate Change Response Team

Promote low carbon transformation and energy saving and carbon reduction strategies in response to climate change

Carbon Footprint Inventory and Internal Carbon Pricing Team

Promote product carbon footprint inventory and introduce internal carbon pricing mechanism to set the price of carbon emissions for the company

Process energy saving and carbon reduction group

Promote energy conservation and carbon reduction strategies

Renewable Energy Development Act Task Force

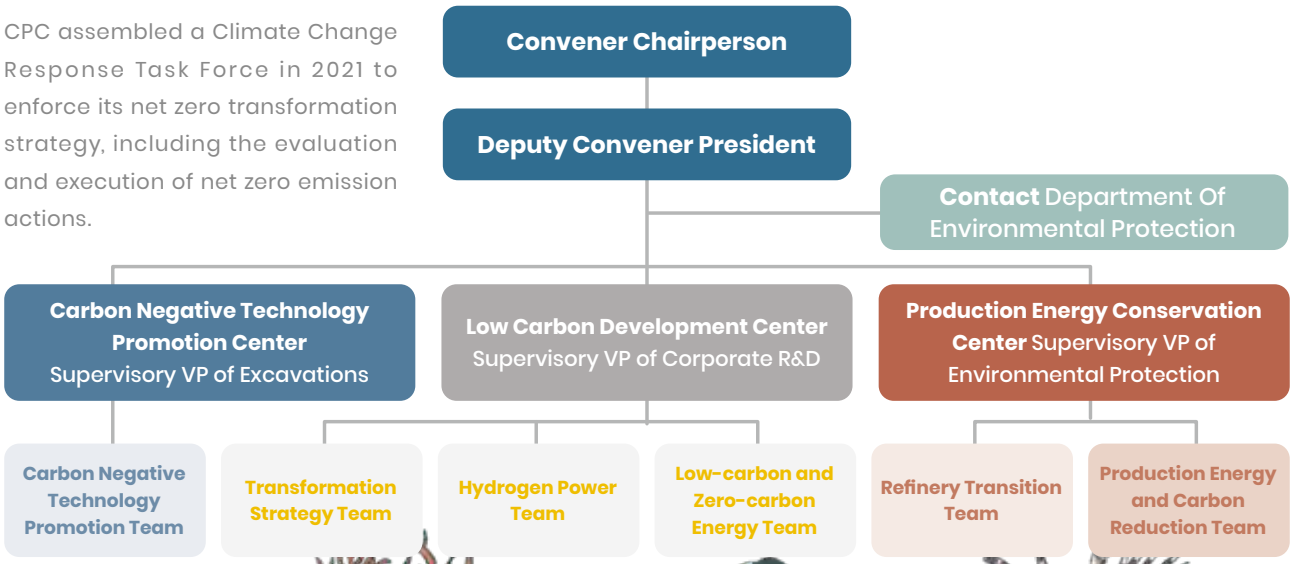
Promote the installation of renewable energy generation equipment to meet regulatory requirements

Risk management Team

Identify and implement climate change risk control actions, and continue to refine relevant risk management actions

CPC's Climate Change Response Task Force

CPC assembled a Climate Change Response Task Force in 2021 to enforce its net zero transformation strategy, including the evaluation and execution of net zero emission actions.



2.1.2 Risks and opportunities of climate change

Climate Change Response

CPC has been incorporating climate change issues into its risk management system by following the TCFD framework. The risk management team of each department (division and office) first evaluates the potential risks and operational and financial impacts of "Climate and the ecosystem," and then devises appropriate responses and strategies based on the outcomes of risk assessment and priority determined using the risk matrix. Each of risks identified is tracked using a "Risk Matrix" and an enterprise risk management (ERM) system. Not only are risks reported to the board of directors and the senior management for materiality assessment, but they are also raised in Risk Management Committee meetings for interdepartmental discussions about short-, medium-, and long-term climate risks and opportunities. Key resolutions of the committee are reported to the board of directors to enhance climate resilience of the organization.

CPC observes the TCFD framework and guidelines by distinguishing climate change risks between transition risks and physical risks, which are further broken down into sub-categories including: policy, regulation, technology, market, and reputation under transition risks, and immediate, and long-term under physical risks. CPC conducts climate change risk assessments generally at least once a year, and the assessment covers existing business locations and part of its supply chain.

Procedures for identifying major climate change-related risks and opportunities

Identify

1 Gathering of scenario data through discussions

CPC adopts UKCIP's climate change risk assessment procedures and TCFD's disclosure framework. Through department discussions, CPC gathers qualitative data and attempts to make preliminary identification of potential climate risks and opportunities while establishing an understanding of how each climate risk affects CPC.

Evaluate

2 Issuance and recovery of TCFD questionnaire

Using quantitative climate risk questionnaires, CPC evaluates and identifies factors that are relevant to climate risks and opportunities.

Analyze

3 Analysis and evaluation of climate risk

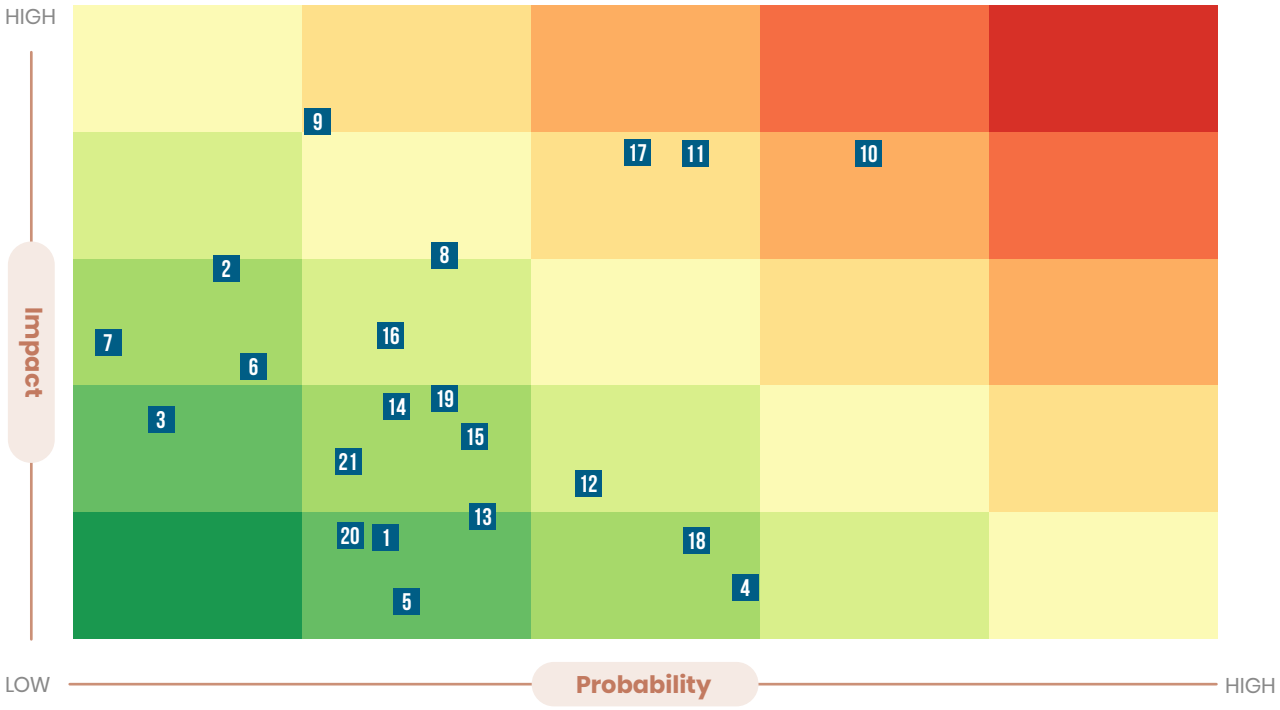
Using scenario analysis tools, CPC analyzes questionnaire data for vulnerability, impact, and likelihood of occurrence, and constructs a TCFD climate risk matrix from the three parameters.

Control

4 Response, strategy, and management approach for climate risks and opportunities

CPC discloses the climate risks and opportunities it identifies along with explanations on the possible impacts. Strategies and management approaches are then proposed for each of the risks identified.

TCFD climate change risks matrix



» Note 1: The X-axis represents likelihood of a given issue under the global sustainability trend.

» Note 2: The Y-axis represents the intensity of impact that an issue may have on CPC.

Physical risk

1 Equipment damage caused by extreme weathers

2 Impact on employees' attendance and operations caused by extreme weathers

3 Impact on transportation, supply, and communication caused by extreme weathers

4 Rising sea levels and impact on the operations of coastal plants

5 Property devaluation from rising sea levels

6 Disruption of operation caused by drought and water shortage

7 Rising average temperatures may force suspension of business locations due to excessive heat

Transformational risks

8 Shortage of key materials caused by extreme weathers

9 Tightened environmental regulations increase environmental protection spending

10 Unstable supply of power or risk of shortage from the green energy policy

11 Carbon fee/carbon tax systems imposed by governments around the world

12 Demand for green products

13 Change in customers' preference

14 Customers' increasing environmental requirements in production/operation

15 Unstable supply and transportation of energy sources

16 Long-term climate risk makes supply of renewable energy unstable

17 Rising cost of critical materials

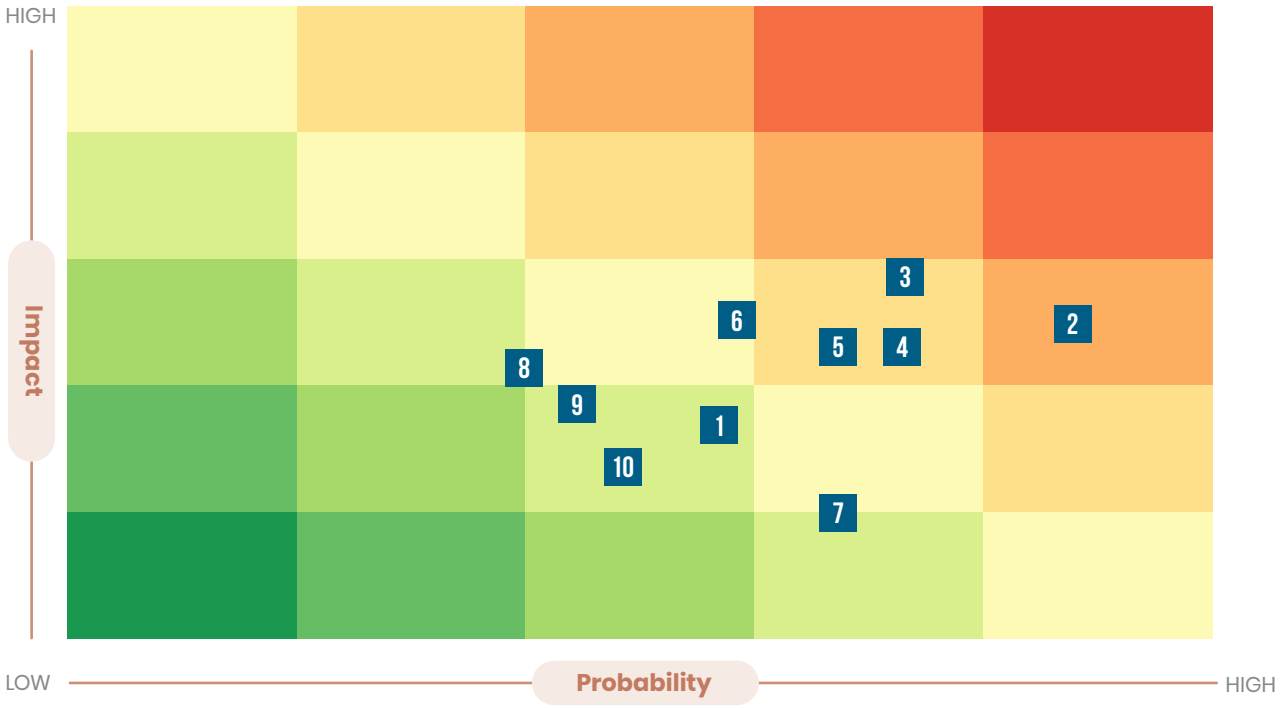
18 Product or market dominance may be replaced by peers with low-carbon or new technologies

19 The need to commit significant R&D budget increases operating costs

20 Underwhelming transformation in response to climate change affects reputation

21 Half-hearted effort toward energy and carbon reduction compromises brand image

TCFD climate change opportunities matrix



» Note 1: The X-axis represents likelihood of a given issue under the global sustainability trend.

» Note 2: The Y-axis represents the intensity of impact that an issue may have on CPC.

Opportunities

1 Implementation of water conservation measures increases the efficiency of water resource utilization

2 Analyze flood scenarios, devise risk management procedures, and implement disaster response system

3 Strengthen pipeline resilience to sudden temperature changes

4 Promote use of renewable energy sources for improvements to the energy structure

5 Increase energy efficiency and save operating costs

6 Smart/green energy transformation conforms with power conservation requirements and increases the competitive advantage of the industry

7 Invest resources into low-carbon R&D and secure early advantage in the new energy market

8 Acquire government incentives and engage in carbon offset and carbon trading

9 Set supplier behavior guidelines and improve supply chain stability

10 Improve brand reputation as well as customers' and stakeholders' perception

Impacts of and responses to major climate risks

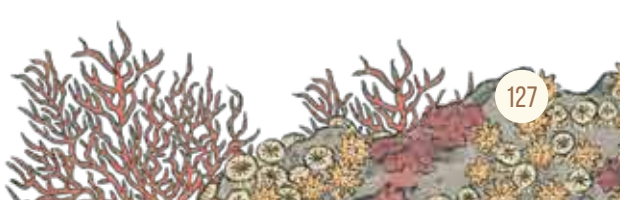
Risk aspect	Risks	Financial and non-financial impacts(-)	Response actions / opportunities(+)
Transformational risks / Policies and laws	Collection of carbon fee	⊖ In light of the worldwide net zero carbon movement, carbon cost will account for a higher percentage of total product cost in the future. ⊖ The Climate Change Response Act introduces a carbon credit system that imposes surcharge on greenhouse gas emissions, and therefore increases operating costs. ⊖ In 2023, CPC's Carbon Fee-sensitive Units generated total greenhouse gas emission of 6.57 million MT1; assuming that carbon fee is charged at NT$100 to NT$300 per MT of emission, CPC will have to pay carbon fees totaling NT$657 million to NT$1.97 billion a year.	⊕ CPC conducts greenhouse gas emission surveys each year to mitigate impact. ⊕ Carbon footprint survey was completed on 527 products in 2024, and 80 of which were awarded carbon footprint certification. ⊕ CPC introduced internal carbon pricing, assembled a Carbon Pricing Task Force, and has set performance management goals to progressively reduce carbon fee per unit of production. ⊕ CPC persistently explores ways to reduce energy consumption and carbon emission of its production procedures and to improve the efficiency of energy/resource utilization. Net zero emission technologies and clean energy sources are being introduced whereas low-carbon models and services are being adopted.
	Green energy policy	⊖ Terms of the Renewable Energy Development Act that target intensive energy users have come into effect, which increases operating costs. ⊖ Budgets are being allocated persistently into the research of technologies such as solar power, geothermal, hydrogen power, energy storage etc.	⊕ Through interdepartmental coordination, CPC has met its statutory green energy capacity by constructing 254 sites with a total capacity of 12.946 MW. ⊕ CPC completed assessments for the construction of pilot hydrogen fuel station, and plans to introduce the nation's first mobile hydrogen fuel station by the end of 2024 to provide hydrogen fuel for vehicles.
Market	Unstable supply/increasing cost of key materials	⊖ Disruption in the supply of key materials may cause instability in domestic energy supply and put business activities to a halt ⊖ Rising cost of raw materials diminishes financial performance ⊖ War causes a surge in energy prices and poses challenges and uncertainties to the future business environment.	⊕ CPC will engage regional partners more actively in the emergency sourcing (i.e. exchange or resale) of gas inventory and sharing of market information. ⊕ More attention will be directed toward identifying trade opportunities, increasing risk management capacity, monitoring changes in market supply and demand, securing import sources, and increasing trade profits. ⊕ Develop a secondary supply system, increase energy reserves, conduct ongoing assessment of supplier risks, and avoid or reduce purchases from high-risk locations. ⊕ Increase production and internal warehouse capacity. ⊕ Promote waste heat recovery in collaboration with other companies in the industrial park; purchase reusable steam produced by China Steel to lower energy consumption.

» Note: Greenhouse gas emission volume is calculated once a year; data for 2023 will be updated upon completion of 3rd-party verification at the end of July 2024; the data presented here is based on internal survey.

Impacts of and responses to secondary climate risks

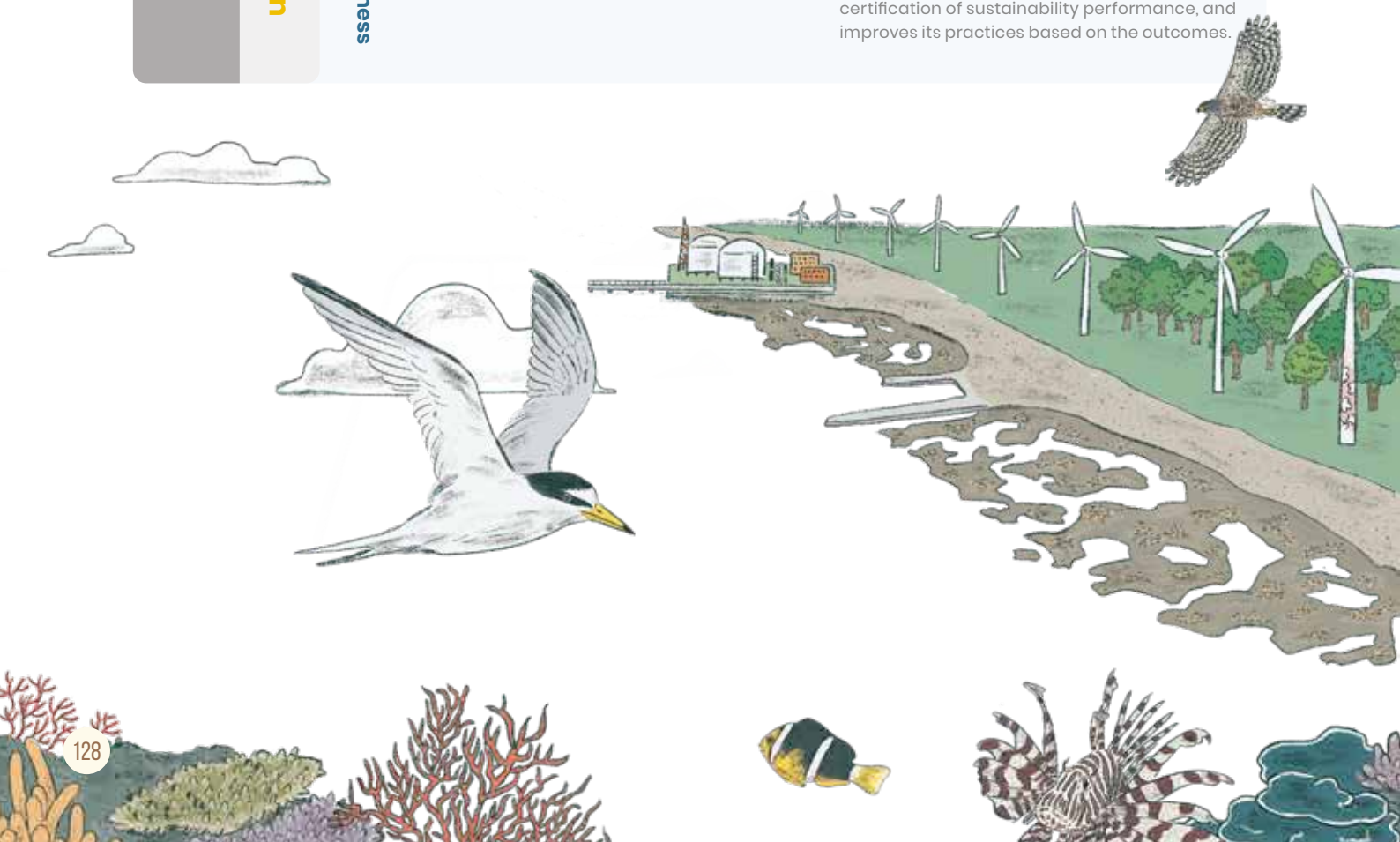
Risk aspect		Risks	Financial and non-financial impacts(-)	Response actions / opportunities(+)
Physical risk	Immediate and long-term considerations	Typhoon and flood	⊖ Climate change increases both the frequency and severity of Typhoons and heavy rains, which may cause damage to operating facilities and injury to employees, and thereby incur additional costs on equipment maintenance and insurance coverage.	⊕ Conduct detailed surveys on the vulnerability of existing facilities. CPC will consider moving equipment to elevated platforms and installing additional drainage pumps in the future, and work with the Industrial Technology Research Institute to devise adaptation strategies for improved operational resilience. ⊕ CPC will continually monitor and analyze climate disasters (including drought, tidal wave, flood, hurricane, mudslide, and lightening strike) while at the same time enhance disaster resistance of equipment and buildings and implement complete SOPs for disaster preparation, response, and recovery.
		Drought and water shortage	⊖ Production disruption due to output reduction or boiler shutdown as a result of water rationing.	⊕ Recycle and reuse reclaimed water through premium water treatment facilities for higher water efficiency and enhanced operational resilience. ⊕ Purchase of reclaimed water.
Transformational risks	Market	Change in consumers' preference	⊖ A change in customers' preference may render CPC unable to respond to market demand in time and ultimately affect revenues. ⊖ The rise of electric vehicles affects consumers' demand and ultimately corporate revenues.	⊕ CPC supports smart, green energy transformation of fuel stations and follows the "Smart e-Bike Charging Facilities Expansion Project." A total of 1,000 charging and battery swapping stations and 5 smart green energy fuel stations have been established to provide diverse services and to create green opportunities. ⊕ Through collaboration with a tertiary institution, CPC assembled a research team and contributed to the successful development of new farming technology for species of high economic value.
	Transformation technology	Existing products being replaced with low-carbon alternatives	⊖ The rise of sustainability awareness causes consumers to switch to low-carbon and energy-efficient products or services, which negatively affects the sale and revenue of CPC's conventional energy products. ⊖ Support the government's energy transformation policy by increasing supply of natural gas and committing resources into investment projects.	⊕ Direct technological advantage and R&D capacity into the development of relevant technologies and markets; construct a net zero transformation strategy that emphasizes fuel upgrade, carbon reduction, clean energy, and expand operations accordingly. ⊕ Construct (expand) LNG receiving stations; increase the import, storage, and supply capacity of natural gas to meet the market's demand for oil substitutes, thereby creating CPC's clean energy supply chain.





Impacts of and responses to secondary climate risks

Risk aspect	Risks	Financial and non-financial impacts(-)	Response actions / opportunities(+)
Transformational risks	Transformation technology	High cost of low-carbon transformation	⊖ To reduce greenhouse gas emission and meet demand for low-carbon products and services, CPC is required to invest into the acquisition of energy-efficient equipment and development of new production procedures and technologies. ⊖ Increasing market demand for environment-friendly products.	⊕ Make adjustments to the refining model as well as structural improvements and value-adding uses of petrochemical materials. Turn viable contents of pyrolysis gasoline into living necessities and make optimal use of oil by-products and turn low-value fuel into high-value materials. The total cost of investment is estimated at NT$14.597 billion . ⊕ Raise export sales of fuel oil. ⊕ Shift all boiler fuel to natural gas or fuel gas. Promote use of fuel gas in refineries by purchasing burners and accessories for Dalin Refinery, switching to fuel gas at Taoyuan Refinery Plant, and renewing No. 1 boiler at Taoyuan Refinery Plant. Approximately NT$1.72 billion of cost was committed in the last 5 years. ⊕ In 2023, CPC renewed its short-term sustainability-linked loan while at the same time secured new long-term sustainability-linked loan and green loan that are expected to save up to NT$6.18 million in interest expenses each year.
	Reputation	Impacts to business reputation	⊖ Climate change actions and products of high carbon emission that do not meet stakeholders' expectations will result in negative publicity and reduce customers' trust and satisfaction to the detriment of business reputation, causing CPC to lose market leadership and suffer financial losses.	⊕ In addition to monitoring international trends, regulatory changes, and market trends, CPC also adjusts internal management guidelines and makes transparent disclosures as well as timely responses to promote the organization's low-carbon, green image. ⊕ CPC takes part in the evaluation and certification of sustainability performance, and improves its practices based on the outcomes.



Response to climate change opportunities

Aspect	Climate-related opportunities	CPC's practices
	Use of renewable energy	+ Assembled an Offshore Wind Power Joint Venture Project Team and a Hydrogen Energy Team. + Constructed solar power systems totaling 12.946MW in capacity in 2023; CPC expects to construct additional 22.005 MW of capacity in 2024. + CPC promotes smart green energy fuel stations and obtains green building certification as well as renewable energy site certification for its fuel stations.
Use of energy	Increase of energy efficiency	+ CPC has established an Energy Conservation and Carbon Reduction Team. The team holds working team meetings regularly and is responsible for the research and review of energy conservation and carbon reduction practices, introduction and implementation of energy conservation technologies, guidance of energy conservation and carbon reduction of plants, and compilation and experience sharing of energy conservation cases. + CPC helps at least 10 industry participants make use of natural gas as fuel a year. + Energy conservation measures are being implemented at refineries and petrochemical plants to increase energy efficiency across plant sites. These measures are expected to reduce carbon emissions by 180,000 MT.
Operational resilience	Evaluation and prevention of risks and hazards	+ CPC conducts climate risk assessments on a yearly basis and continues to update its practices. A total of 5,076 operational facilities were subjected to assessment in 2023.
Resource utilization	Use and management of water resources	+ CPC introduced energy conservation technologies such as heat recovery pipe, heat exchanger network simulation, new air preheater, crude oil pre-flash system, and use of high efficiency blades for cooler tower fans. Furthermore, fuel gas, medium/low pressure steam, and water resources are being used and recycled at higher intensity. + Pro-active efforts are being committed to recycle and reuse wastewater, whereas improvements are being made to the use of coolant, boiler water, hydrant water, and production water. Rainwater recovery systems are being installed at petrol stations, whereas reclaimed water is being purchased by appropriate units.
Product/ market/ reputation	Market and business opportunities	+ CPC developed batch production technology for HMF, a precursor to the bio-based polyester material PEF, and reduced waste in the production procedures, making it an ideal upstream material for bioplastics. + Continue support to government policies by supplying and promoting E3 ethanol at 14 fuel stations in Taipei City and Kaohsiung City. Invest into the development of production technologies for renewable oil and bio-aviation fuel. + Invest into the development of technologies concerning biomass energy, energy storage materials, and biomaterials; make investments that add value to petrochemical products.
	Brand image and market presence	+ Enhance the adjustment of refining and manufacturing structure and equipment renewal Adopt the best available technology (BAT) to enhance energy efficiency and reduce environmental impact. + Continue promotion of product carbon neutrality. As of 2022, CPC had launched carbon neutral natural gas, carbon neutral ethylene, carbon neutral crude oil, and carbon neutral fuel stations. 129,103 MT of carbon neutral natural gas was imported in 2023.



2.1.3 Analysis of climate change risk and opportunity scenarios

All of CPC's internal departments are required to identify and rate risks that are relevant to their business activities, including climate-related risks, and report conclusions for review by the Risk Management Committee. The types of risks identified include legal (such as quota control and transactions that are likely to pose additional costs to CPC), industrial safety, reputation, technology, policy (such as the effect of the ban on the sale of fossil fuel vehicles), and market (such as changes in the fuel oil market. The risks identified are then rated on a scale of 9 based on the probability of occurrence and severity. CPC convenes annual Risk Management Committee meetings as a way to examine and monitor risks that the Company may be susceptible to on an ongoing basis, and to plan, discuss, and analyze viable solutions. CPC adopts climate scenario analysis to determine the intensity of extreme weather in the future. Based on the findings of the analysis, we are able to evaluate exposure, sensitivity, fragility, and susceptibility of various facilities to such risks and identify primary risks for improvement. The chart below shows some of the climate risks and opportunities identified through scenario analysis in 2023, which will be explained in detail in later parts of this section.

		Physical/ transition	Timeframe [1]	Likelihood [2]	Financial impact
Climate risk	Heavy rainfall and flood	Physical	Short-term	High	Moderate
	The government collects carbon fees	Transition	Short-term	Extremely high	Significant
	Reduced demand for fossil fuel	Transition	Long-term	High	Moderate

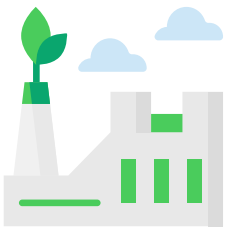
» Note 1: Timeframe refers to the time of risk occurrence. Short term: 0–3 years; medium term: 3–8 years; long term: 8–28 years.

» Note 2: Likelihood refers to probability of occurrence for the given risk.

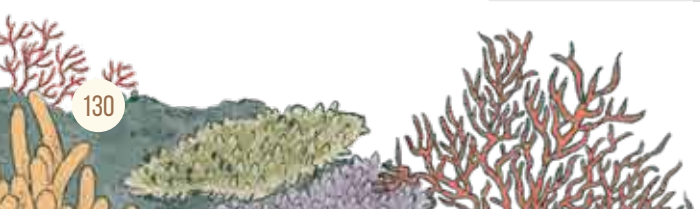
Analysis and evaluation of climate change physical risks

CPC has been a participant in the Energy Administration's "Climate Change Adaptation Strategy and Guidance for the Energy Sector" since 2018. After conducting a comprehensive survey of parameters such as coordinates and elevations and learning the disaster prevention design across plant facilities, CPC chose to evaluate disaster potential and disaster tolerance for various risk factors including strong winds and floods using the AR5 high emission scenario – RCP8.5. Impacts of extreme weathers were also simulated during this process. Based on the probability of occurrence and impact assessment established above, a risk matrix was produced to help determine CPC's climate change physical risks.

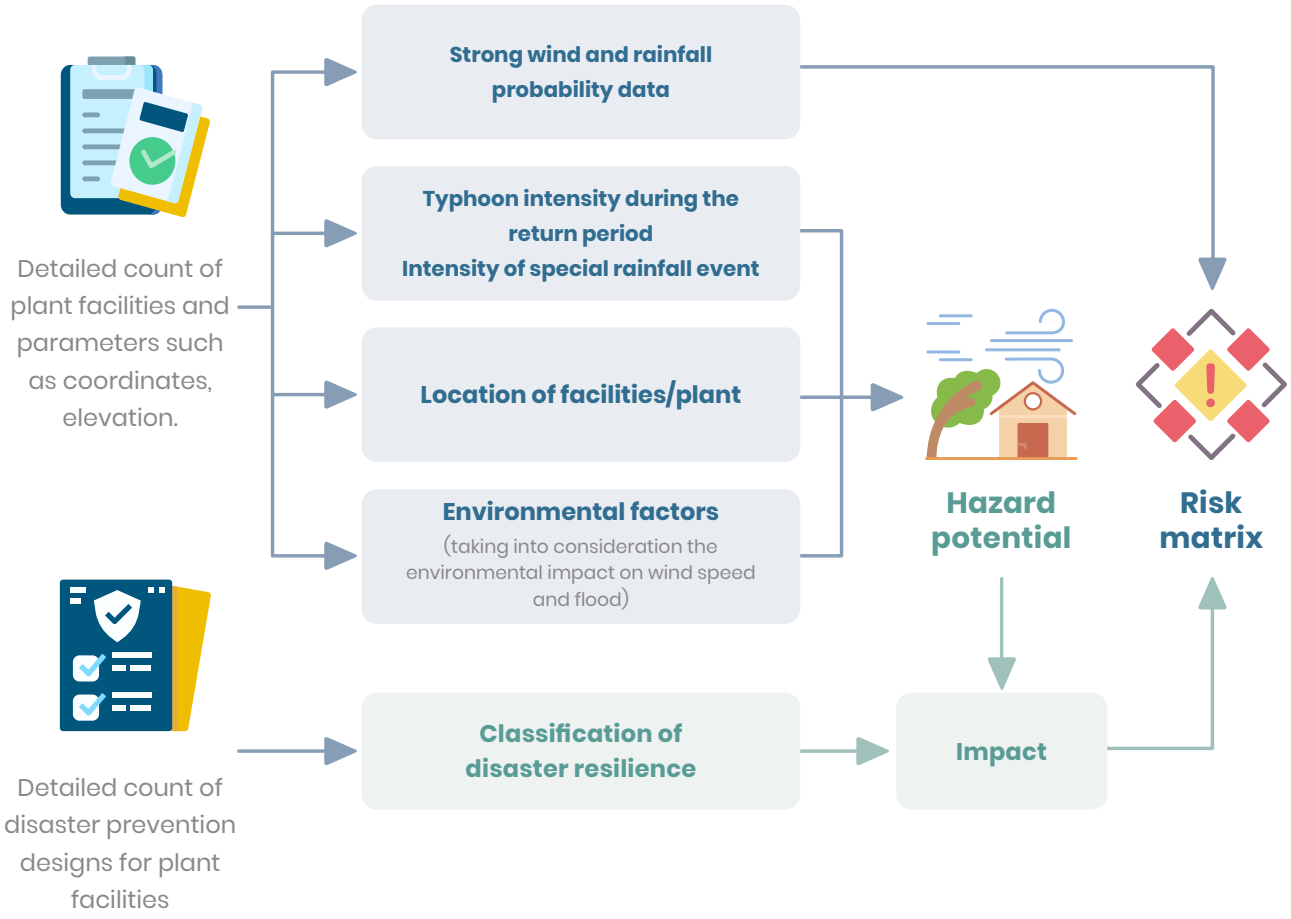
CPC completed climate risk survey for 26 energy supply sites between 2018 and 2023. Considering how the methodologies and scenario information used in each year have improved over time, CPC will continue updating climate change risk assessment reports for its plant sites in the future so that plant sites can be compared using a uniform baseline to better establish current and future risk levels under the same scenario and conditions.



26 ENERGY SUPPLY SITES
completed climate risk survey



Evaluation of climate change physical risks

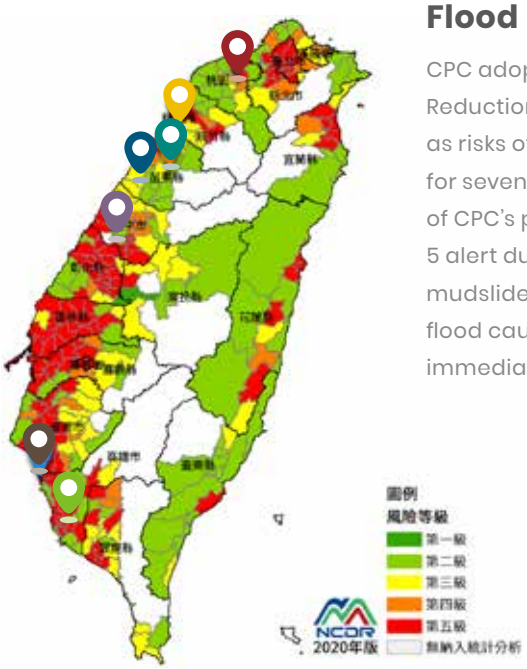


Climate change physical risk assessment outcomes

4,923	35	118
Facility count	Facility count	Facility count
Medium risk and below	Medium-high risk	High risk

Choice of scenario and data for physical risk assessment

Taiwan has been susceptible to the threat of extreme weather events in recent years. Given the increasing risk of heavy rainfall, it is necessary for CPC to develop responses for typhoon, heavy rain, potential shutdown of petrol stations, suspended transportation of oil products, and lessened demand for oil. To enable better control over risks of physical damage associated with climate change, CPC adopted the future climate model and data published on Taiwan Climate Change Projection Information and Adaptation Knowledge Platform (TCCIP) and analyzed risks as well as impacts of heavy rain-induced flood for some of CPC's operations using scenario RCP8.5. Through climate risk assessments, CPC chose seven key energy supply sites to undergo flood risk analysis in 2023. These sites include Taoyuan Refinery Plant, Hsinchu Gas Supply Center, Natural Gas Treatment Plant, Miaoli Gas Supply Center, Taichung Gas Supply Center, Yongan LNG Refinery, and Dalin Refinery.



Flood risk potential map for CPC's key plant sites

CPC adopted the tools of National Science and Technology Center for Disaster Reduction (NCDR) and analyzed risk of flood from rainfall (level 5 alert) as well as risks of slope failure and mudslide under heavy rain using scenario RCP 8.5 for seven of its plant sites. According to the outcomes of the analysis, all seven of CPC's plant sites have had the risk of flood from rainfall classified as a level 5 alert due to the local terrain, whereas alert thresholds for slope failure and mudslide both exceeded extreme precipitation. This means that, except for flood caused by sudden extreme precipitation, no other risks would pose any immediate major hazard to CPC under any climate scenario.

- **Taoyuan Refinery** — Guishan District, Taoyuan City
- **Taichung Gas Supply Center** — Xitun District, Taichung City
- **Hsinchu Gas Supply Center** — Baoshan Township, Hsinchu Count
- **Yongan LNG Refinery** — Yongan District, Kaohsiung City
- **Natural Gas Treatment Plant** — Wutou Township, Miaoli County
- **Dalin Refinery** — Xiaogang District, Kaohsiung City
- **Miaoli Gas Supply Center** — Tongluo Township, Miaoli County

CPC flood hazard potential assessment

	High risk	Medium-high	Medium risk	Low risk	Eliminated risk/ no data
Taoyuan Refinery Plant	0	1	13	267	343
Hsinchu Gas Supply Center	0	0	0	2	125
Natural Gas Treatment Plant	0	0	0	117	0
Miaoli Gas Supply Center	0	0	0	9	240
Taichung Gas Supply Center	0	0	0	100	100
Yongan LNG Refinery	0	0	0	0	113
Dalin Refinery	0	0	0	383	258

Legends for risk level:

- High risk: The building/facility is very susceptible or vulnerable to future climate change, and should be prioritized for mediation measures.
- Medium-high risk: The building/facility is highly susceptible or vulnerable to future climate change, and should adopt mediation measures.
- Medium risk: Susceptibility and vulnerability of the building/facility to climate change is acceptable, and should have risks closely monitored.
- Low risk: Susceptibility and vulnerability of the building/facility to climate change is low, and no further action is needed.
- Eliminated risk: Susceptibility and vulnerability of the building/facility to climate change is very low.

» Note 1: The flood potential assessment was conducted by assuming rainfall of 650 mm/day under the AR5 RCP8.5 scenario

» Note 2: All climate change data was derived from physical or statistical simulations, and the simulation process involved many assumptions and conditions. Furthermore, TCCIP takes a low resolution of the global climate model and applies it to Taiwan using dynamic/statistical downscaling. Although this approach increased the resolution of space/time, it also introduced additional errors and uncertainties.

Financial impact of physical risks

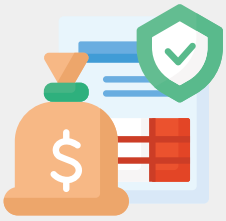
According to the statistics taken from CPC's work safety management system, there have been two instances of petrol station shutdown due to typhoon or heavy rain in the last four years, which means that the rate of occurrence has doubled to 0.5 instance/year in the last 4 years. This rate of occurrence was also applicable to franchise stations. Assuming that a weather event causes a station to shut down for 3 days, each event would affect CPC's revenues by approximately NT$1.83 million. Based on available data, CPC estimates that about 10% of petrol stations are susceptible to the impact of heavy rain, and the amount of financial impact is approximately NT$134.4 million a year.

Response strategies for physical risks

CPC shall strengthen its capabilities to respond to weather events similar to those described above, and adopt measures such as construction of drainage facilities and hiring manpower to maintain and clean the petrol stations, so as to reduce downtime and revenue losses. Based on evaluation, petrol stations located in areas of high flood risk should be equipped with adequate drainage capacity to ensure resumption of operation. The cost of pump may vary from NT$500,000 to NT$1,500,000 per unit depending on specifications, and there may be additional costs for installation and related equipment (totaling NT$1.5 million). Assuming that 10% out of CPC's 627 petrol stations are susceptible to flood, the Company will have to commit approximately NT$940.5 million to properly prepare against heavy rain.

Response strategies

about
NT$ 134.4 million/year
Financial loss of heavy rainfall and flood



about
NT$ 940.5 million/year
Cost of risk response

CPC will continue monitoring climate change issues and direct attention not only to water buildup and drainage on plant premises, but also to blockage of ditches particularly during rain. Ditches will be cleaned regularly to prevent flood from heavy rain that would otherwise disrupt operations.

Transition risk (policy and regulation) assessment

According to the outcomes of CPC's climate change risk and opportunity identification exercise, the impact of policy and regulatory risks under transition risk was the highest among all risks, and has been highlighted as a major risk. In light of the net zero targets and related regulations imposed by the Taiwanese government, CPC has conducted a series of transition risk assessments using the Beyond 2°C Scenario and the three carbon emission scenarios: Stated Policies Scenario (STEPS), Sustainable Development Scenario (SDS), and Net Zero Emissions by 2050 Scenario (NZE) announced by the International Energy Agency (IEA) to evaluate future carbon emissions and the financial impact of potential carbon fees.

Assumptions of IEA's 3 carbon reduction scenarios

STEPS

STEPS is deemed as a conservative scenario. It is a "Business As Usual" scenario that analyzes changes in carbon emissions based on existing policies of governments around the world, without considering potential tightening of climate policies.

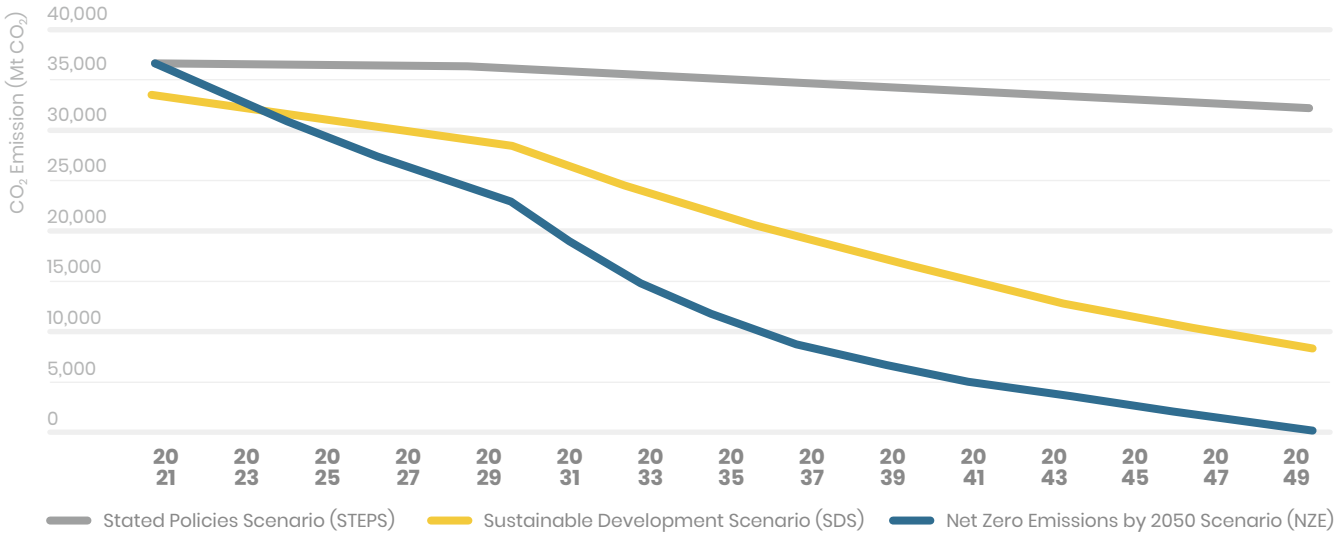
SDS

SDS assumes that clean energy policies and investments progress at faster rates toward accomplishing key sustainable development goals. The SDS sets "well below 2°C" as the goal; it assumes that all existing net zero commitments have been fulfilled and more extensive efforts are being made to reduce emission in the near future. While developed economies are expected to achieve net zero by 2050, China is expected to achieve net zero by 2060 whereas other nations should achieve net zero by no later than 2070.

NZE

NZE is the scenario that assumes net zero emissions by 2050, with developed economies achieving net zero ahead of other countries. This scenario conforms with the United Nations' Sustainable Development Goals (SDGs) relating to energy, especially the goals to make energy widely accessible and to significantly improve air quality by 2030. The NZE is also consistent with IPCC's Special Report on Global Warming of 1.5°C with regard to the reduction volume.

CPC estimated emission for different reduction policies



» Note: This scenario analysis designates CPC's 2021 greenhouse gas emission volume as the baseline.

As governments around the world begin to evaluate and adopt the carbon pricing system, CPC analyzed three different carbon pricing systems and applied its own climate model and financial model to further determine the financial impacts of actual carbon fees that CPC is likely to bear in the respective scenarios.

EU ETS

Implementation of carbon pricing system equivalent to EU's carbon price; uses the carbon trading price growth rate projected by the EU.

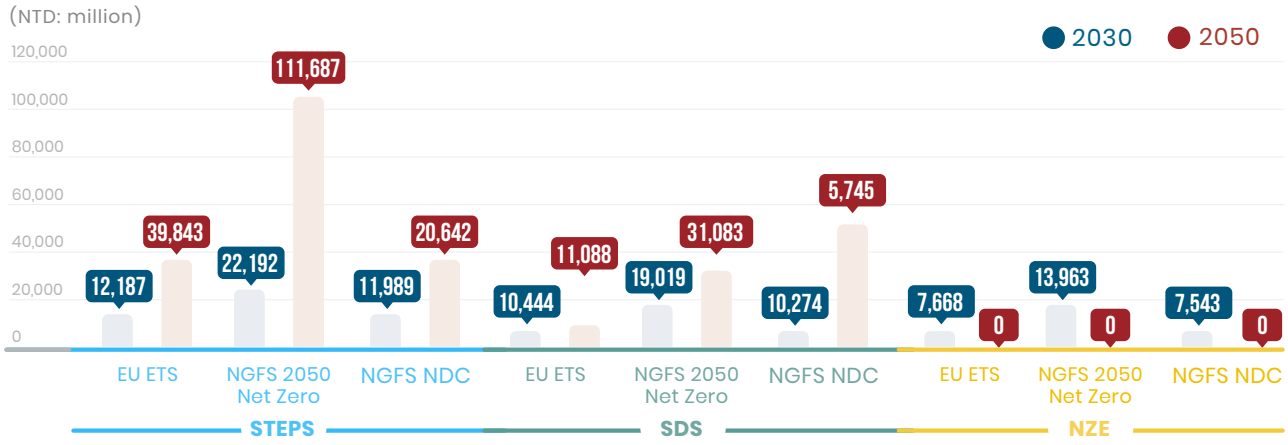
NGFS 2050 Net Zero

Takes into consideration scenarios of equivalent macroeconomic impact. For NZE, transformation impacts, policy impacts, and long-term physical effects are taken into consideration.

NGFS NDC

Takes into consideration scenarios of equivalent macroeconomic impact. The NDC scenario takes transformation impacts into account and long-term physical effects without considering policy impacts.

According to CPC's study, the Climate Change Response Act will be imposing carbon fees on emission sources that emit 25,000 MT of greenhouse gas and above. CPC expects five of its plant sites to be susceptible to this impact. Based on the simulated climate scenarios, it is apparent that CPC will incur some degree of carbon fee in any of IEA's three climate scenarios, and the cost impact is the highest under STEPS. No matter the level of carbon price, CPC's exposure to carbon cost will increase progressively over time, and amount to as high as NT$111.67 billion. However, in the NZE scenario where CPC actively develops renewable energy sources and purchases carbon credit to offset emission as a means to achieve net zero by 2050, CPC will not incur additional carbon fee for having ultimately achieved net zero.



Response strategies for transition risk (policy and regulation)

CPC has been supporting the government's energy conservation policy and executing greenhouse gas emission controls intended for the nation's energy and manufacturing sectors. Since 2005, CPC has implemented a multitude of production improvement and energy management solutions in an attempt to reduce emissions, and in 2023, the organization made further optimizations to the production process, renewed and improved existing equipment, and executed 62 energy/carbon reduction measures including recycling and reuse of residual heat that achieved total carbon reduction of 262,000 MT, which was equivalent to saving 74,000 kL of oil usage. CPC continually replaces factory equipment with energy-efficient alternatives and implements energy conservation plans to save over 1% of electricity on average every year. As a response to the GHG Emission Control Action Plans (phase II) for energy and manufacturing sectors, CPC introduced its own "Refinery Performance Enhancement Program" and "Petrochemical Plant Performance Enhancement Program" that aimed to reduce greenhouse gas emission by 180,000 MT between 2021 and 2025. CPC examines greenhouse gas management and energy conservation progress once every six months during performance meetings that are hosted by the vice president of environmental protection affairs. Domestic and overseas experts are also invited to provide on-site counseling on energy and carbon reduction at various plant sites and business segments, where they assist in examining the operation and energy efficiency of large equipment, and offer improvement suggestions as deemed appropriate. Any improvement suggestions raised are followed up in performance review meetings.

Major Energy Conservation/Carbon Reduction Measures and Performance – 2023

Major Energy Conservation Measures	Reduction (KLOE)	Performance (NT$ ten thousands)	tCO_{2e} (t)
Process Equipment Renewal	255,881	393,353	846,295
Equipment Repair/Improvement	147,617	222,605	454,292
Waste Heat and Fuel Gas Recovery	268,072	430,597	796,136
Operation Improvement	119,857	304,480	380,718
Other Improvements in Energy Management	192,929	346,034	620,259
Total	**984,356**	**1,697,070**	**3,097,701**

Transition risk (market) assessment

CPC has the largest share of Taiwan's oil and natural gas market (about 79.6% in gasoline and 77.2% in diesel), and supplies fuel to businesses and consumers for transportation as well as manufacturing activities. Due to the imposition of emission charges and the resulting transition from fossil fuel to electricity or renewable energy sources, customers will have less demand for oil and natural gas, which gives rise to market risk. As a support to the emerging electric vehicle industry, the Taiwanese government is currently encouraging installation of charging stations for electric vehicles and scooters, and continues to devise strategies aimed at creating a friendly environment for electric vehicles. Taiwan's path to achieving net zero by 2050 also includes a goal to cease all new sale of non-electric vehicles and scooters by 2040. As fossil fuel cars decrease in number, sale of gasoline, diesel, and automobile lubricant will decrease as a result. Given CPC's high market share in oil and gas products, the transition to electric vehicle will inevitably pose an impact.

Financial impact of transition risk (market)

The current trends toward electric vehicles and low-carbon energy sources will change customers' and consumers' behaviors in such a way that lessens demand for petrochemical products. CPC studied the electrification strategy proposed as part of "Taiwan 2050 Net Zero Roadmap" and predicted that, by 2030, all gasoline- and diesel-powered buses will be replaced with electric buses, and all new vehicles will run on electricity or other low-carbon energy sources by 2040. For this reason, scenarios have been configured to simulate a 50% drop in the market share of conventional fossil fuel cars and a 40%–60% reduction in the sale of automobile fuel between 2035 and 2040. Revenues from sale of oil products totaled NT$421.8 billion in 2022; of which, gasoline amounted to NT$211.3 billion (50.1%) and diesel amounted to NT$113 billion(26.8%). Without considering oil price fluctuations, the transition toward electric vehicles will cause CPC to lose 40%–60% of market share, which is valued between NT$84.5 billion and NT$126.8 billion.

Response strategies for transition risk (market)

CPC plans to expand the coverage of charging stations for electric vehicles and motorcycles, so as to satisfy the ever-growing demand for electric vehicle charging. CPC currently has five smart green energy fuel stations that produce energy from renewable sources to charge consumers' electrical vehicles. To address the risks of changing demand, CPC is evaluating the feasibility of progressively installing car and motorcycle charging stations at all direct petrol stations, and estimates total costs at NT$4.72 billion.

Response strategies

about
NT$ 125.78 billion/year
Financial loss of change in market demand

about
NT$ 4.72 billion/year
Cost of risk response

Analysis and evaluation of climate change opportunities

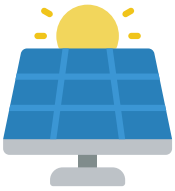
In addition to conducting full-scale scenario analysis on the climate risks it has identified, CPC also performs scenario analysis and evaluation on opportunities that offer potential commercial value, and thereby ensures that the Company keeps up with national policies and market trends while setting sustainability goals and policies, and directs R&D resources in ways that generate maximum value and yield. The chart below shows the three climate change opportunities that CPC identified in 2023. Scenario simulations were performed to estimate commercial viability and opportunity cost of investment.

		Physical/ transition	Timeframe [1]	Likelihood [2]	Financial impact
Climate risk	Increase solar power capacity	Transition	Long-term	High	Moderate
	Develop geothermal energy	Transition	Medium-term	High	Moderate
	Develop carbon storage technology and markets	Transition	Medium-term	High	Significant

» Note 1: Timeframe refers to the time opportunity occurs. Short-term: 0-3 years; medium term: 3-8 years; long-term: 8-28 years.

» Note 2: Likelihood refers to probability of occurrence for the given opportunity.

Opportunities	Opportunity description	NTD

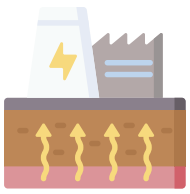


Increase solar power capacity

- CPC has begun installation of solar power systems to meet power requirements on-site and to reduce energy cost. The excess electricity generated can even be sold and directed back to the power grid to support the nation's power supply.
- CPC had increased capacity to 12.946 GW by 2023, and plans to expand total capacity further to 35 GW in 2050.
- Aside from installing new solar power facilities, CPC has also developed smart monitoring and management systems, made ongoing optimizations to solar power maintenance and storage technologies, and improved power generation efficiency as well as the quality of maintenance efforts.
- CPC currently has five pilot smart green energy fuel stations to test the abovementioned technology, and plans to turn more petrol stations into smart green energy fuel stations in the future.

Potential financial opportunities	Opportunity cost
NT$ 2.2284 billion	NT$2.3207 billion

Opportunities	Opportunity description



Develop geothermal energy

- Taiwan is located within the Pacific Ring of Fire, where shallow and deep geothermal energy may reach 33.6GW.
- CPC is currently constructing a 4 MW geothermal plant in Tuchang, Yilan, to support Taiwan's new energy movement, and it makes up one of the 12 key strategies to achieving net zero.
- By leveraging previous experiences, CPC will build a solid foundation for future expansion of geothermal power in Taiwan. Based on CPC's previous investments in geothermal power research, it takes a total of NT$483 million to operate a 4 MW geothermal plant that generates net power of 25.7 million kWh a year.

Potential financial opportunities	Opportunity cost
NT$ 133.5 million	NT$483 million

Opportunities	Opportunity description

Develop carbon storage technology and markets

- CPC has accumulated extensive expertise and experience in onshore as well as subsea excavation and drilling in Taiwan.
- Carbon storage technology not only helps businesses reduce carbon emission, but also offers immense commercial potentials. CPC expects carbon storage capacity to reach 100,000 MT a year by 2025, and increase progressively thereafter to 10 million MT by 2050.
- CPC has invested approximately NT$162 million into developing carbon storage over the last 5 years, and expects to invest another NT$3.7 billion before 2030.

Potential financial opportunities	Opportunity cost
NT$ 30 billion	NT$3.7 billion

2.1.4 Climate change goals, indicators, and management performance

As a response to the international and domestic net zero movement, CPC has placed "High-value Petrochemical, Low-Carbon Emission and Lean-Renewable Energy" at the top of its priority and taken the initiative to develop hydrogen power, geothermal power, solar power, and carbon capture/utilization/storage technologies. CPC has even set goals to reduce carbon emission by 49.5% in 2030 compared to 2005, and achieve net zero by 2050. In order to give stakeholders a better understanding of CPC's response strategies and raise awareness toward climate change governance, CPC decided to resume participation in CDP's climate change questionnaires and ratings starting from 2023, and attained a score of B in 2023 that was higher than the global average (C).

CDP
DRIVING SUSTAINABLE ECONOMIES

B

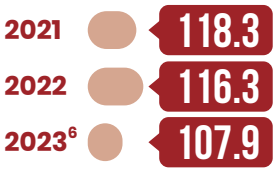
Score of B in 2023 that was higher than the global average

Based on the outcomes of risk identification exercise and international trends, CPC introduces climate change action plans along with short-, medium-, and long-term performance indicators for greenhouse gas management, energy/resource management, water resource management, and pollution control, which are examined regularly for target attainment and progress. CPC also follows the "GHG Protocol" and surveys direct emissions (Scope 1) as well as indirect emissions (Scope 2) of greenhouse gases to determine the effect of its operations and any potential impacts. Outcomes of the greenhouse gas survey have been certified for ISO 14064-1.

As a support to the national carbon reduction goals outlined in the Climate Change Response Act, CPC designated 2005 as the baseline year, in which it measured greenhouse gas emission at 11.58 million MT (carbon dioxide equivalent). CPC has since surveyed Scope 1 and Scope 2 greenhouse gas emissions on a yearly basis, and made calculations by following the Ministry of Environment's Greenhouse Gas Emission Coefficient Sheet for guidelines, or using proprietary coefficients as a priority. GWP values are adopted according to Ministry of Environment's rules. CPC's greenhouse gas surveys are conducted using the operational control approach, and survey outcomes are presented in carbon dioxide equivalent terms. Total greenhouse gas emission in 2023 had reduced by 454,000 MT carbon dioxide equivalent (CO_2e) compared to 2022, as CPC made adjustments to the production strategy in line with market demand. Greenhouse gas emission intensity had reduced for 3 consecutive years between 2021 and 2023. Emission intensity for 2023 was reported at 0.058%.

Scope I

Scope II



Scope III

Total emission (in 10,000 metric tons of CO_2e)

Scope I Emission cap ratio[5]

» Note 1: CPC does not use biofuel

» Note 2: CPC's greenhouse gas survey covers Scope 1 and Scope 2 and 7 major categories of greenhouse gas, namely: carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), hydrofluorocarbons (HFCs), perflourocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3). Scope 2 emission is calculated by adopting a location-based approach.

» Note 3: CPC has designated 2005 as the baseline year for its greenhouse gas reduction targets; emission volume for the baseline year was measured at 11.58 million MT CO_2e.

» Note 4: According to the rules of the Ministry of Environment, Global Warming Potential (GWP) values for 2021 and 2022 were taken from IPCC AR4, whereas GWP values for 2023 onwards were taken from IPCC AR5.

» Note 5: Emission cap is defined using the sources of greenhouse gas emission announced by the central authority. CPC was required to survey and disclose emission sources for the four refineries and petrochemical plants back in 2020; Kaohsiung Refinery was later exempted from the obligation to survey and disclose greenhouse gas emissions in 2020, which made Taoyuan Refinery Plant, Dalin Refinery, and Linyuan Petrochemical Complex the only three facilities that required survey and disclosure of emission sources in 2021. Taichung LNG Refinery and Yongan LNG Refinery were added to the list of facilities requiring survey and disclosure in 2022 and 2023.

» Note 6: CPC introduced ISO 14064-1 greenhouse gas survey system in 2004 and has been surveying greenhouse gas emission on a yearly basis using the operational control approach. 2023 greenhouse gas emission data for the main producing plants (namely Taoyuan Refinery Plant, Dalin Refinery, and Linyuan Petrochemical Complex) and the LNG refineries (namely Taichung LNG Refinery and Yongan LNG Refinery) has been validated by third party, whereas data for all other business sites is self-gathered.

» Note 7: The boundaries of CPC's Scope 3 survey cover greenhouse gas emissions by the entirety of CPC as well as upstream and downstream participants of the value chain. Scope 3 survey includes the following: 1-Purchase of merchandise and services (raw materials), 2-Capital goods, 3-Upstream fuel and energy supply, 4-Upstream transportation and delivery, 5-Waste generated from operations, 6-Business travel, 7-Employees' commute, 9-Downstream transportation and delivery, 10-Processing of goods sold, 11-Use of goods sold, 13-Downstream leasing, 14-Franchise, and 15-Investment. Data is mainly sourced from: Carbon Footprint Information Platform of the Ministry of Environment and SimaPro database.

» Note 8: Scope 3 emission data for 2022 is self-gathered and has not been validated by external party. Self-gathering of Scope 3 emission data for 2023 will be completed by the end of 2024, therefore no update is available as of the publication date of this report.

2.2 Low-carbon Transformation And Circular Economy

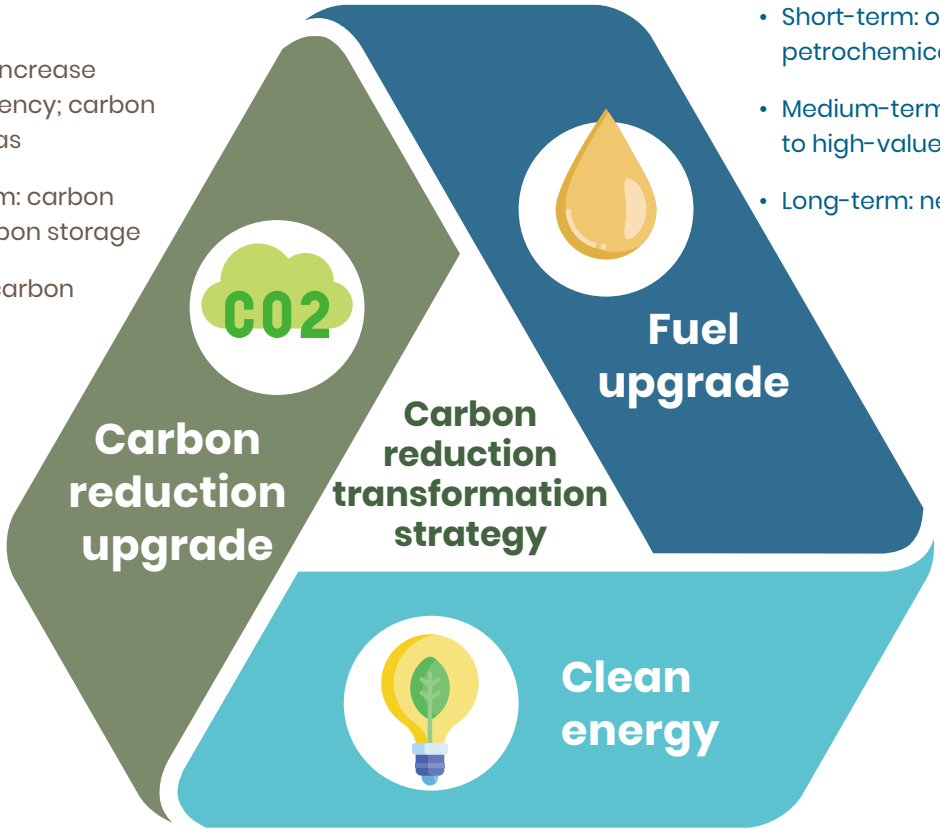
Short-term

- Complete carbon footprint survey for 527 products in 2024
- Introduce internal carbon pricing
- Enhance the added value of petrochemical energy

Medium/long-term

- Carbon emission in 2030 to be 49.5% lower compared to 2005, and CPC strives to achieve net zero by 2050
- Meet diversity goals for the supply of sustainable, green energy sources
- Implement a circular resource supply model
- Realize smart green energy transformation

CPC's low-carbon green energy transformation strategy



- Short-term: increase energy efficiency; carbon neutral oil/gas
- Medium-term: carbon capture/carbon storage
- Long-term: carbon utilization

- Short-term: oil to petrochemical
- Medium-term: petrochemical to high-value materials
- Long-term: new materials

- Short-term: natural gas
- Medium-term: photovoltaic/geothermal/ cold energy
- Long-term: hydrogen power

Budget and outcome of prospective R&D

Item	2021	2022	2023
Budget committed (in multiples of NT$100 million) [1]	25.07	28.98	35.95
R&D expenses as a percentage of net operating revenues[1]	0.28%	0.24%	0.33%
Financial benefits (in multiples of NT$100 mn)	47.07	49.76	51.65
Acquired patents	19	21	20
Published papers	202	218	220
Outcomes delivered (items)	55	75	81

» Note 1: "Budgets committed" into R&D are calculated based on "actual amounts" of research and development expense (including capital expenditure) paid

Focuses and outcomes of prospective R&D

Patent

TAIWAN PATENT I529160

TAIWAN PATENT I788008

TAIWAN PATENT I796204

JAPAN PATENT 7398516

Award

The 20th **National Innovation Award**

2023 **The National Brand Yushan Award**

2023 Taiwan Innotech Expo (TIE) Invention Challenge **Bronze (2 counts)**

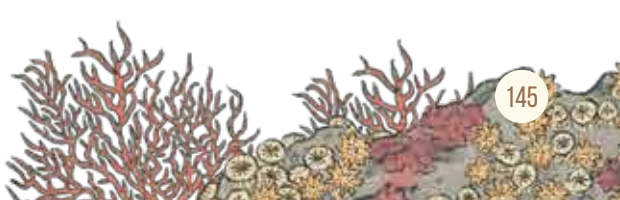
Chinese Petroleum Institute Outstanding Thesis Awards – Excavation and Exploration **Gold, Honorable Mention**

2023 Taiwan Innotech Expo Invention Challenge Sarcodia Extraction Method, Sarcodia Extract and Purposes - **Gold**

R&D category	Key focus	R&D outcome
Assessment and research of domestic and overseas oil mine potential	Study of domestic mine sites	• Through structure restoration and evolutionary analysis while combining 2D basin modeling and previous research outcomes, CPC gained deeper insight into key factors relating to oil deposits in the southwest seas of Taiwan. Furthermore, based on the 3-D seismic wave and seismic facies analyses, CPC was able to identify layers and sections of the deep water area that offer excavation potentials.
	Study of domestic mine sites	• CPC evaluated oil and gas potentials at the East Seram mine site in Indonesia. By gathering new seismic data and updating old data interpretations, the Company was able to identify prospects and estimate the size of the deposit, and provide useful reference on where to position the excavation well. • From the newly obtained drill data, CPC made rolling updates to the 3-D geological profile and attributes model of the Oryx oilfield in Chad. Based on the new model CPC updated the deposit estimate, made plans to increase production through water flooding, and offered excavation suggestions on two new wells to OPIC Africa Branch. Chinese Petroleum Institute Outstanding Thesis Awards – Excavation and Exploration – Gold for Application of Geostatistical Seismic Inversion in B Structure of O Oilfield, Africa Chinese Petroleum Institute Outstanding Thesis Awards – Excavation and Exploration – Honorable Mention for Application of Low Salinity Water Flooding Test for Enhanced Oil Recovery in Oilfields-A Case Study of Oilfield O in Africa
Development and use of renewable energy	Geothermal analysis	• CPC cooperated with the Geological Survey and Mining Management Agency, Ministry of Economic Affairs, on a geological probing project at Mount Datun. The project aims for a depth of 1,350 meters and has accumulated 51.08 meters. The target depth is expected to be reached in the first quarter of 2024. • Developed formula for heat and acid-resistant cement, which can be used for geothermal power development and carbon capture well. **Main focuses: Aside from the metamorphic rock-type geothermal found in Yilan area, Taiwan also has abundant sources of volcanic type geothermal, with Mount Datun offering the highest potential. However, past experiences indicate that geothermal fluids in this location are highly acidic and cause severe corrosion. Through research, CPC hopes to search for non-acid areas or develop acid-resistant materials, and explore the feasibility of developing geothermal power in Mount Datun.**
	Development of photovoltaic (PV) technology	• CPC actively promotes construction of photovoltaic systems and the development of automated maintenance, operation, and management technologies; by 2023 , CPC had constructed more 254 PV sites with rated capacity totaling 12.946 MW.
	Evaluation for the establishment of mobile hydrogen fuel station	• In 2024, CPC cooperated with Linde Group, a producer of chemical gases from Germany, to construct CPC's first mobile hydrogen fuel pilot station in Kaohsiung.

R&D category	Key focus	R&D outcome
Development of new products and new technologies	Development and application of lithium-titanate (LTO) materials	• Factories and machinery for mass production of LTO materials have been completed and are expected to proceed with trial production in 2024.
	Development of biocarbon super capacitors	• CPC completed the trial production of 500 pieces of 1200F 40138 super capacitor, developed 48V modules, and invested into the development of anode materials for modified sodium ion battery.
	Development of environmentally friendly high performance coating materials	• Development of bio-polyol formation technology and low-carbon vegetable oil-based coating materials. • By applying hydrogenation technology on dearomatized solvents, CPC successfully developed environmentally friendly solvent D50 that can be used in paint, coating materials, industrial cleaning agents, and metal processing. **Won 2023 The National Brand Yushan Award**
	Development, trial production, and validation of PPE resin for high frequency substrate	• Developed samples of Generation 1 vs. 1 and 1.5 PPE resin for high frequency substrate, which passed performance tests by copper clad laminate manufacturers to proceed with mass production in metric tons. • Generation 1 and generation 1.5 PPE continue to undergo quality improvements according to the needs of the market and manufacturers. Optimizations are being made with the ultimate goal to reduce production cost and improve competitiveness. For Gen 1 PPE, CPC is able to improve the color of the final product by applying decolorization technology, and the product is currently pending customers' confirmation on color and characteristics. For Gen 1.5 PPE, CPC has reduced costs significantly by replacing the catalysts used in production. **Won Bronze Award in the invention challenge of the 2023 Taiwan Innotech Expo (TIE)** **Acquired Taiwan patent No. I742945**
	Testing of high/ low temperature fuel cell	• CPC created a distributed power generation test site for high/Low temperature fuel cell, and completed the establishment of fuel cell monitoring system and big database.
	Study of carbon capture, utilization, and storage technologies	• Regular measurement near potential storage sites, and developing database of background values. In 2023, CPC completed phase 1 of measurements along the geological measurement line on the western coast of Taiwan, covering a total of four plant sites. 1,221 km of seismic data was gathered and processed. • In 2023, CPC executed the Tiezhenshan Carbon Capture Collaborative Trial Project commissioned by the Energy Administration, Ministry of Economic Affairs, and completed data simulation for CO2 injection as well as an assessment of the storage capacity. Meanwhile, the Company continues to explore and make plans for other carbon storage sites in Taiwan.

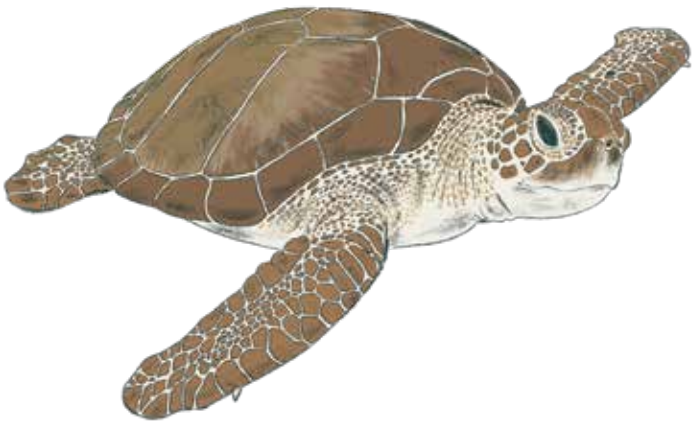


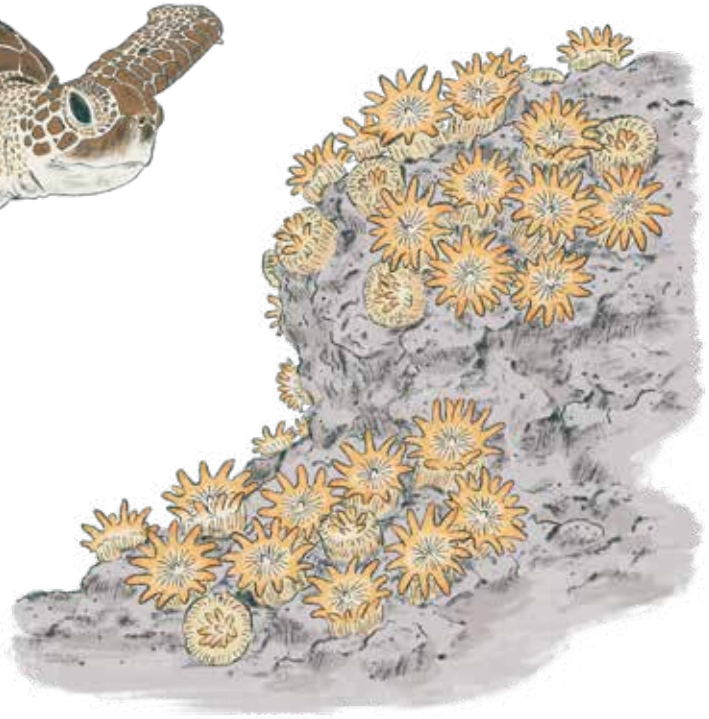


R&D category	Key focus	R&D outcome
Development of new products and new technologies	Smart green energy stations	• CPC had 5 green energy-based pilot smart fuel stations in Northern, Central, Southern, and Eastern Taiwan, where research outcomes were applied to support "power generation," "power storage," "power usage," and "AI-assisted" services.
	Development of AI gasoline performance model	• An AI-assisted approach was developed to help establish relationship between actual fuel consumption and engine performance. Through precise estimation of parameters and probability distribution in the relationship, CPC aims to come up with the most cost-effective formula in terms of actual fuel consumption.
	Development of cosmetics material - MïBlancSol	• MïBlancSol has potential pharmaceutical uses due to its whitening and anti-bacterial properties; it is an auxiliary material to skincare products and supports CPC's business diversification efforts. Acquired Taiwan patent No. I838147 (in 2024)
	Development of production procedures for bioplastic materials	• In support of the nation's plastics reduction policy, CPC completed the development of production technology for 5-hydroxymethylfurfural (5-HMF), a critical precursor to the bio-based polyester material polyethylene furanoate (PEF), and successfully produced 5-HMF products of high purity.
	Trial mass production of C5 fraction	• A trial mass production facility capable of manufacturing 8MT of dicyclopentadiene (DCPD) a year is being constructed; the factory is expected to be completed and ready for trial run in 2024, at which time CPC will begin trial supply of high purity DCPD to downstream partners. Acquired Taiwan patent No. I529160
	RDS waste catalyst recycling and vanadium electrolyte production process	• The residual hydrodesulfurization (RDS) factories of Dalin and Taoyuan Plant recycled waste catalysts to produce vanadium electrolyte, and completed tests on purity, basic performance, and feasibility for energy storage in flow battery.
	Advanced oxidation process (AOP) for air pollution control	• Deodorization and cleaning technologies have been developed for sulfur-intensive production procedures and used in real applications, including the alkaline wash system of the sulfur factory located on the east side of Taoyuan Plant in June 2023 followed by the acidic gas system of the sulfur factory located on the west side of Taoyuan Plant in October 2023, which removed more than 99% of odorous substances including sulfur oxides and 86%–99% of VOCs. This process is expected to be applied to the acidic liquid system at the 2nd Distilling Factory of Taoyuan Plant when the equipment is due for maintenance at the end of the year. Acquired Taiwan patent No. I804353
	Development of bio/energy-efficient lubricant	• Completed development of CPC plant-based cutting oil BC69. The product was launched into the market in February 2023 and later received certification from USDA in March 2023. With biomass content reaching 70%, many businesses have tried the product and praised for the good cleaning performance as well as friendliness to the environment and operators. • Completed development of formula for water-based bio cutting fluid.

R&D category	Key focus	R&D outcome
Circular economy	Adding value to heavy oil materials - development and application of soft carbon derivative for energy storage	• Ongoing promotion and construction of pilot soft carbon production factory • With the development of long-lasting soft carbon-based anode materials and spherical active carbon, CPC hopes to create high value-adding super capacitors and carbon materials for battery **Won Bronze Award in the invention challenge of the 2023 Taiwan Innotech Expo** **Won the 20th National Innovation Award – "Value-adding Carbon Fixation Technology – High Capacity Artificial Graphene-based Anode Material Technology for Electric Vehicles"**
	Development of DeNOx catalyst	• Data on the use of DeNOx catalyst by the three major state-owned enterprises, namely Taiwan Power Company, CPC, and China Steel Corporation (CSC), was consolidated in 2021 in an attempt to build Taiwan's own DeNOx catalyst industry chain. In 2022 , CPC developed renewal technology for plate-type DeNOx catalyst that restores activity by >80%. Old catalysts from CPC factories were renewed with this technology for use at CSC's factories. In 2023, CPC developed renewal technology and procedure for honeycomb DeNOx catalyst using the spent honeycomb DeNOx catalysts at CPC factories, and performed site validation. CPC will continue observing market demand and develop low temperature DeNOx catalysts that are energy-efficient and eco-friendly in the future.
	Turning recycled PET into polymeric dispersant	• CPC developed catalytic depolymerization technology for turning PET into high value-adding applications, thereby increasing the economic benefits of recycling efforts. • Through alcoholysis and functionalization, CPC successfully turned recycled PET into water-based polymers characterized by high polymer count and crystallization resistance, which can be made into titanium dioxide dispersant. **Acquired Taiwan patent No. I788008**
	Use of cold energy - development of algaculture and functional materials	• CPC developed green extraction technologies to help extract sarcodia essence, a functional substance found in algae, for the development of high value-adding products such as Sarcodia Extract Milky Essence, Sarcodia E Acquired Taiwan patent No. I796204 Acquired Japan patent No. 7398516 "Sarcodia Extraction Method, Sarcodia Extract and Purposes" won Gold Award in the invention challenge of the 2023 Taiwan Innotech Expo

R&D category	Key focus	R&D outcome
Development and application of environmental safety technology and new technologies	Application of ground-penetrating radar	• CPC continued using ground-penetrating radar as a non-destructive way to assist subordinate units in surveying underground pipelines. A total of six service requests were completed in 2023.
	Development of green- and sustainability-oriented remediation technology	• In an attempt to improve the existing biomediation technique, CPC experimented with how different mediums and different techniques affect the degradation of oil contaminants, and was able to develop biomediation technology for oil-contaminated groundwater and soil.
	Oil/gas leak forensic technology	• CPC has the forensic technology to determine the pattern of oil or gas leak by analyzing soil gas composition. This forensic technology and the oil/gas leak pattern identification process have been applied at seven fuel stations currently in operation to help confirm/stop the source of the leak in the shortest time possible.
	Application of mobile laboratory	• The mobile laboratory offers technical support for business units. It provides quick tests for in-situ soil total petroleum hydrocarbon (TPH) so that the oil/gas leak pattern can be determined quickly to increase accuracy and efficiency when sorting soil for off-site treatment. The added knowledge also improves management capabilities of individual fuel stations.





2.2.1 High-value Petrochemical transformation

Highlights of smart green energy stations – 2023

48 CHARGERS
EV fast chargers

In support of the 2050 Net Zero policy introduced by the Ministry of Transportation and Communication, CPC has made plans to complete installation of 80 electric vehicle fast chargers in 28 stations between 2021 and 2025. A total of 48 chargers had been installed in 10 stations between 2021 and 2023.

70 BUILDINGS
Green Building Labels

CPC has been promoting "green petrol station" since 2013 by incorporating carbon reduction or ecological solutions. By the end of 2023, a total of 73 petrol stations had obtained green building certification.

4 STATIONS
Smart green energy pilot stations

CPC introduced the concept of smart green energy pilot station in 2019 to validate the outcomes of its research and development efforts and to explore sustainable paths and coexistence solutions for a future smart city. In 2023, CPC designated Hsinchu Guangmin Station as the 5th pilot station.

On April 21, 2023, CPC opened its first self-constructed, self-operated composite EV charging station at the carpark of Hsinchu Guangmin Station. The charging station has four fast charging units each with two charging points, and four slow charging units each with one charging point. They support several types of chargers to meet the needs of different EVs. To achieve optimal operation and management of the charging stations, CPC created a proprietary platform where customers are able to inquire the location of charging station and track the charging status in real-time using CPC PAY.

In the future, CPC plans to incorporate solar power as a form of energy and will develop energy storage systems at the station. By leveraging power generation and energy storage technologies and connection to the smart grid, CPC hopes to power electric vehicles entirely using green energy. The charging rates will also be lowered appropriately to attract more users, thereby promoting CPC's green, positive image and making the station a true pilot for diverse energy sources in the future.

The smart green energy station also combines CPC's proprietary coffee brand CUP&GO and fine car wash to provide a diverse range of services and bring comfort to the charging environment.

ESG benefits of green energy pilot station

With the assembly of "Smart Green Energy Station Project Team" in April 2018, CPC plans to transform conventional petrol stations into integrated smart, green energy platforms that "generate, store, and utilize green energy." Two petrol stations, namely Xinyi Road Station in Chiayi and Qianfeng Station in Tainan, have been chosen as pilots for CPC's smart green petrol station project; together, they validate our research findings and help us explore ways to create smart cities and co-exist with nature.

Chiayi Hsinyi Station

- CO_2 reduction totaled 41,644 kg in 2023, which was equivalent to the amount of carbon absorbed through photosynthesis by 2084 trees in one year
- The station self-produced 83.9% of the green power used on average in 2023, which was 3.1% higher compared to 2022

Group tour at Chiayi Xinyi Road Station

Xinyi Road Station accepts reservations for group tours that introduce visitors to the design, purpose, and hardware of Xinyi Road Station as well as the progress of green energy installation. Through this tour, CPC hopes to convey its emphasis on green energy and energy transformation, and educate visitors on the topic of green energy.

In 2023, were organized a total of

5 tours

Taoyuan Qiedong Station

- Electricity cost per kWh (before system implementation) averaged NT$3.7 in 2020 and NT$3.4 in 2023, representing NT$0.3 of saving per kWh
- Electricity cost (before system implementation) exceeded the contracted capacity for 9 months in 2020, versus only 1 month in 2023

Tainan Qianfeng Station

- Weight of self-produced power averaged 24.4 %
- The station provides fast charging for electric bikes; the charging service was used 3,249 times in 2022, averaging 271 times a month

Group tour at Tainan Qianfeng Station

Tainan Qianfeng Station accepts reservations for group tours that introduce visitors to demonstration of multi-energy integration, promotion of green energy education, and illustration of actual maintenance results.

In 2023, were organized a total of

17 tours

The number of visitors reached

349 persons

Hualien Guangfu Station

The LTO energy storage system allows the station to switch to islanding mode during a power outage, so that it continues to supply power to the emergency needs of the local township or indigenous people's reserve

Highlight: Advance Catalyst Center

In light of the global movement to reduce energy and carbon and the multitude of innovative technologies being developed to achieve net zero emission in Taiwan, CPC assumed its role as the leader of industrial transformation and founded an "Advance Catalyst Center" in 2021 with the goal to support "carbon reduction, energy conservation, environmental protection, and green products" with upgraded refining processes, value-adding chemicals, and carbon capture/utilization solutions. By 2022, the Advance Catalyst Center had successfully developed: CO2 hydrogenation for the production of methanol catalyst, catalysts for efficient removal of NOx, and high value green oil products. The Advance Catalyst Center also combines CPC's chemical products with other petrochemical materials into the development of electronic grade materials for the semiconductor industry.

R&D outcome of Advance Catalyst Center - 2023

Low-carbon economy

Developed CO_2 hydrogenation for the production of methanol catalyst

Energy and environment

Developed and validated honeycomb DeNOx catalyst renewal technology

Green product

Completed deployment and trial run of equipment at the DCPD trial mass production facility

CPC aims to establish its Advance Catalyst Center as the "pilot site for next-generation smart production" and therefore incorporates digital and AI technologies to create a smart production environment that supports the petrochemical industry's transition into "Industry 4.0." In 2022, Advance Catalyst Center incorporated 5G and AIoT technologies and developed a "Bionic Automated Inspection Device" in the form of a dog. This bionic dog performs automated inspections throughout plant premises and sends inspection data to the control center to facilitate cloud computing for smart energy management, workplace safety, personnel safety etc., and is a good example of how AI can be applied in safety monitoring.

The Advance Catalyst Center has been cooperating actively with industry participants, government agencies, and the academia locally and abroad toward accomplishing localized production of catalysts. In 2022, the Advance Catalyst Center completed validation of DeNOx catalyst with China Steel Corporation, developed carbon capture technology with Taiwan Power Company, and invited Nippon Shokubai Co., Ltd. to an exchange of technologies and know-how. With respect to industry-academia collaboration, the Advance Catalyst Center has outsourced studies of DeNOx catalyst, smart factory, and catalyst development to National Taiwan University and Academia Sinica as ways to secure growth for domestic catalyst manufacturers and to support circular economy.

The Bionic Automated Inspection Device is assigned employee ID of "918779," which is pronounced similarly to "Go machine dog"

Three main features of the Bionic Automated Inspection Device

- Helps check dashboard and reduces the need for manpower in patrols
- Checks gas leakage by detecting sound of unique frequency and triggers alarm
- Prevents personnel entry that may damage or contaminate environment, and therefore improves equipment uptime

Real application at water supply plant in 2023

The Advance Catalyst Center held a KPI meeting in 2023 hosted personally by the Chairman, who led the institution to carry out tasks revolving around the center's three main development focuses. In 2023, the center completed installation and trial run for Taiwan's first equipment that captures CO2 from the chimney exhaust into methanol, completed development and validation of the honeycomb DeNOx catalyst renewal technology, and constructed a trial mass production facility for high-quality DCPD. Through innovative technology, the center continues to drive upgrades among domestic industries and contribute to net zero transformation.

Nippon Shokubai Co., Ltd.

- **Details of collaboration:** To evaluate and exchange knowledge on DeNOx catalyst, and improve NOx removal rate for chimney exhaust at CPC's refineries
- **Expected benefits:** Improvement to the DeNOx catalyst technology of the Refining & Manufacturing Research Institute, introduction of high performance DeNOx catalyst, and application on SCR reactor to further reduce chimney exhaust from refineries.

HIGHLIGHT

Composite materials R&D center

MOU for aerospace grade composite materials and components

Through a MOU signed with Metal Industries Research & Development Centre, Eternal Materials Co. Ltd., and Taiwan Space Agency, CPC engages in a strategic collaboration to develop "aerospace grade composite materials and components" while supporting the design and development of national critical composite materials as well as the upgrade of Taiwan's low-orbit satellite industry.

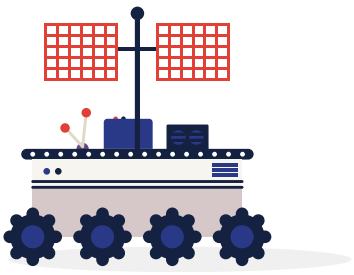
There is high degree of competition for carbon fiber composite materials around the world, which makes it one of the critical next-generation technologies that Taiwan will focus its development efforts on in the future. Taiwan has accumulated strong know-how and had successful experience with composite materials over the years. By having the composite materials center integrate resources that are scattered across individual entities, local businesses will be able to ascend from making carbon fiber to designing an entire system with composite materials. Meanwhile, CPC will be directing its heavy oil to carbon fiber production for added value, emission reduction, and carbon storage benefits, thereby contributing to the sustainable growth of the organization. By leveraging the government's influence, CPC took the initiative to form an industry alliance that not only brings new ideas into old practice, but also creates and shares values during the process. In 2022, the first batch of carbon fiber-reinforced polymers featuring CPC's proprietary asphalt-based carbon fiber materials was produced; this was also the year when CPC and Taiwan Space Agency jointly created "aerospace grade composite barrel," a structural component in high precision optical lens for use on remote sensing satellite, from design to manufacturing. In 2023, CPC's staple fiber products were produced into carbon fiber material and incorporated into the design of small module reactor equipment. With this accomplishment, CPC continues to improve upon its carbon fiber production process, equipment, formula, and products.

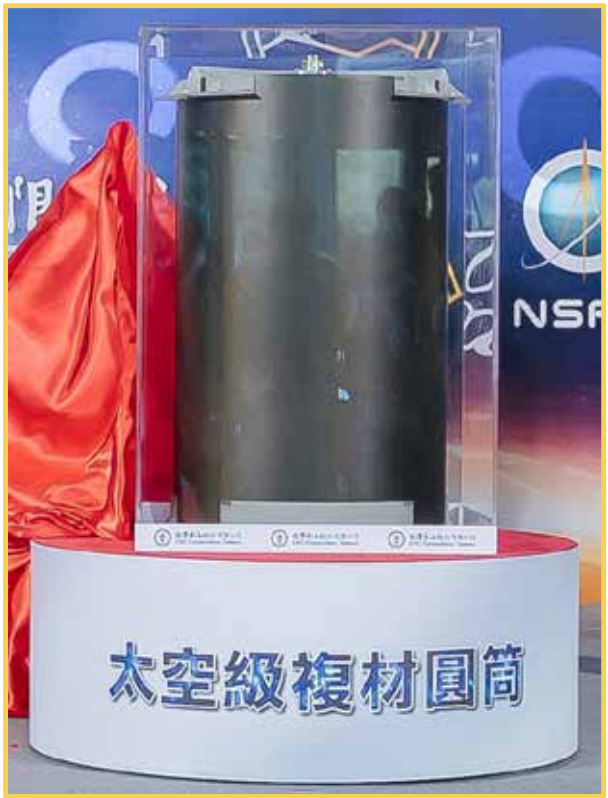
A Member of NARLabs National Space Organization

Aerospace grade composite barrel – a real application of CPC's proprietary asphalt-based carbon fiber

CPC manufactures refined asphalt using patented technologies and proprietary production procedures, and the carbon fiber composites that the asphalt was made into have won the preference of Taiwan Space Agency. All carbon fiber composite structural components previously used in Taiwan Space Agency's satellite projects were made by domestic composites manufacturers using raw materials that were produced overseas. This collaboration represents a significant milestone in the "self-dependency" movement of the domestic satellite industry. With this accomplishment, CPC hopes to further improve the design and technical know-how of national critical composite materials, support the upgrade of Taiwan's low-orbit satellite industry, and strengthen the global competitive advantage of the nation's aerospace industry. In 2023, CPC signed a MOU with Metal Industries R&D Centre, Eternal Materials, and Taiwan Space Agency for the development of components for low-orbit satellite. The MOU promotes the formation of a composite material molding industry alliance, in which CPC contributes its asphalt-based carbon fiber for use in aerospace applications.

Climate change and global warming have made net zero transformation the world's common research focus. CPC will aim to turn this crisis into an opportunity by turning oil and petrochemical products into advanced materials that can be used for electronics, semiconductors, space science, and biotech, and set a good example of COTC transformation. With the development of new materials, CPC hopes to inspire innovation and support sustainability across all industries in Taiwan.



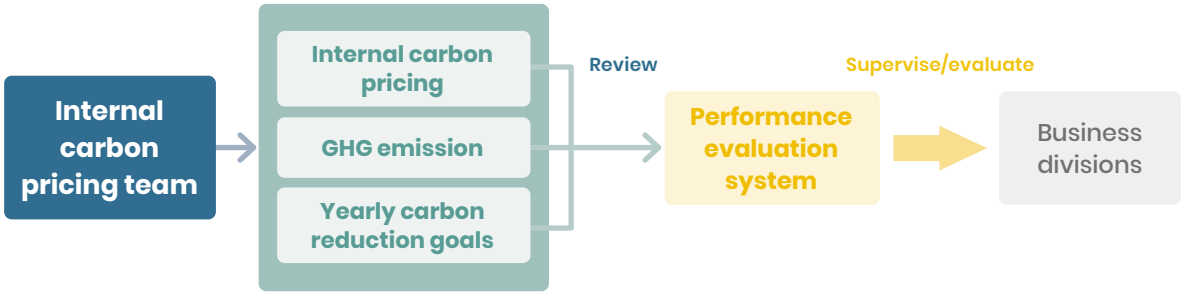


2.2.2 Low-Carbon Emission transformation

HIGHLIGHT

internal carbon pricing

As a response to carbon reduction trends around the world, CPC has set its long-term goal to introduce internal carbon pricing and allocate emission costs to internal operating activities. The IPCC has stated in AR6 that global carbon tax should reach US$300 per MT by 2030 in order to keep temperature rise below 1.5 degrees. After taking into consideration the internal carbon tax rates of reputable businesses in Taiwan and the possible carbon tax rates to be imposed by the nation, CPC has set its own internal carbon tax rate at NT$1,500 per MT.



For phase 1 implementation, CPC has incorporated annual greenhouse gas reduction goals into the performance evaluation system and introduced methods to calculate carbon tax per unit of refined product for each business segment. This performance management approach will provide internal departments with the incentive to reduce carbon and progressively reduce carbon tax per unit of production. The system was in the planning stage in 2022 and was first used for performance evaluation in 2023. Outcomes of the performance evaluation are forwarded to various business segments for decision-making and integrated management of carbon cost, which contributes to CPC's progression toward net zero by 2050.

Association of carbon pricing system with internal performance evaluation

New performance measurements on "carbon management" have been introduced for annual performance evaluation at all responsibility centers of each business division. Calculation for "carbon management" performance takes into account the production (refinery, sales) volume, GHG emission, and energy/carbon reduction plan of each department, as well as the Company's GHG emission targets for the year.

Results-linked performance evaluation

The responsibility center of every business division has included "carbon management" as one of the measurements for performance evaluation, and assigned appropriate weight based on the nature of business activities. Outcomes of the performance measurement will directly affect overall performance of the business division for the year.

Goal-setting and targets for each business division/unit

When setting "carbon management" performance measurements, each business division is required to take into consideration the differences in business activities and adopt an independent approach for performance evaluation. Targets for the next year should be set based on data in the last 3–5 years.

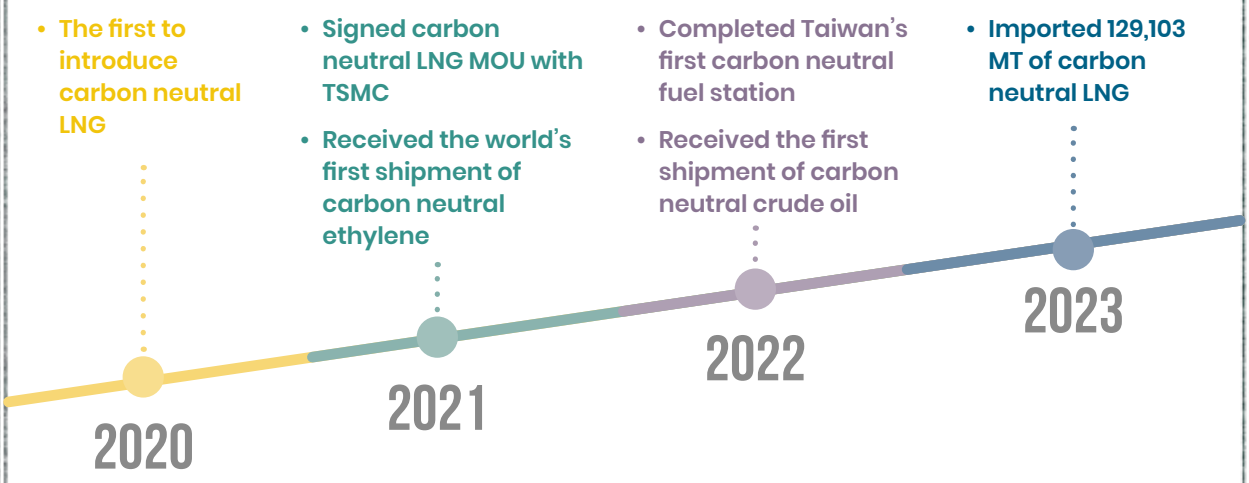
Incentives for top carbon reduction performers

Outcomes of the "carbon management" performance measurement will directly affect the overall performance of the business division for the year. Departments that deliver favorable carbon reduction performance are rewarded with annual performance credit and bonus.

HIGHLIGHT

Pioneer in carbon neutrality

CPC's carbon neutral milestones



CPC supports the global net zero movement and makes extensive commitments to achieve carbon neutrality. In addition to engaging international supply chain partners for carbon reduction, CPC also makes use of the carbon offset system to fully offset the amount of carbon produced. In 2020, CPC made its first import of carbon neutral LNG and was able to obtain certification for PAS 2060 – Carbon Neutrality Standard and Certification the next year. By 2022, CPC had made plans to import carbon neutral ethylene and carbon neutral crude oil, and constructed the world's first carbon neutral fuel station; all of which are indicative of CPC's resolve to ensure business continuity, create a friendly environment, support a low-carbon lifestyle, and realize a sustainable supply chain.

Persistent import of carbon neutral LNG

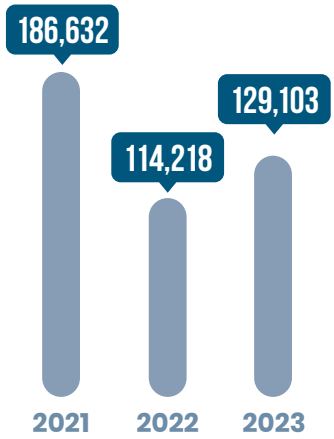
Using the carbon neutrality system, greenhouse gases emitted from the mining to the use of LNG are offset against carbon credits that meet the "Verified Carbon Standard (VCS) and Australian Carbon Credit Unit (ACCU)." These carbon credits are sourced from peatland restoration in Indonesia and forest preservation project in Australia, and the amount of greenhouse gases to be offset have been validated by independent institution – Verra. These actions are indicative of CPC's ambition for energy transformation.


Source of picture: Shell

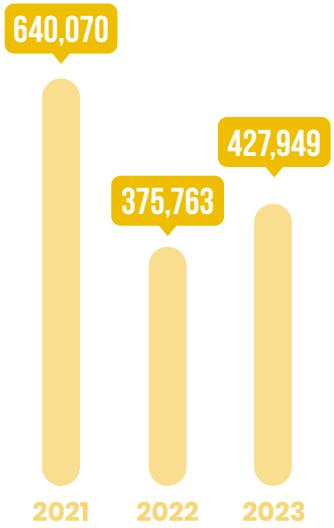

Source of picture: Chevron

CPC worked with Shell to import two carbon neutral LNG vessels.

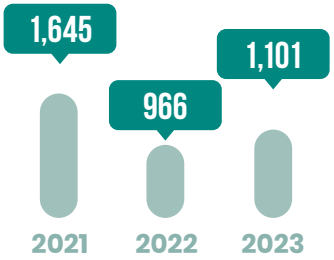
Since 2020, CPC has been importing carbon neutral LNG, showcasing real examples of carbon neutral products, and commercializing carbon neutral products to help industry participants achieve carbon neutrality. Today, CPC cooperates with many domestic enterprises and helps them connect with carbon reduction standards around the world to create a low-carbon and sustainable living environment.



Volume of carbon neutral LNG imported (MT)



Volume of carbon emission offset against carbon credit (MT)



Number of times the yearly carbon absorption capacity of Da'an Park [1]

» Note 1: Carbon absorption capacity of Da'an Park is approximately 389 MT a year.

Carbon neutral LNG – Explanation of the carbon neutrality system

Carbon emission volume

Production end

- Natural gas production
- Pipeline transfer
- Liquefy
- Transport by ship
- Gasification
- Domestic pipeline transfer
- End use (combustion)

User end

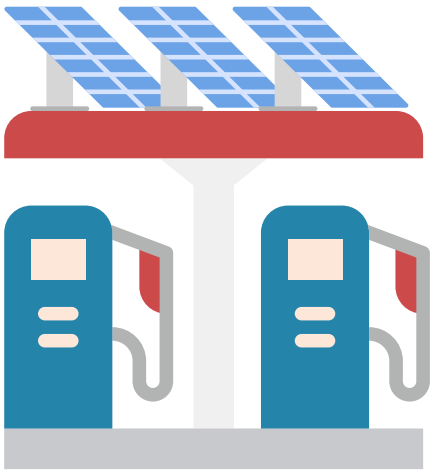
« Carbon neutral »

Pioneer of carbon neutral fuel station in Taiwan; contributor to net zero lifestyle

CPC is committed to using green energy as a means to carbon neutrality. Its smart green energy fuel station located at Qianfeng Road, Tainan, passed PAS 2060:2014 carbon neutral certification in March 2022, which made it the first carbon neutral fuel station in Taiwan and set a key milestone in terms of green energy development. This fuel station has been planned with the intent to lower greenhouse gas emission in the first place, and was designed and constructed after taking into consideration detailed data including: emission source, power usage, oil usage, water usage, air conditioning equipment, employee count, work hours, renewable energy generation, and carbon reduction measures to achieve effective reduction in greenhouse gas emission.

Tainan Qianfeng Station was Taiwan's first carbon neutral petrol station

In 2021, CPC's Tainan Qianfeng Station initiated a series of greenhouse gas surveys and carbon neutrality procedures that involved conducting greenhouse gas surveys in accordance with the ISO 14064-1 standards and utilizing carbon reduction measures and carbon credits to offset emissions. In 2022, the station purchased locally produced carbon credit (representing power generated by Zhangbin Wind Power Plant) through Gold Standard, a voluntary carbon credit platform, to offset local emissions, thereby making it the first carbon neutral fuel station in Taiwan and the world's first carbon neutral fuel station to adopt the PAS 2060 standard and complete 3rd-party certification by British Standards Institute (BSI). In the future, CPC will aim to increase the number of fuel stations that adopt carbon footprint calculation, and take pragmatic steps toward fulfilling its carbon reduction commitment, increasing product visibility, and improving market competitiveness.



Passed PAS 2060:2014 carbon neutral certification

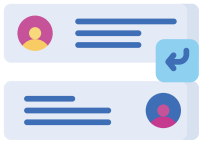
Carbon neutrality system	Volume of greenhouse gas offset (MT)
Natural gas fuel cell Rooftop solar power station	25
Purchased carbon credit from Zhangbin Wind Power Plant for offset	99

HIGHLIGHT

Product carbon footprint survey

Accomplishments of CPC's product carbon footprint survey

Identified carbon emission hot spots and increased energy efficiency



Responded to consumers' demand for green products

Prepared for entry into international markets and participation in carbon trading

Introduced product life cycle survey for enhanced carbon management

Established baseline for carbon reduction designs for subsequent products

Developed sample for domestic carbon survey; saved carbon survey cost

Built comprehensive carbon footprint data on local products

Led the oil industry in environmental surveys and coordinated with industry participants to create a sustainable value chain

CPC has been surveying and verifying the carbon footprint of its main products in order to meet supply chain requirements, disclose carbon emission data, and analyze emission hotspots as part of its sustainability practice. Using the methods introduced in ISO 14067, CPC takes quantitative measurements of greenhouse gases emitted in different stages of the product life cycle; this data not only facilitates the calculation of the product carbon footprint throughout a supply chain, but also allows analysis of emission hotspots that internal departments can make use of to identify areas where emissions can be reduced, and devise effective reduction plans and risk control measures accordingly.

Stage 01 2022

Chemical Solvent Business	Paint solvent 100, paint solvent 150, paint solvent 200, paint solvent 230
Petrochemical Business Division	**Controlled substances of the MOEA** Ethylene, propylene, butane, benzene, toluene, xylene, and 10 by-products
Lubricants Business Division	Water Resistant E.P. Grease No. 1

Completed survey and 3rd-party validation for 21 products in 2022

In 2023, the Exploration and Production Department and LPG Business Division completed product survey and 3rd-party validation

Stage 02 2023

Chemical Solvent Business	**56 types of packaging** Cleaning naphtha, multi-purpose solvent, rubber solvent, hexane mixture, hexane, industrial grade heptane, eco-friendly cleaning naphtha, cleaning solvent C30, eco-friendly cleaning solvent D30, dearomatized eco-friendly solvent D50, dearomatized eco-friendly solvent D80, paint solvent, gasoline cleaner, diesel cleaner, water-based additive, oil-based additive
Lubricants Business Division	**411 products** Industrial fuel, vehicle fuel, marine fuel, lubricating grease, car wax, etc. **Water Resistant E.P. Grease No. 1 obtained carbon label certificate from Ministry of Environment**
Exploration and Production Business Division	Natural gas, condensate oil, LPG, propane
Refining Business Division	**38 products** Gasoline, diesel, aviation fuel, fuel oil
Oil Product Marketing Division	**Ongoing:** CPC expects to survey carbon footprint on the transportation, storage, and sale of 12 oil products
Natural Gas Business Division	1 LNG Carrier
LPG Business Division	LPG (imported gas), propane/butane mixture, propane, butane, autogas

Completed carbon footprint survey for 527 key products in 2024

Product carbon footprint survey was carried out over several phases; the first phase began in 2022, in which CPC completed carbon footprint survey and third-party validation for 21 products including petrochemical materials, chemical solvents, and lubricants. In the second phase, CPC plans to complete carbon footprint survey for 527 of the Company's main products in 2024. Data will be updated continuously in the future to keep track of changes in carbon emission.

Water Resistant E.P. Grease No. 1 Obtained carbon label certificate from Ministry of Environment

2.2.3 Lean-Renewable Energy transformation

Ongoing investments are being made to the development of photovoltaic systems, geothermal power, and natural gas and cold energy supply. CPC has also ventured into hydrogen power, and will explore viable business models given the domestic demand, regulations, and supply chain availability to transform into a supplier of clean energy. Success of the clean energy transformation will make each CPC fuel station a supply center for diverse energy sources.

HIGHLIGHT

Reuse of cold drainage (diamond water)

ESG benefits of cold energy

Economic benefit
Costs saved or values created

Liquefaction of gas
1.4823
million
Saved

Chilled water air conditioning system
1,158
million
Saved

Environmental benefits
Reduction of CO_2 emission

Chilled water air conditioning system
1,850
MT

Aquaculture pump power savings from use of diamond water
927.6
MT

Social benefits

- Prevents fish farmers from drawing groundwater, which reduces the risk of land subsidence
- Brings distinctive advantages to remote townships.
- Assists government and academic institutions in the application of research outcomes.
- Declutters pipelines along the coastline and improves coastal scenery for tourism benefits.

HIGHLIGHT

Hydrogen power roadmap

According to the nation's 2050 net zero goal, Taiwan aims to generate 9% to 12% of power from hydrogen by 2050, which was why CPC assembled a Hydrogen Power Team in March 2021 to oversee the hydrogen power business and to keep track of hydrogen power development in countries around the world, thereby helping local players connect with the international market.

Direction of hydrogen power research

Study of domestic and foreign hydrogen power regulations Collaborated with CSC on the investment of Steel-Petroleum Joint Factory → **Steel refinery with hydrogen power** → **Quantitative hydrogen power study** → **Blending hydrogen with natural gas Combustion research**

In support of the government-assigned mission to supply hydrogen power, CPC will be constructing a pilot hydrogen fuel station in the short term to signify the nation's move toward hydrogen power and to develop the necessary technologies. Medium- and long-term plans have been made to develop production capacity for blue hydrogen, whereas hydrogen power transfer and storage facilities will be constructed in accordance with the national spatial plan to supply hydrogen to industrial users as well as vehicles.

Future hydrogen power plans

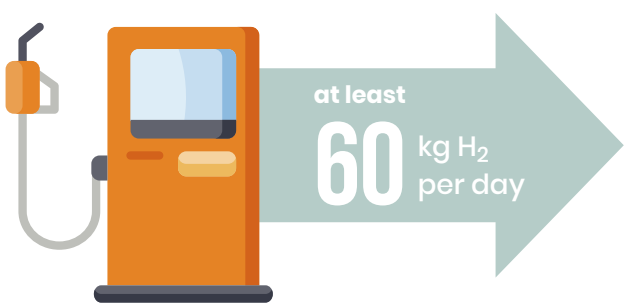
Constructed pilot hydrogen fuel station

Self-produced blue hydrogen; Constructed hydrogen power-related storage facilities

Short-term | **Medium/long-term**

CPC has been constructing hydrogen fuel stations in support of the government's push for hydrogen-powered vehicles. Taiwan's first pilot hydrogen fuel station is expected to be situated in the southern area and completed for operation by the end of 2024. Additional hydrogen fuel stations may be constructed depending on the routes that the central and local governments have planned for hydrogen fuel buses. With regards to the supply of hydrogen power, CPC will start with blue hydrogen before transitioning into green hydrogen, and produce blue hydrogen through a combination of steam methane reforming (SMR) combined and carbon capture and storage (CCS) until far ocean transportation of hydrogen power is commercialized.

The first pilot hydrogen fuel station in Taiwan



2.3 Energy / resource Management and Transformation

2.3.1 Use and management of energy

Being Taiwan's largest oil and gas supplier, CPC responds to the call for low-carbon transformation around the world and supports the nation's net zero emission goals. We are well-aware of our responsibilities with regards to environmental protection and sustainability, which is why we actively take part in carbon reduction, introduce carbon neutral LNG, and explore ways to improve energy efficiency. We consume electricity, natural gas, steam, fuel gas, petroleum gas, and fuel oils. The total 2023 energy consumption was 79.9 million GJ, with the highest heating value from fuel gas. Output of CPC products totaled 141.79271 million kL in 2023; energy intensity was calculated at 0.563 GJ/ kL in 2023, and compared to the 0.551 GJ/ kL energy intensity reported for 2022, this represented a 2.13% increase.

Use of energy source (thermal value) by the three refinery/ petrochemical plants in 2021-2023

Unit: 10 million GJ ($GJ=10^9J$)			2021	2022	2023
Non-renewable energy	Direct energy consumption	Natural gas	2.23	2.22	2.39
		Fuel gas	3.95	3.94	3.26
		LPG	0.003	0.014	0.005
		Low sulfur fuel oil 0.5 %	0.65	0.36	0.24
		Carbon residue	1.48	1.69	1.48
		Total heating value	8.31	8.23	7.36
	Indirect energy consumption	Purchased electricity	0.58	0.59	0.55
		Purchased steam	0.10	0.11	0.083
		Total heating value purchased	0.67	0.7	0.63
Total non-renewable energy			**8.98**	**8.93**	**7.99**
Renewable energy	**Solar power**		**1,286,357**	**2,931,341**	**5,898,240**

» Note 1: Energy Consumption = Fuel Usage * Unit Heating Value

» Note 2: Data on non-renewable energy covers energy used by the three refineries for production activities, whereas data on use of renewable energy provided by green power refers to the entire company.

» Note 3: Unit thermal values are as follows: (1) 8224-9000 Kkcal/KS for natural gas, (2) 4406-7962 Kkcal/KS for fuel gas, (3) 6,635 Kkcal/KL for LPG, (4) 9,200-9844 Kkcal/KL for low sulfur fuel oil (0.5%), (5) 9,580 Kkcal/TON for carbon residue, (6) 860 Kkcal/MWH for purchased electricity, and (7) 724 Kkcal/TON for purchased steam

Use of renewable energy

Pursuant to "Regulations for the Management of Setting up Renewable Energy Power Generation Equipment of Power Users above a Certain Contract Capacity," a sub-law of the Renewable Energy Development Act, CPC has six units that are subject to governance, and the mandatory capacity of renewable energy for each unit is explained in the following chart.

CPC actively sources suitable land for the construction of solar power systems. The Company invested NT$135.3 million into the development of photovoltaic technology in 2023, and by the end of 2023, it had completed 254 photovoltaic (PV) sites with rated capacity of 12.946 MW (excluding 709 kW that were leased out) located throughout Taiwan and offshore areas, including the rooftops of fuel stations, oil supply centers, refineries, petrochemical plants, and rooftops of office buildings. These PV stations generated 146.02 million kWh of renewable energy in 2023; the energy used to be sold to Taiwan Power Company, but in 2023 most of which was self-consumed. As of the end of 2023, CPC had 252 PV stations that generated energy for self-consumption; 20 of which had obtained renewable energy site certifications, and 7,260 renewable energy certificates were generated. In the future, CPC plans to expand renewable energy capacity to 12.132 MW in 2024 and to 25.078 MW in 2025.

Mandatory renewable energy capacity for CPC plant sites

Threshold on contracted power usage	Contracted user		Contracted power usage (MW)	Capacity of existing equipment - 2023 (MW)	Required capacity by 2024 (MW) (9% of contracted power usage)
Unit: (MW)					
5,000 kW (5 MW) and above	Refining Business Division	Dalin Refinery	140	0.428	12.6
	Refining Business Division	Taoyuan Refinery Plant	42	1	3.78
	Petrochemical Business Division	Linyuan Petrochemical Plant	20	1.672	1.8
	Natural Gas Business Division	Yongan LNG Refinery	20	0.844	1.8
	Natural Gas Business Division	Taichung LNG Refinery	14.50	0.524	1.305
	Refining Business Division	Kaohsiung Refinery	8	0.932	0.72
	Others	CPC is not an intensive electricity user	-	7.546	-
	Total capacity			**12.946**	**22.005**

» Note: CPC is entitled to early bird privilege (10% deduction) for meeting the requirements of "Regulations for the Management of Setting up Renewable Energy Power Generation Equipment of Power Users above a Certain Contract Capacity" by 2024, and the mandatory capacity has been presented to reflect this goal

2021
- Officially founded the **Solar Power Operations Center**
- Developed proprietary operations management technologies; conducted **PV project evaluation and planning**

2022
- Completed **PV systems** at Zhongshan Hall Carpark of Kaohsiung Refinery and on the LTO bus garage
- A total of **246 PV stations** are managed under the "Cloud-based Solar Power Monitoring, Maintenance and Management System"; **90 of these stations** have been inspected and reported before warranty expiry
- Continued optimization and update of the **Solar Power Monitoring, Maintenance and Management System** and developed standard operating procedures for maintenance works

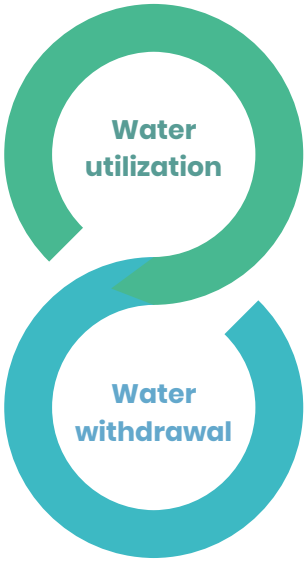
2023
- Established Northern Taiwan repair office in Taoyuan to maintain CPC's solar power sites
- **Trained maintenance personnel** to build up the foundation for the Company's future business transformation

2024
- **Reached the mandatory capacity needed to claim early bird privilege (10% deduction) under "Regulations for the Management of Setting up Renewable Energy Power Generation Equipment of Power Users above a Certain Contract Capacity"**

Goals: Transition into an energy company of diverse services including oil and electricity.

2.3.2 Water consumption and management

CPC has developed a comprehensive water resource management system and adopted a diversified water resource utilization strategy to address the impact of climate change on water resources from two perspectives: "water recycling and reuse" and "access to water resources." Following the implementation of water resource management, all uses of water are subject to water impact assessment and do not pose any material impact on the water source.



CPC plans and maintains records of water usage in accordance with Water Resources Agency's Regulations Governing Approval of Water Usage Plan. Furthermore, CPC has a team of researchers that persistently explore ways to optimize the recycling and reuse of production water using high performance equipment. All petrol stations Rainwater recovery systems have also been installed at petrol stations

CPC has been expanding its access to water, and supports the government's strategies on water recycling plants by having Dalin Refinery purchase 10,000 MT of reclaimed water daily from Kaohsiung Linhai Reclaimed Water Treatment Plant starting from 2022. Taoyuan Refinery Plant, too, has signed an agreement with Taoyuan City Government to purchase 10,000 MT of reclaimed water daily after completion of the new reclaimed water treatment plant.

Use of water resource at the 3 refineries - 2023

8.95 times

Number of times water is used

98%

Water recycling rate

Use of water resource at the three refineries – 2023

CPC committed only one violation of the Water Pollution Control Act in 2023, which was reviewed and rectified in a timely manner.

Violating department

Taoyuan Refinery Plant

Cause of penalty

Water pollution

Fines and penalties

NT$33,000 in fines plus a 2-hour environmental seminar

Solutions or improvements

- Cleaned oil sludge in ditch RD-03 and deployed ropes made from oil-absorbing cotton.
- Prior to a heavy rain alert, all factories would check in-plant ditches for blockage and oil stains, and arrange to have tank trucks remove blockage.

Water usage and impact assessment

To enable better control over the water constraints and risks of water usage at various plant sites, CPC has adopted the water risk assessment tools developed by World Resources Institute (WRI) and devised water risk management strategies after taking into consideration the local water resources, stability of water supply, regional supply and demand, and risks of water usage identified for critical operations and sites. Using the WRI Aqueduct Tool, CPC considers the stability of water supply and regional supply and demand to be of low risk at critical operations and sites.

Water user	Water constraint	Water supplier	Water treatment provider	Location of discharge
Dalin Refinery	Low	1. Taiwan Water Corporation(Fresh water) 2. Daliao Water Station (groundwater) 3. Linhai Reclaimed Water Treatment Plant(Reclaimed water)	**1. Effluents from living activities:** internal water treatment plant (level 2 treatment) **2. Industrial effluent:** internal water treatment plant (level 3 treatment)	**Discharge into the ocean** (Type B maritime space) **Directed into Combined Wastewater Treatment Plant** (level 3 treatment)
Taoyuan Refinery Plant	Low	1. Northern Region Water Resources Office, Water Resources Agency (raw water from Taoyuan Canal) 2. Taoyuan City Government (groundwater)	**1. Effluents from living activities:** internal water treatment plant (level 2 treatment) **2. Industrial effluent:** internal water treatment plant (level 3 treatment)	**Nankan River** (Category C surface water from river)
Linyuan Petrochemical Complex	Low	Taiwan Water Corporation (Fresh water)	**1. Effluents from living activities:** internal water treatment plant (level 2 treatment) **2. Industrial effluent:** internal water treatment plant (level 3 treatment)	**Directed into the water treatment plant of Linyuan Industrial Park → Discharged into ocean** (level 3 treatment)

» Note: WRI Aqueduct Tool assesses water risks; "Low" indicates adequate water resource (http://www.wri.org/)

Data on water resources drawn and recovered by site

Dalin Refinery

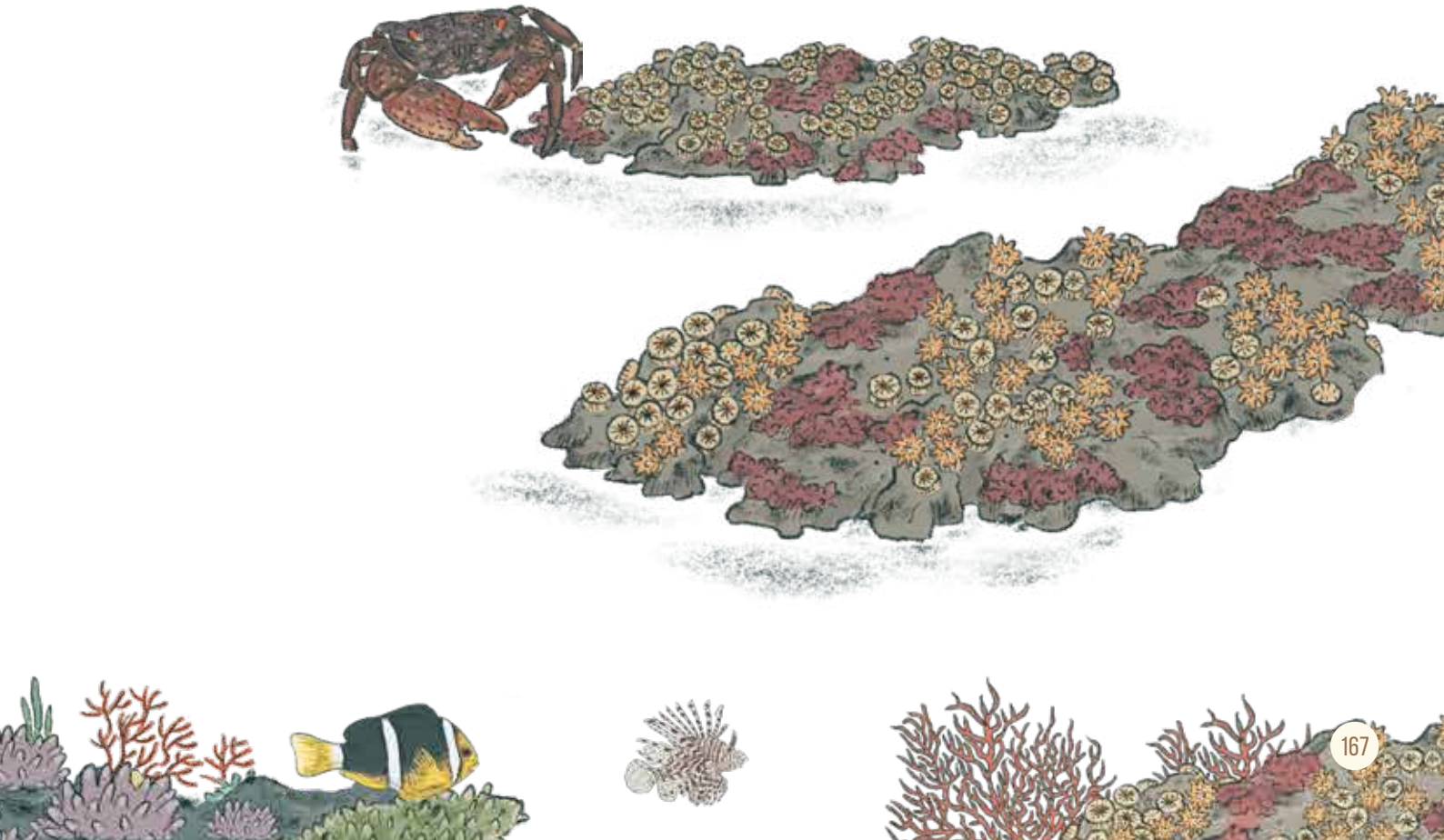
Unit (ML)		2021	2022	2023
	Total volume	**613,410,723**	**625,665,530**	**569,727,950**
Surface water (tap water, river water, irrigation system water)	Water drawn	8,098,122	5,574,819	4,474,828
	Proportion	1.32%	0.89%	0.79%
Groundwater (well water)	Water drawn	3,528,057	2,952,148	2,503,072
	Proportion	0.58%	0.47%	0.44%
Reclaimed water	Water drawn	0	3,637.891	3,645,385
	Proportion	0	0.58%	0.64%
Reclaimed Water	Stormwater	51,181	52,790	47,669
	Production effluent (Water reclaimed through effluent recycling equipment)	1,248,322	817,030	422,345
Others	Volume of coolant water cycled	594,772,775	609,224,208	555,709,737
	Volume of condensate reclaimed	1,658,732	2,063,685	1,940,913
	Acidic water reclaimed	327,153	320,725	193,005
	Other water reclaimed	3,726,381	1,022,234	790,996
	Total volume reclaimed	**601,784,544**	**613,500,672**	**559,104,665**
	Proportion	**98.10%**	**98.06%**	**98.14%**

Taoyuan Refinery Plant

Unit (ML)		2021	2022	2023
	Total volume	**279,354,448**	**269,222,212**	**288,527,678**
Surface water (tap water, river water, irrigation system water)	Water drawn	5,368,348	4,880,939	5,390,384
	Proportion	1.92%	1.81%	1.87%
Groundwater (well water)	Water drawn	1,323,272	1,228,059	1,027,823
	Proportion	0.47%	0.46%	0.36%
Reclaimed Water	Stormwater	0	0	0
	Production effluent (Water reclaimed through effluent recycling equipment)	0	0	0
Others	Volume of coolant water cycled	269,291,160	260,036,962	278,883,970
	Volume of condensate reclaimed	2,281,628	2,051,181	1,895,492
	Acidic water reclaimed	305,034	289,120	273,577
	Other water reclaimed	785,006	735,951	1,056,432
	Total volume reclaimed	**272,662,828**	**263,113,214**	**282,109,471**
	Proportion	**97.60%**	**97.73%**	**97.78%**

Linyuan Petrochemical Plant

Unit (ML)		2021	2022	2023
	Total volume	**805,122,260**	**807,107,392**	**748,931,872**
Surface water (tap water, river water, irrigation system water)	Water drawn	14,565,702	13,172,000	13,361,372
	Proportion	1.81%	1.63%	1.78%
Groundwater (well water)	Water drawn	0	0	0
	Proportion	0.00%	0.00%	0.00%
Reclaimed Water	Stormwater	0	0	0
	Production effluent (Water reclaimed through effluent recycling equipment)	646,518	497,258	423,229
Others	Volume of coolant water cycled	735,226,734	740,393,324	683,340,050
	Volume of condensate reclaimed	3,133,029	3,168,706	3,217,541
	Acidic water reclaimed	0	0	0
	Other water reclaimed	51,550,277	49,876,104	48,589,680
	Total volume reclaimed	**790,556,558**	**793,935,392**	**735,570,500**
	Proportion	**98.19%**	**98.37%**	**98.22%**



Water resource management measures of CPC plants

1

Reduce cooling water loss

Renew water trays and honeycomb water deflectors to lower the volume of cooling water lost through evaporation from 0.1% to 0.003%, which lessened the need for cooling water refill.

2

Improve boiler water quality

Produce water with ultrapure water equipment to increase water intake and reduce effluent per cycle. Treat raw water with electrodialysis reversal (EDR) equipment to reduce water conductivity and total hardness, in order to increase the water intake of ion-exchange resin and thereby reduce boiler water consumption through improved quality of water intake

3

Improve water for fire-fighting

Stagnant water for fire-fighting is prone to deteriorate. Flushing water surface with backwash water for fire-fighting to inhibit algae growth can maintain water quality for a longer time.

4

Save production water

Install condensate monitoring and diversion equipment to keep track on condensate quality at all times to prevent condensate from contamination and non-reusability. Reclaim condensate to the water tower with solenoid valves, reclaim low-pressure steam with the de-aerating feed tank to recover heat energy and reclaim condensate.

5

Reclaim and reuse effluents

Production wastewater after treatment is transported to the park wastewater treatment plant. Some effluents can be reclaimed and reused in sludge dehydrators or incinerator wet scrubbers. After sedimentation and sediment removal and sand filtration, some effluents from sewage can be used in washing gutters and oil tanks.

6

Purchase of reclaimed water

All CPC plants take the initiative to purchase reclaimed water from the government's reclaimed water treatment plant. The three refineries currently recycle 98% of the water used on average, and continue to purchase reclaimed water for optimal water resource management. Dalin Refinery has been purchasing 10,000 MT of reclaimed water daily from Kaohsiung Linhai Reclaimed Water Treatment Plant since 2022; Taoyuan Refinery Plant, too, signed an agreement with Taoyuan City Government in October 2020 to purchase 10,000 MT of reclaimed water daily once the reclaimed water treatment plant of Taoyuan City Government Northern Water Recycle Center is completed (the reclaimed water treatment plant is expected to commence water supply starting from 2024).

Water conservation progress

Water used, recycled, and reused by the 3 plants in the last 3 years

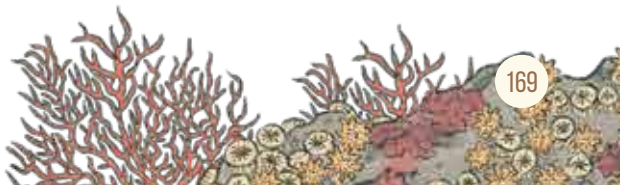
	Unit(MT)	Dalin Refinery	Taoyuan Refinery Plant	Linyuan Petrochemical Plant
2021	Raw water replenished (A)	11,626,179	6,691,620	14,565,702
	Volume of water reclaimed(B)	601,784,544	272,662,828	790,556,558
	Water Reclamation Rate(B÷[A+B])	**98.1%**	**97.6%**	**98.2%**
2022	Raw water replenished (A)	11,626,179	6,691,620	14,565,702
	Volume of water reclaimed(B)	601,784,544	272,662,828	790,556,558
	Water Reclamation Rate(B÷[A+B])	**98.1%**	**97.6%**	**98.2%**
2023	Raw water replenished (A)	10,623,285	6,418,207	13,361,372
	Volume of water reclaimed(B)	559,104,665	282,109,471	735,570,500
	Water Reclamation Rate(B÷[A+B])	**98.14%**	**97.78%**	**98.22%**

2.4 | Biodiversity

2.4.1 Commitment, management framework, and goals of natural governance

In addition to being a strong pillar for the nation's energy supply, CPC also plays a key role in green energy transformation in Taiwan. As a support to the government's goal to generate 50% of electricity from natural gas by 2025, CPC began construction of the Third LNG Terminal in Guantang, Taoyuan. CPC also founded an independent 3rd-party organization called "Guantang Industrial Park (Port) Ecosystem Preservation Committee" as a response to the petition of environmental protection organizations to oversee preservation of the algal reef ecosystem and Class 1 endangered coral – polycyathus chaishanensis. In addition to the above, CPC also commits significant efforts into supporting biodiversity preservation conventions around the world, and allocates manpower as well as resources persistently into maintaining ecosystems near other plant sites. CPC currently conducts ecological surveys according to guidelines of The Taskforce on Nature-related Financial Disclosures (TNFD) and the LEAP (Locate, Evaluate, Assess, Prepare) approach for assessing risks and opportunities, and will observe the TNFD framework to develop more comprehensive range of biodiversity indicators and goals.





CPC's biodiversity actions

Ecological survey

Using assessment tools available locally and abroad, CPC conducts ecological surveys on marine and terrestrial life near all of its business locations nationwide and builds a database to keep track of how business operation impacts or is dependent upon nature

Identification of risks and opportunities

Based on CPC's dependency and impact on nature, the Company analyzes how business operation may be prone to risk or give rise to opportunities

Strategy and management

Depending on the industry it operates in and its impact on key natural environments, CPC devises appropriate impact mitigations, operational goals, and management indicators

Negotiation and communication

Learn issues relating to how business operation impacts nature that are of concern to stakeholders, and enhance communication and problem-solving with all stakeholders

Organization and responsibilities

Guantang Industrial Park (Port) Ecological Conservation Committee

Members

- Natural Gas Business Division
- LNG Project Division
- Department of Environmental Protection and Ecological Conservation
- Community residents
- Experts and scholars
- Government institutions

Responsibilities

1. Review and consultation on ecological preservation solutions and strategies
2. Review and consultation on ecological preservation research projects and execution proposals
3. Review and consultation on ecological preservation proposals and progress
4. Consultation and review on ecological preservation measures
5. Improvement suggestion for abnormalities
6. Other issues related to ecological preservation and environment monitoring.

"CPC COEXISTS WITH THE ECOSYSTEM"

Short-term
- Survey of ecological resources

Medium-term
- Habitat maintenance
- Preservation of important species

Long-term
- Enhanced environmental education
- Maintenance of biodiversity

Collaborative project

Little tern breeding and survey program

Taoyuan City Wild Bird Association ｜劉義仁理事長

Collaborative project

Coral ark at Yongan LNG Terminal

National Sun Yat-Sen University ｜宋克義老師

Collaborative project

Little tern breeding and survey program

Taoyuan City Wild Bird Association ｜徐景彥組長

Collaborative project

Biological survey at Suao Fuel Distribution Center

National Chung Hsing University ｜曾喜育老師

Collaborative project

Ecological survey and monitoring at Guantang algal reef srea

National Taiwan Ocean Unirversity ｜識名信也老師

2.4.3 The LEAP approach and outcomes of ecological preservation

Description of the LEAP approach

Locate

dentify locations throughout an organization's value chain where key interactions with nature take place

Evaluate

Evaluate the positive and negative impacts and dependency of key business activities on nature

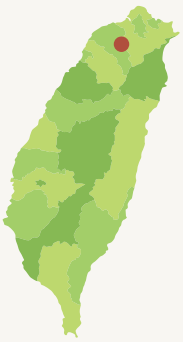
Assess

Analyze and evaluate the nature-related risks and opportunities faced by the organization

Prepare

Strategic thinking for responding to nature-related impacts and opportunities, and public reporting/ disclosure

Little tern breeding and survey program



L

Relevant area of operation
Third LNG Terminal

Location type
Land

E

IUCN directory and national preservation list
Class 2 endangered species

Effect on biodiversity

- **Form of impact:** Human interference (trespass of habitat by tourists or fishermen), natural disaster (heavy rain, Typhoon), stray cats and dogs
- **Scope of impact:** Areas G1, G2, and G3 in Datan; Zhuwei Fishing Harbor; Baiyu Coast; Xucuogang
- **Duration of impact:** long
- **Reversibility of impact:** Human interference, stray cats and dogs (fewer interference may allow little terns to return to habitat)
- **Irreversibility of impact:** Natural disasters (heavy rain, typhoon) (impacts from natural disasters such as heavy rain and typhoon that are caused by extreme climate are inevitable to little terns).

A

Project details

Stationary or mobile observations were made, depending on the prevailing environment, at Zhuwei Fishing Harbor, Xucuogang, Baiyu Coastal Area, and areas G1 and G2 in Datan to record the time when eggs were laid and hatched, as well as the nesting environment and distance between nests. This data helped determine distribution of little terns within these areas and discern geographic characteristics such as composition of ground surface, terrain, and vegetation.

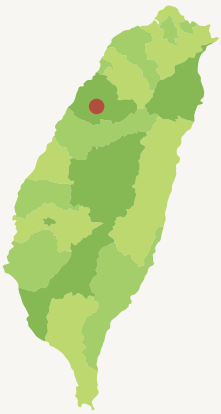
P

Costs invested
NT$ 981,615

Restoration progress

CPC discovered a large number of little tern nests for the first time at area G3 in Datan in 2023, and a general survey showed the number of adult little terns in Taoyuan having reached a 3-year high (279 total) this year.

Ecological survey and monitoring at Guantang algal reef area



L

Relevant area of operation
Third LNG Terminal

Location type
Maritime space

E

IUCN directory and national preservation list
Polycyathus chaishanensis (coral, Class 1 endangered animal)

Effect on biodiversity

- **Form of impact:** Sea temperature, drift sand, river water quality etc.
- **Scope of impact:** Baiyu Coast, Datan Coast, Guanxin Algal Reef Reserve
- **Duration of impact:** Rising sea temperature (long duration), drift sand (shorter duration), river water quality (short duration)
- **Reversibility of impact:** Drift sand (northeast monsoon in winter brings drift sand and causes a buildup of sediments), river water quality (there is occasional discharge of pollutants into nearby rivers)
- **Irreversibility of impact:** Rising sea temperature is an irreversible trend in the world

A

Project details

This project has been executed since 2019 out of commitment to the environmental assessment. It surveys macroalgae, crustose algae, zoobenthos, fishes, birds, and polycyathus chaishanensis and monitors environmental factors.

P

Costs invested

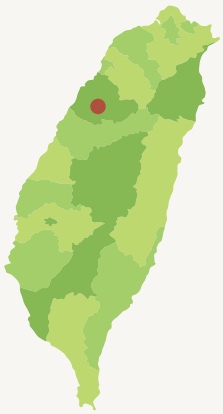
NT$ 64,100,010

from May 2023 to April 2026, for a total of 3 years)

Restoration progress

The number of crustose coralline algae species has been reported at 21 to 27, whereas the observable number of living clusters of polycyathus chaishanensis is also between 70 and 111. As for zoobenthos, fishes, and birds, the change in numbers remains stable and in line with seasonal variation.

Crustose coralline algae survey and monitoring



L

Relevant area of operation
Third LNG Terminal

Location type
Maritime space

E

IUCN directory and national preservation list
-

Effect on biodiversity

- **Form of impact:** this species is affected by sea temperature and drifting sand
- **Scope of impact:** areas G1 and G2 in Datan
- **Duration of impact:** long
- **Reversibility/irreversibility of impact:**

A

Project details

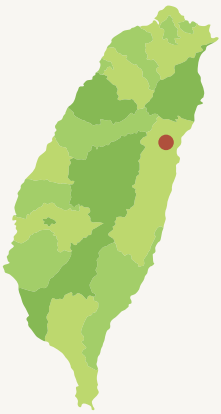
This project was the first to make use of unmanned aerial vehicles (UAV) for surveying coverage of crustose coralline algae. A set of standard operating procedures for surveying algal reef coverage with UAV was established in 2022 with the hope of developing a reliable method for surveying coverage of crustose coralline algae.

P

Costs invested
NT$1,410,000

Restoration progress
The survey continued in 2023 and processes were fine-tuned to reduce discrepancies with manual surveys.

Survey of ecological resources near Taoyuan Refinery Plant



L

Relevant area of operation
Taoyuan Refinery Plant

Location type
Maritime space

E

IUCN directory and national preservation list
Mangolin, crested serpent eagle, collared scops owl, golden birdwing

Effect on biodiversity

- **Form of impact:** None
- **Reversibility/irreversibility of impact:** None
- **Scope of impact:** None
- **Location type:** None
- **Duration of impact:** None

A

Project details

This project surveys biotic community composition within the vegetation belt that has been preserved at Taoyuan Refinery Plant, and targets lifeforms including vascular plants, mammals, birds, amphibians, and fishes. By setting up a sampling zone within the forest and making long-term observations of environmental factors, the project aims to establish habitat preferences for different animal clusters, observe seasonal changes, build a complete catalog of lifeforms within the plant premises, and assess carbon storage potentials of the vegetation. These findings should provide Taoyuan Refinery Plant with useful reference on business management and environmental sustainability strategies.

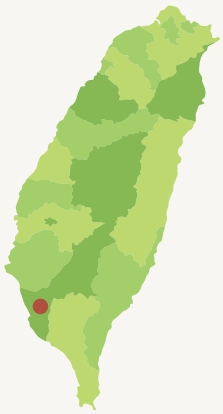
P

Costs invested
NT$3,950,000 元

Restoration progress

The most recent survey shows that there are 87 families, 151 genera, and 208 species of vascular plant within plant premise, including 1 Near Threatened (NT) plant, 1 Vulnerable (VU) plant, and 2 Endangered (EN) plants. With regards to animals, the project used infrared-triggered cameras and recorded presence of Chinese ferret-badger, masked palm civet, Taiwanese pangolin, Pallas's squirrel, and 5 species of bats. As for birds, the project observed endangered wild animals including osprey, crested honey buzzard, crested serpent eagle, crested goshawk, besra, common kestrel, collared scops owl, and Taiwan blue magpie.

Yongan Coral Ark Project



L

Relevant area of operation
Yongan LNG Terminal

Location type
Maritime space

E

IUCN directory and national preservation list
Coral (polycyathus chaishanensis), green sea turtle

Effect on biodiversity

- **Form of impact:** this species is affected by sea temperature and drifting sand
- **Scope of impact:** areas G1 and G2 in Datan
- **Duration of impact:** long
- **Reversibility/irreversibility of impact:**

A

Project details

The Coral Ark Project turns Yongan LNG Terminal into a shelter for coral species. The project transfers corals that are susceptible to bleaching due to rising sea temperatures from other marine spaces into Yongan LNG Terminal, where they are preserved for restoration in the future.

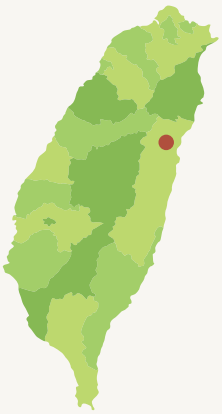
P

Costs invested
NT$9,580,000

Restoration progress

A survey of coral resources and habitat analysis at Yongan LNG Terminal found 130 species of stony coral that have the potential to form reefs, including the endangered wild animal – polycyathus chaishanensis. To maximize the advantage of the habitat at Yongan LNG Terminal, the project team took into account coastal locations that do not affect the unloading task and set up coral spawning zones. 39 species of coral have been transferred to the designated zone to date.

Coral restoration at Shen'ao



L

Relevant area of operation

Shen'ao Fuel Distribution Center

Location type

Maritime space

E

IUCN directory and national preservation list

-

Effect on biodiversity

- **Form of impact:** this species is affected by sea temperature and drifting sand
- **Scope of impact:** areas G1 and G2 in Datan
- **Duration of impact:** long
- **Reversibility/irreversibility of impact:**

A

Project details

Shen'ao Port Supply and Transport Center is situated in an area where very few research teams or citizen scientists are able to investigate. As a result, there is little knowledge about the local ecosystem, making it difficult to plan adequate measures for the protection and management of marine resources. The project aims to survey coral ecology, monitor environmental factors, and survey the sexual reproduction cycle of mature coral species in nearby marine spaces, so that science-based protections, management practices, and preservation plans can be devised in response.

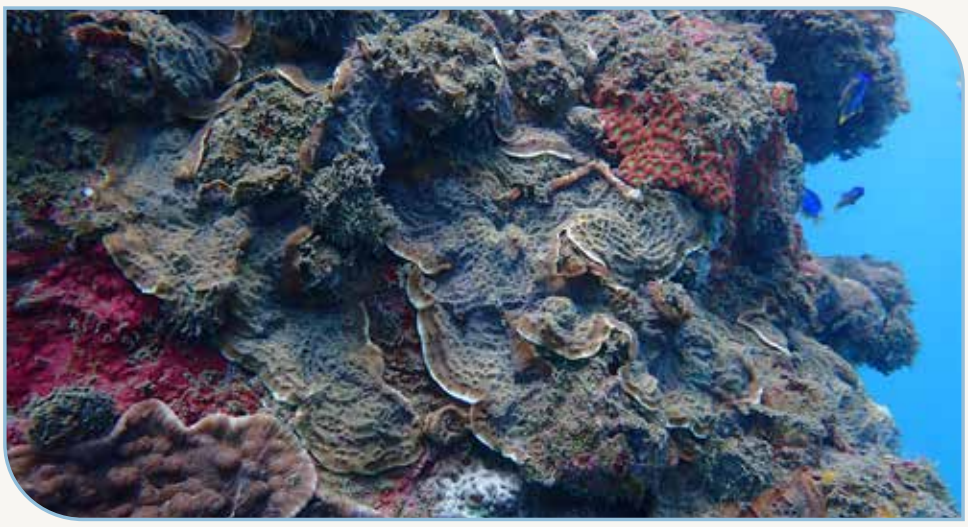
P

Costs invested

NT$3,930,000

Restoration progress

A coral ecosystem survey at Shen'ao Port Supply and Transport Center found 34 genera of stony coral with a coverage rate of 29.1%. These corals appear to be healthy and have formed a sizable cluster, whereas the preliminary outcomes of a reproduction survey indicate potential to lay eggs.



2.4.4 Education and promotion of ecosystem preservation

CPC Petroleum Discovery Museum — Algal Reef Preservation Exhibition

An Algal Reef Preservation Exhibition has been organized in the CPC Petroleum Discovery Museum located on the first floor of CPC Building in an attempt to communicate to the public the efforts that CPC and Guantang Industrial Park (Port) Ecosystem Preservation Committee have committed to preserving algal reef, as well as the progress accomplished to date. The exhibition comprises several sections including a history of the Third LNG Terminal, an illustrated journey of little terns in Taiwan, an introduction to the lifeforms found in the intertidal zone of the algal reef area, and an introduction to marine lifeforms in Taoyuan.

Since opening, the algal reef exhibition has given

233 tour **5,062** audience

Protecting endangered birds as a commitment of the Third LNG Terminal

Little terns are a Class 2 endangered bird species. They fly northward to Taiwan in April every year and gather and nest in the open gravel beach between the months of May to July. They are the only larus birds that breed in Taiwan. About 150 of these birds were sighted in Taoyuan each year according to past records. As part of the environmental commitments to constructing the Third LNG Terminal at Guantang Industrial Park, CPC has been cooperating with Taoyuan City Government and Taoyuan City Wild Bird Association since 2017 to build habitats for little terns along the coasts of Taoyuan.

Colored dummy birds made of cement and tile-based shelters were placed on sand and gravel beaches far away from developed areas to increase the breed rate of little terns and minimize human interference. Meanwhile, CPC works with local educational organizations to convey its care for birds to the public, and invites children to paint dummy birds as a way to educate them on little terns and the home environment.

- **Breeding habitats have been created at Xucuogang and Zhuwei Fishing Harbor; children and residents were mobilized to place tile shelters and dummy birds.**
- **By engaging children and residents in the placement of tile shelters and dummy birds, they become more aware of preserving habitat for little terns and the ecosystem.**

"Sustainable Ocean" – joint coastal cleanup

In this year's "Sustainable Ocean" event, CPC mobilized all employees and invited their families and friends to clean up beaches at Zhuwei Fishing Harbor (Taoyuan), Qixingtan (Hualien), Linyuan Wetland Park (Kaohsiung), and Longmen Beach (Penghu). Other activities such as wetland tour and environmental quizzes were also arranged to introduce participants to the beauty of nature and increase interaction in a way that helps preserve the ocean environment and provide better living conditions for future generations. This event first started in 2013 and CPC hopes to continue passing on the spirit of Ocean Sustainability into the future.

Additionally, the cleanup event in Northern Taiwan opened with the commissioning of "CPC Environmental Fleet and Divers." Taoyuan Refinery Plant first formed its "CPC Environmental Fleet" back in 2018 and later took part in Taoyuan City Government's ocean preservation efforts in 2022 by assembling the "CPC Environmental Divers" that comprise inspectors and repairers of underwater equipment. Both establishments have played an important role in maintaining the blue coastline, and had teamed up for this coastal cleanup under the name – "CPC Environmental Fleet and Divers." Through a flag presentation ceremony, Chairman Shun-chin Lee commended these "underwater heroes" for their efforts in protecting the environment, and reiterated CPC's commitment to preserving the ocean.

- **Coastal cleanups began simultaneously in Northern, Southern, and Eastern Taiwan and on the offshore island of Penghu; about 1,350 CPC employees, families, and friends had participated**
- **Ocean preservation efforts of "CPC Environmental Fleet" and "CPC Environmental Divers" commended in a flag presentation ceremony**

2.5 Pollution Prevention

2.5.1 Compliance with environmental laws

Short-term

- Communicate on compliance issues and convey ethics and integrity through training
- Arrange environmental protection meetings and plant audits, and keep track of environmental protection improvements as well as department actions

Medium/long-term

- Discuss and make appropriate amendments to corporate policies and guidelines through regular meetings for conformity with environmental protection trends
- Observe domestic and foreign environmental protection laws and avoid violation

For compliance with environmental regulations and enhanced cleanup and control of pollution, CPC not only keeps track of regulatory updates but also adopts best available control technologies (BACT) and develops its own inspection systems for quick problem solving. An environmental patrol team comprising experts from relevant fields has been assembled to perform environmental patrols on a regular basis. All patrol findings are entered into the environmental protection audit system and tracked until improvements are completed. Operating procedures for effluent and waste management have been implemented and are regularly reviewed and updated to ensure that practices are compliant with laws. Most of the environmental protection-related penalties imposed against CPC in 2023 involved air pollution, and CPC will continue implementing pollution controls, preventions, and improvements in the future while making appropriate adjustments to avoid similar occurrences.

Technology and environmental protection meeting	CPC holds regular meetings to discuss improvements to equipment components, volatile organic compounds, and soil/groundwater contamination. These meetings are also used as opportunities to track how internal units handle and make improvements to air pollution, water pollution, and environmental assessments.
Factory self-inspection and maintenance	Persistent enhancements are being made to the self-inspection and repair of equipment components at various work sites, so as to minimize leak of volatile organic compounds (VOCs).
Procedure safety management	By enhancing operators' hands-on experience and discipline, CPC reduces errors at the work site.
Regular environmental protection audi	Each production unit is subjected to monthly environmental audit; any defects found will be tracked persistently until improvements are made.
Compliance education and Training	CPC trains internal employees on environmental regulations and offers courses on environmental safety and health certification for improved compliance awareness.
Environmental protection Training	CPC trains employees on current environmental issues and offers courses covering air pollution, water pollution, toxic chemicals, etc., to promote professional knowledge.

CPC encountered 9 events of major penalty due to operational errors in 2023, for which it was fined a sum of NT$14.89 million and required to undergo appropriate hours of environmental education. All of the above violations were responded with appropriate measures and improvements at the time of occurrence.

» Remarks: An event of major penalty refers to a violation that incurs NT$300,000 or above in fines; appealed cases are not counted.

Violating Unit	Cause of violation	
Dalin Refinery	• Equipment component VOC exceeded level • Protection facilities did not function properly • Equipment was not operated within the scope approved in permit	**Fines and penalties** NT$970,000 in fines plus a 6-hour environmental seminar **Solutions or improvements** • Where oil is transferred over long-distance pipeline, connecting points of equipment components are tested for leaks. • A change of permit was requested to conform with actual operations. • Apply proper control and prevent incorrect oil from entering the work site, which may otherwise pose a risk of boiler halt and abnormal emissions.
Taoyuan Refinery Plant	• Equipment component VOC exceeded level • The flare had inadequate thermal value • Equipment was not operated within the scope approved in permit	**Fines and penalties** NT$1,255,000 in fines plus a 10-hour environmental seminar **Solutions or improvements** • Washer was replaced and locking mechanism was applied to components; equipment was tested to have passed requirements. • Components of high-risk equipment have been replaced with low-leak components. • The system has been configured to display flare thermal value, so that operators may adjust at any time. • The system has been configured to provide NOx and reducing agent injection alerts at SCR outlets, so that operators may adjust at any time.
Linyuan Petrochemical Plant	• Damage in the production pipeline	**Fines and penalties** NT$1,980,000 in fines plus a 4-hour environmental seminar **Solutions or improvements** • The leaking heat exchanger was repaired and passed inspection. • Conduct monthly automated checks on the heat exchanger, and test drainage for VOC. • Conduct weekly tests on coolant water to eliminate concerns in the circulating liquid. • Pipe clamp of every heat exchanger is subjected to stress testing during each major repair; pipe clamps are replaced on a regular basis.
Cianjhen Storage and Transportation Office	• Equipment component VOC exceeded level • VOC exceeded level in the internal floating roof tank	**Fines and penalties** NT$300,000 in fines plus a 4-hour environmental seminar **Solutions or improvements** • For any equipment and pipeline that undergoes repair, the unit-in-charge will conduct random/repeated tests on relevant components for more leak detection. • The oil tank was emptied for repair, had o-ring replaced, and was placed on tracking list to minimize risk of leak.
Linyuan Petrochemical Plant	• Emission of black fume at the flare • Black fume from fire incident	**Fines and penalties** NT$675,000 in fines plus a 4-hour environmental seminar **Solutions or improvements** • Dedicated personnel have been assigned to monitor flare emission for the entire duration; steam volume is adjusted appropriately to prevent formation of suspended particulates. • Pipeline layout has been changed to prevent polymers from building up in the steam section, which may cause spontaneous combustion.



» Remarks: An event of major penalty refers to a violation that incurs NT$300,000 or above in fines; appealed cases are not counted.

Violating department	Cause of violation	
Linyuan Petrochemical Plant	• Equipment did not obtain installation permit	**Fines and penalties** NT$1,600,000 in fines plus a 2-hour environmental seminar **Solutions or improvements** • CPC will apply for a permit according to the rules before establishing a new stationary pollution source. • If there is any confusion about the method of permit application on a later date, CPC will inquire and confirm with the authority through official correspondence before execution.
Dalin Refinery	• Steam-to-exhaust ratio of the flare exceeded legal requirements • Equipment was not operated within the scope approved in permit • Odor exceeded standards at the emission channel • Equipment component VOC exceeded level	**Fines and penalties** NT$1,810,000 in fines plus a 14-hour environmental seminar **Solutions or improvements** • Increase monitoring points for steam-to-exhaust ratio to allow control by operators, and enhance education. • Apply proper control and prevent incorrect oil from entering the work site, which may otherwise pose a risk of boiler halt and abnormal emission. • Renew scrubber equipment; operate 3-phase centrifuge in a closed environment; and make persistent improvements. • Components are duly tested for VOC after each removal or repair.
Linyuan Petrochemical Plant	• Steam-to-exhaust ratio of the flare exceeded legal requirements • Equipment component VOC exceeded level • Air pollutants were not collected properly • Equipment was not operated within the scope approved in permit • Water treatment facilities were not kept airtight • No maintenance plan was proposed • VOC exceeded level in the internal floating roof tank • CEMS was not carried out according to management policies	**Fines and penalties** NT$3,950,000 in fines plus a 50-hour environmental seminar **Solutions or improvements** • Establish alerts for steam-to-exhaust ratio and assign dedicated personnel to monitor emissions and make timely adjustments to steam volume. • Issues of high leakage risk such as variable components, repeated leakage, leak stoppers, and increases in quarterly test value are being checked. • The gas-liquid separation tank has been equipped with nitrogen pipelines that are nitrogen-sealed to prevent diffusion of vapor. • Issue MOC to have multiple parties confirm the flow of material pipelines and check details of operating permit. • Application for change of permit may be submitted early if there is a need to adjust the production process. • Apply control at the source of effluent to reduce stress on the water treatment system. • If there is any plan to repair tower or heat exchanger, the Department of Environmental Protection will have to be notified in advance for approval before opening the seal/tank. • The floating roof tank has been nitrogen-sealed to prevent diffusion of vapor. • Conducted full-scale check on compliance of CEMS.

2.5.2 Emissions and management of air pollutants

Short-term

- Continually invest into air pollution improvement plans and research projects to progressively reduce air pollutant emission volume

Medium/long-term

- Reduce emission of VOCs
- Complete 38 air pollution improvement projects by 2031

CPC makes proactive plans to improve air pollution in line with government policies, and has proposed an "Air Pollution Control Action Plan" as per instruction of the Ministry of Environment that is duly enforced throughout all plants. By completing air pollution improvement plans one after another, CPC has effectively reduced the emission of air pollutants, which is a strong demonstration of its progress and resolve toward reducing carbon. CPC made the commitment to control and improve air pollution as part of its sustainability practices, and has identified nitrogen oxides (NOx), sulfur oxides (SOx), volatile organic compounds (VOCs), and total suspended particulates (TSP) to be the major air pollutants emitted from production facilities, and the sources of which include stacks, flares, storage tanks, equipment components, and loading operations. Improvement plans have been proposed based on the above findings to address 5 main aspects, and a budget of NT$9.548 billion have already been committed since 2017. CPC aimed to complete 38 air pollution improvement projects between 2017 and 2031, and had completed 30 by the end of 2023.

Air pollution improvement measures and progress

Air pollution improvement plan

Completed projects

30

Process improvement

- Adjusted operation and program of existing equipment for optimal performance
- Improved combustion technology for higher combustion efficiency

Use of clean fuel

- Transition into gas fuel for existing and new boiler equipment to significantly reduce emissions of pollutants and burden to the environment

Incorporation of advanced procedures and equipment into the production process

- By introducing advanced procedure integration and control systems, CPC is able to improve the stability of its operations
- Use of best available control technologies (BACT) and low-leakage equipment

Installation of air pollution control equipment

- TSP: Installed static electricity- or bag-based dust collector
- SOx: Installed fume gas desulfurization (FGD) equipment
- NOx: Adopted selective catalytic reduction (SCR) or low NOx burner (LNB)
- VOCs: Progressively transitioned into low-leakage components and adopted oil and gas recovery equipment

Waste gas recovery and reuse

- Installed Flare Gas Recovery System (FGRS) at refineries and petrochemical plants, so that exhaust generated from plant operations can be recovered and reused in the production process

Emissions of air pollutants in last 3 years

Unit: tonnes

Nitrogen oxides (NOx)

2021	2948.4
2022	2958.9
2023	2595.8

Sulfur oxides (SOx)

2021	703
2022	1017.7
2023	888

Total suspended particulats (TSP)

2021	184.9
2022	207.6
2023	217.1

Volatile organic compounds (VOCs)

2021	1723.6
2022	1409.3
2023	1302

» Note 1: Data represents total emission of CPC's 3 refineries (Taoyuan Refinery Plant, Dalin Refinery, and Linyuan Petrochemical Complex; unit: MT). In compliance with Ministry of Environment's Regulations Governing Report of Emission from Stationary Pollution Source in Public and Private Areas and related rules.

» Note 2: Emission volumes for 2021 and 2022 are approved volumes, and the emission volume for 2023 is the reported volume.

» Note 3: No data was reported for PM10 and H2S.

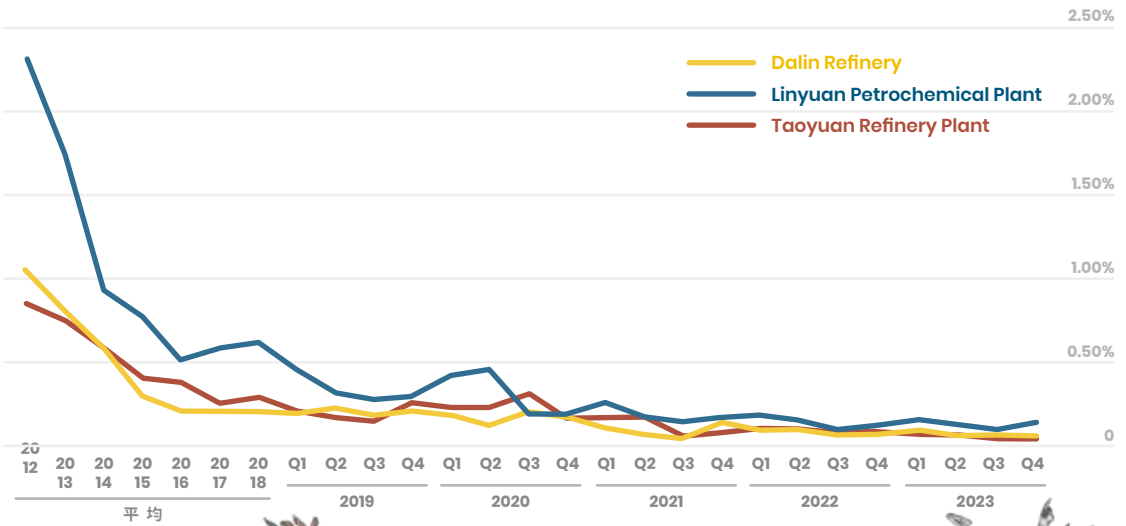
» Note 4: CPC has three oil refineries located in densely populated areas (where the population of the local town is more than 50,000), which are: Taoyuan Refinery Plant in Guishan District, Taoyuan City, with a local population of 178,000; Dalin Refinery in Xiaogang District, Kaohsiung City, with a local population of 154,000; and Linyuan Petrochemical Complex in Linyuan District, Kaohsiung City, with a local population of 68,000.

Between 2017 and 2031, CPC plans to commit NT$11.3 billion in budget into the refineries, and expects to reduce TSP by 10.0%, reduce SOx by 32.0% , reduce NOx by 16.4%, and reduce VOCs by 20% once all projects have been completed.

Nitrogen oxides (NOx)	Sulfur oxides (SOx)	Volatile organic compounds (VOCs)	Total suspended particulats (TSP)
Expected reduction 16.4%	Expected reduction 32%	Expected reduction 15.4%	Expected reduction 10%

Out of all sources of VOC emitted by the petrochemical industry, evaporations from equipment components are especially difficult to control. CPC has been addressing this issue by: making persistent leak improvements to equipment components, setting management targets (0.2% leak, 60% repair rate, and 12% self-inspection rate on a quarterly basis), maintaining a list of equipment components with high risk of leakage, promoting the use of equipment component self-detection system, and holding regular meetings to track progress. Leakage of VOCs through equipment components has been significantly improved in all three refineries, as depicted in the figure below:

Management and improvement of equipment component VOC emission



2.5.3 Discharge and management of effluents and waste

CPC's key measures for effluent management

Discharge and management of effluents

CPC has its own facilities or departments in place to treat effluents; it has implemented a set of "Guidelines on Discharge of Effluents to Effluent Treatment Facilities" that outlines how the oil-water separator is operated, maintained, and cleaned at various sites. The Refining Business Division and the Petrochemical Business Division each have an environmental protection department that sets effluent standards and inspection rules to facilitate effective management of effluents produced from operations.

CPC's effluent pollution control measures begin with rigorous control over the discharge of production effluents at the source; high-performance equipment is then used to recycle and reuse effluents, and any runoffs will be treated in accordance with environmental protection laws and standards before discharge in order to lessen the impacts that production effluents may have on the environment. Petroleum organic compounds are the major pollutants contained in our effluents. The focuses of our regular effluent monitoring efforts include suspended solids (SS), chemical oxygen demand (COD), oil, and phenol. Effluents from all plants were properly monitored and treated in 2023 to conform with effluent standards. No effluent was discharged into groundwater. In the event of pipeline damage, remedial actions will be taken to clear the damaged pipeline of residual oil, remove contaminated soil, stop residents from using groundwater and use water supplied by CPC for irrigation instead, and subsidize the installation of freshwater equipment for access to drinking water. Overall, residents' use of water will not be affected. Furthermore, additional pressure monitoring system, inspection points, and anticorrosion test points are being introduced whereas pipelines are actively replaced to prevent pipeline damage. All plant sites maintain records of the mean value of observations sampled throughout the year. CPC's effluent pollution prevention efforts are explained below:

Dalin Refinery

Secondary/tertiary treatment plant → central wastewater treatment plant of Kaohsiung Linhai Industrial Park → discharge into ocean

Test Item	Marine effluent discharge standards	2021	2022	2023
SS (mg/l)	100	6.13	7.30	5.6
COD (mg/l)	280	50.10	30.60	30.77
Oil (mg/l)	20	<1.0	<1.0	<1.0
Phenol (mg/l)	1.0	0.0035	<0.01	<0.01

Taoyuan Refinery Plant

Secondary/tertiary treatment plant → discharge into Nankan River

Test Item	Marine effluent discharge standards	2021	2022	2023
SS (mg/l)	30	22.35	10.43	11.7
COD (mg/l)	100	52.58	18.62	27.45
Oil (mg/l)	10	4.00	3.33	3.25
Phenol (mg/l)	1.0	0.007	0.004	0.0074

Linyuan Petrochemical Complex

Primary treatment → Secondary/tertiary treatment plant → treatment at Linhai wastewater treatment plant → discharge into ocean

Primary treatment → partial secondary treatment → high-level treatment → recycled and reused in plant

Test Item	Marine effluent discharge standards	2021	2022	2023
SS (mg/l)	100	6.85	8.60	4
COD (mg/l)	280	74.70	48.35	46.95
Oil (mg/l)	20	2.80	<1.00	<1.00
Phenol (mg/l)	1.0	<0.01	<0.01	ND

Mining formation with water production

Most domestic oil and gas mining areas are natural gas wells. When mining natural gas, condensate oil and formation water are also produced. After three phase separation of oil, gas, and water, the formation associated water production will be affected by the difference in salt content (Cl-, about 3,800-11,000 ppm) in different mining areas. Although salt is not included in the effluent control standard, it may cause soil salinization. Therefore, there are two treatment methods for water production:

1. First, after concentration, it is reinjected into the reservoir via the water production reduction well, which helps extract additional oil.
2. Second, after the water is treated by the treatment plant and passes the water quality inspection, it will be discharged to the river.

Tiezhanshan Mine, and Jinshui Area and Qingcaohu Area of Jinqing Mine

4767.3 kL **20%**

Volume treated in 2023

Treatment method

Reinjection into the formation through disposal wells

Description

Before oil reinjection into the formation, the oil slick is recovered by oil-water separation and before reinjection into the underground reservoir. The specifications of disposal wells mainly refer to the relevant regulations of the second class of injection wells of the United States federal regulations.

Chuhuangkeng Mine

19,075.3 kL **80%**

Volume treated in 2023

Treatment method

Discharge after treatment

Description

Oil is first separated and recovered through an oil-water separator (API) and discharged when it meets the release standard using an air pressurization floater and a biological treatment system.

Discharge and management of waste

CPC has "Industrial Waste Management Guidelines" and "Industrial Waste Tracking Principles" in place to guide management over waste reduction, reporting, storage, and disposal (clearance, treatment, and reuse). Pro-active efforts are being taken to track and manage waste disposal, and rolling adjustments are being made in meetings to reflect prevailing laws and progress. In addition to general refuse, CPC produces industrial waste in the forms of catalyst, sludge, oil sludge, and oil mixtures. General refuse is handed over to the local cleaning crew and certified disposal service providers for incineration at incineration plants; precious metal catalysts are recycled as precious metals; sludge and oil sludge are first treated using in-plant incinerator before landfill; as for oil mixtures, they are made up of different waste collected from various stages of the refining process and represent about 40% of total waste, which the Company tries to direct back into the refining process where possible. Overall, CPC currently treats solid waste based on their characteristics using a variety of methods such as: recycling and reuse, solidification, landfill, incineration, physicochemical treatment, thermal treatment, and stabilization. Zeolite catalyst (mainly consists of aluminum oxide (Al_2O_3) and silicon dioxide (SiO_2) are the main forms of waste reused at refineries and petrochemical plants in 2023. These wastes are handed over to recycling organizations according to the reuse purposes outlined in Ministry of Economic Affairs Regulations Governing Reuse of Industrial Waste, and 100% of which is being reused.

Main wastes produced

	Description of materiality	Mitigation and improvement measures
Oil sludge	Oil sludge (hazardous and non-hazardous) is produced mainly from repairs of the storage system, feedstock oil tank, semi-finished oil tank, and finished oil tank, whereas non-oil sludge represents key waste produced from the water treatment system. The two types of sludge account for about 9% of total waste produced.	The waste is treated mainly through incineration, either by CPC or by certified service provider.
Catalyst	This is an important material used in the refining process, and comprises three main types: non-hazardous catalyst, precious metal catalyst, and zeolite catalyst. Waste catalyst accounts for about 15% of total waste produced.	The waste is mostly reused as raw material or handed over to certified service provider.
Waste oil mixture	The refining process produces waste oil mixtures that contain complex substances; the mixture is collected from various sources (e.g. oil-water separator, repair of tanks, and three phase separation) and accounts for about 40% of total waste produced.	The waste is collected and redirected to the refining process.

Volume produced in the last 3 years (unit: MT)

Waste category	Waste type	2021	2022	2023	Whether disposed of by external party	Waste treatment methods
Non-Hazardous Waste	Other single non-hazardous waste catalyst or mixture	8,278.36	16,425.69	15,039.2	✓	Treatment/reuse
	Organic/non-organic sludge	8,334.45	7,993.92	7,271.18	✓	Treatment by self/ external party
	Non-hazardous sludge	4,528.2	3,080.868	2,281	✓	Treatment by self/ external party
	Waste oil mixture	60,277.01	55,051.4	77,561.86		Self-treated/refined
Hazardous waste	Spent zeolite catalysts	8,785.97	4,652.55	2,668.03	✓	Reused
	Hazardous sludge	2,781.74	1,997.97	1,768.7	✓	Treatment by self/ external party
	Waste liquid with pH of 12.5 or higher	42,017	38,046	32,792		Self-treated

Highlights of outsourced waste reduction

The commissioning of disposal contractors is determined entirely through open tender. CPC has also developed eligibility criteria for waste disposal/recycling contractors in accordance with the Ministry of Environment's waste disposal-related laws

Recycled and reused in 2023 about **261 MT**

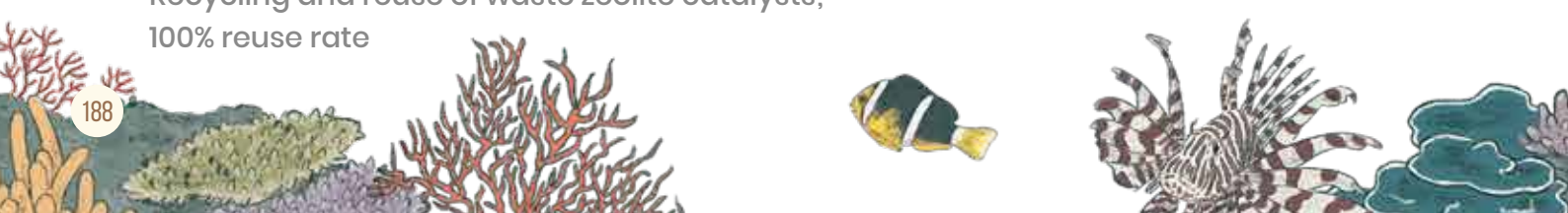
Recycling and reuse of waste active carbon; 100% reuse rate.

Reused in 2023 about **8,378 MT**

General/specific reuse of other single non-hazardous waste catalyst or mixture.

Recycled and reused in 2023 about **2,668 MT**

Recycling and reuse of waste zeolite catalysts; 100% reuse rate



Waste volume and treatment method – 2023

Category	Treatment method	Volume (t)	Percentage by disposal method (%)	Waste (t)	Category Ratio (%)
Hazardous waste	Chemical Treatment	32,792	22.15	34,906.993	23.58
	Solidification	345.81	0.23		
	Physical Treatment	0.00	0.00		
	Wash	0.40	0.00		
	Incineration	1,768.78	1.19		
	Thermal Treatment (except for incineration)	0.007	0.00		
Non-Hazardous Waste	Chemical Treatment	1,308.24	0.88	113,128.791	76.42
	Solidification	5,084.31	3.43		
	Physical Treatment	68,470.20	46.25		
	Recycling	2,4440.01	16.51		
	Landfill	2,451.91	1.66		
	Incineration	11,093.25	7.49		
	Thermal Treatment (except for incineration)	280.87	0.19		
Total		148,035.784	100	148,035.784	100.00

» Note 1: Data represents total emission of CPC's 3 refineries (Taoyuan Refinery Plant, Dalin Refinery, and Linyuan Petrochemical Complex; unit: MT).

» Note 2: CPC does not produce any hazardous industrial waste that is recyclable or reusable as per Ministry of Environment's announcement regarding "Waste and Renewable Resources to Recycle/Reuse" and MOEA's "Regulations Governing Reuse of Industrial Waste"; for this reason, none of the hazardous industrial waste can be recycled or reused, and the volume of hazardous waste recycled accounted for 0% of total hazardous waste.

Waste transferred from disposal to recycling in 2023

Category	Recycling	On-site	Off-site	Total volume
Non-Hazardous Waste	Renewal and reuse	11,841.38	12,598.63	**24,440.01**
	Total volume	11,841.38	12,598.63	**24,440.01**

Recovery rate of industrial waste (%)		
2021	**2022**	**2023**
47.00	35.57	16.51

Management of toxic substances

CPC is required to present to the authority a response plan for Ministry of Environment's Class 1 to Class 3 toxic chemical substances and hazardous chemical substances of concern that meet a certain level of significance. This plan has to address details including: composition of the emergency response team, the command system, the reporting system, and availability of emergency disaster prevention equipment. Two unannounced tests and an overall drill shall be implemented for every contingency plan each year, and drills in collaboration with the emergency response drills of local environmental protection units shall be implemented to ensure preparedness for toxic disaster prevention. All relevant units participate in the nationwide toxic chemical substance joint prevention organization in accordance with Paragraph 1, Article 38 of the "Toxic and Concerned Chemical Substances Control Act." In addition, we complete the stage 1 registration of a total of 167 existing chemicals according to the "Regulations of New and Existing Chemical Substances Registration." Furthermore, we voluntarily complete the Chemical Commodity Importation Pre-Confirmation in coordination with the "Import Management in Chemical Substance Registration" promoted by Ministry of Environment.

Major leakages by CPC – 2023

Plant of leakage	Incident description	Improvement method
Linyuan Petrochemical Plant	In February 2023, Naphtha Cracker Section Three encountered damage in the heat exchanger of the propylene rectification tower that was used for naphtha cracking, and as a result, approximately 2,698.58 MT of propylene leaked into the coolant. CPC had responded to the incident appropriately at the time of occurrence, and found environmental data to be within legal requirements. On May 22, CPC ordered a boiler halt and conducted a full-scale inspection and repair of related equipment to ensure that they are reliable, safe, eco-friendly, and capable of operation under normal circumstances.	• Regular equipment inspection and repair: Heat exchanger of the propylene rectification tower and related equipment are checked regularly; maintenance and repair works are arranged where necessary to ensure that they operate properly. • Enhanced production monitoring: More rigorous monitoring of the production process has been implemented to facilitate quick response to abnormal occurrences.

2.5.4 Management of soil and water contamination

CPC surveys soil and groundwater pollution and makes improvements according to law. A total of 5 sites were deregulated in 2023, and by the end of 2023, CPC had 50 sites deregulated while 34 sites were still under regulation.

1. **Keelung Fuel Distribution Center**
   Date of deregulation: 2023.2.3
2. **Nitrogen factory of the Fuel Storage Department**
   Date of deregulation: 2023.3.6
3. **Waian boat fuel station**
   Date of deregulation: 2023.5.3
4. **Land lot No. 428, Gaonan Section**
   Date of deregulation: 2023.7.19
5. **Tiezhanshan Mine**
   Date of deregulation: 2023.10.6
6. **Hsinchu Fuel Distribution Center**
   Date of deregulation: 2023.12.20
7. **Suao Fuel Distribution Center**
   Date of deregulation: 2023.12.29

CPC 2023 Countermeasures for polluted site

Regulated

Require relevant units to propose contingency, control, and remediation plans. Carry out improvement works for soil and groundwater contamination according to the pollution improvement plan approved by the environmental protection authority and experts/scholars.

Unregulated

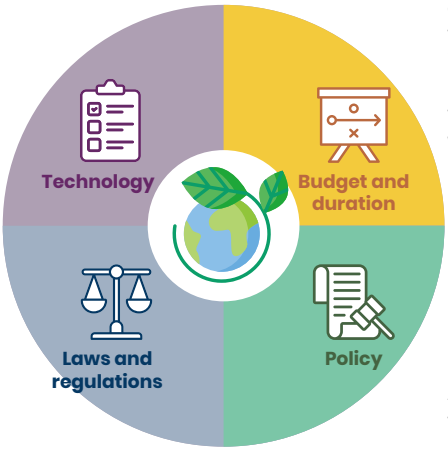
- Enhance monitoring of data gathered from leak detectors and groundwater monitoring wells at oil supply centers and petrol stations.
- Require all units to follow CPC's "Soil and Groundwater Pollution Prevention and Improvement Principles"; devise improvement measures immediately upon discovering abnormal data from soil and groundwater contamination detectors and carry out improvement works accordingly.

Challenges of soil remediation – 2023

Technology

Soil and groundwater contamination tend to occur deep below the surface that makes it difficult to determine the size of the contaminated area. Land remediation typically begins with a trial experiment that is customized based on the characteristics of the treated site, and the findings will enable more detailed planning on how to proceed with the remediation works.

The preliminary technical assessment addresses details such as: impact radius of soil vapor extraction, well count and horsepower, groundwater measurement, existence and location of floating oil, depth and scope of pollution control, and location of chemical injection. The in-situ work approach requires ongoing adjustments to be made depending on the prevailing circumstances, and therefore involves more sophisticated technologies and expertise.



Budget and duration

CPC takes part in many of the government's policies, such as: preservation of Kaohsiung Plant as cultural heritage, creation of the semiconductor corridor, urban planning, brownfield development, and promotion of green energy. For this reason, the timeline of pollution cleanup is not something that CPC has sole control over. Pollution improvement works also involve such a high degree of uncertainty that plans have to be constantly evaluated and amended, which tend to result in delays.

Laws and regulations

- Soil and groundwater contamination, whether due to accident or leakage, attracts attention from the local authority. If the inspection finds any breach of legal standards, the land in question will be deemed a pollution control area and subjected to the following treatments that affect the use of land:
- Pursuant to Article 17 of the Soil and Groundwater Pollution Remediation Act: any new construction, expansion, modification, renovation, and dismantling activity at the pollution control area may proceed only with the approval of the authority (i.e. Environmental Protection Administration).
- Meanwhile, Article 19 of the Act states that: any excavation, backfill, temporary storage, and attempt to transport soil or extract groundwater may proceed only with the approval of the county (municipal) authority (i.e. the respective department of environmental protection).

Policy

As described in the technical aspect, the selection of soil and groundwater remediation approach is so extensive that it makes it difficult to estimate the cost of work and outsource jobs to the right contractors. For this reason, project owners tend to reserve additional time for administrative processes, and there is really no one standard that fits all scenarios. Kaohsiung City Government's Semiconductors Corridor Project, for example, has such a short completion timeline that land remediation works are being carried out at significantly higher costs. Meanwhile, investments from high-tech enterprises in the nearby location combined with rising property prices caused a shortage of labor and construction materials that further contributed to the rise of land remediation cost.

Methods of soil remediation – 2023

In-situ chemical oxidation

- Chemical oxidation can be achieved either in situ or ex situ. Given the rapid chemical reaction, in-situ chemical oxidation is more efficient and more competitive in processing time. In chemical oxidation, oxidants are added to damage pollutants or convert them into non-toxic or low toxic substances by means of oxidation reduction (redox).

Methods of soil remediation – 2023

Wash

- Soil washing is an effective method for treating contaminated soil, and it involves two main processes: hydraulic separation and wastewater treatment. In the hydraulic separation process, large blocks of soil are broken down and separated by particle size through several steps including sedimentation, up flow sorting, hydro-cyclone, etc. This process allows large volume of soil to be separated into different particle sizes in an efficient manner. As for the wastewater treatment process, the purpose is to ensure that effluents from the soil wash are treated appropriately to prevent secondary contamination.
- The soil washing technique uses water or other cleaning agents to separate contaminants from soil. This process often involves mixing soil with a cleaning agent, so that contaminants may detach from soil particles and attach to water. Next, using physical methods such as sifting and sedimentation, the larger, cleaner soil particles are separated from finer particles that carry contaminants. Lastly, the contaminated water is treated to remove or stabilize contaminants, whereas the clean water is either reused or discharged.

Progress highlights

Take the 60th phase of land replot at Asia New Bay Area in Kaohsiung, for example, CPC applied the soil washing technology to significantly improve the efficiency of its remediation efforts. This proves the feasibility and viability of the soil washing technology in actual application, especially when treating large areas of contaminated sites. The technology not only increases the efficiency of remediation efforts, but also helps achieve sustainable management of the environment and reuse of land.

Soil thermal treatment

- Thermal desorption is an ultimate soil remediation approach that uses heat to destroy contaminants. It involves heating the contaminated soil to a high temperature, often exceeding the boiling point of organic contaminants. The process turns any organic substance attached to soil particles into a gas form, which can then be collected and treated using a gas treatment system to ensure conformity with emission standards. This approach is suitable for soil that has a high level of organic contamination.
- Having realized the efficiency and necessity of this technology, CPC made a tender invitation to acquire soil thermal treatment equipment for Kaohsiung Refinery in 2017. The equipment was subsequently transferred and put under the management of Kaohsiung City Public Works Bureau following the remediation work of the refinery in 2021. Nevertheless, CPC continues to provide administrative and technical support for the construction and trial run of such equipment, all the way until the thermal treatment equipment was completed in 2022. A stationary pollution source operating permit was obtained for the equipment in 2023, and the outsourcing of equipment operation was completed in 2024. This thermal treatment equipment is expected to play a critical role in the remediation at Kaohsiung Refinery.

Green remediation and land revitalization

- Green and Sustainable Remediation (GSR) is a remediation approach that takes into consideration environmental, social, and economic benefits at the same time. Its purpose is to lessen the overall footprint and impact on the environment, while at the same time ensuring that the remediation efforts are in line with society's common interest and pose minimal negative impact on the economy. In this remediation approach, the use of biological agent alone is a critical technology, because the process depends on microorganisms and their metabolites to break down or convert the contaminants, and thereby achieve the purpose of remediation. The biological agent typically uses specific strain of microorganism or enzyme that directly breaks down the contaminants, or improves the soil condition in such a way that improves activities of native microorganisms. Not only is this technology friendly to the environment, but it also offers high cost effectiveness and is effective against various forms of organic contaminants, such as petroleum hydrocarbons and other hazardous chemical substances. Through the use of biological agent, CPC demonstrates how the idea of GSR can be enforced in the actual remediation of a contaminated site for the sustainability of the environment.

Performance highlights

1 **CPC adopted professional technologies specifically to the needs of the site, and provided active support to internal units such as Linyuan Plant of the Petrochemical Business Division and the Cianjhen Storage and Transportation Office. Based on the level of soil and groundwater contamination, CPC made educated guesses on the contamination hotspot, clarified the oil composition, probed ahead into the situation, and made assessments on the overall remediation performance. The project team also helped the Oil Product Marketing Division manage remediation projects for several fuel stations in order to lessen waste of resources from an inappropriate remediation strategy and increase the efficiency of remediation efforts.**

2 **CPC continues to improve its technology for treating contaminated soil, and strives to shorten the time taken for bioremediation as part of its vision toward circular economy. CPC produced about 14 MT of eco-friendly agents in 2023. These agents have been used on Fengde Bioremediation Site and other contaminated sites to increase the efficiency of bioremediation efforts. CPC also helps Fengde Bioremediation Site revise its re-utilization plans and extend permit validity, conducts on-site testing of contaminated soil, and performs analyses on the use of soil additives, bioremediation performance, and nutrients. These efforts have helped CPC Shell Lubricants Company Ltd. move contamination from the soil located at land lot No. 173 and 173-1, and completed remediation of 1,149 MT of contaminated soil at the bioremediation site of Fengde Oil Depot.**

Outsourced treatment

- When other methods are ineffective to treat highly contaminated soil or highly concentrated contaminated soil (sludge), we outsource treatment to qualified contractors.

CPC & SOCIAL CO-PROSPERITY HAPPY ENTERPRISE

03 CHAPTER

Chapter summary

CPC has always viewed human resources as its most precious capital, as the contribution of its employees is essential to corporate sustainability. CPC is committed to ensuring employees' work safety and creating a satisfying work environment. The organization also makes ongoing improvements to the selection, education, and recruitment of talents, and helps each employee develop a sustainable career path.

Furthermore, CPC contributes proactively to the common good by heeding society's needs, responding to United Nations' Sustainable Development Goals (SDGs), and taking real actions to eliminate uneven distribution of resources. Through communication of mutually beneficial values, the organization hopes to build a solid foundation upon which society may progress.

Reader Priorities

Communities • Employees
Partners • Public representatives
NPOs/NGOs

3.1 FRIENDLY WORKPLACE P.197
3.2 PEACE IN WORK P.206
3.3 TALENT RECRUITMENT AND DEVELOPMENT P.213
3.4 HUMAN RIGHTS PROTECTION P.223
3.5 SOCIAL INCLUSION P.229

Corresponding SDGs

CPC's performance highlights

senior managers females accounted
22.13%

males are on unpaid parental leave
42.61%

Average years of service at retirement
30.34

Average training hours per employee
53.65

employees under collective bargaining agreement
99.96%

Assisted in selling of agricultural products
7.1 MT

Sea waste cleared
48.557 MT

Local charity donations amounted
4.03 million

Record-high blood donation
1,039.25 million c. c.

Sponsorship to sports talents
17 athletes
14 sports teams from school

Highlight of awards received in 2023

CPC's influence recognized by reputable awards

Driven by relentless pursuit for excellence and innovative breakthrough, CPC not only delivers business success but also exerts social influence by giving back to the society and caring for employees' wellbeing. In 2023, CPC stood out among competitors and was recognized by prominent awards, including "Single Category Sustainability Performance Awards: Talent Development Leader and Gender Equality Leader" in Taiwan Corporate Sustainability Awards (TCSA). CPC submitted its "Competency Enhancement Program for Successors to High-level Manager" in participation of the ATD (Association for Talent Development) Award in 2023, and won an award in the "Leadership/ Management Development" category, making it the only entity to win such an award in Taiwan. In addition to winning world-class awards, CPC as a state-owned enterprise took part in the Talent Quality Management System (TTQS) of the Workforce Development Agency, Ministry of Labor, and was awarded the "Silver Award."

CPC's social awards in 2023

Taiwan Corporate Sustainability Awards (TCSA)
Global Corporate Sustainability Awards (GCSA)

Single Category Sustainability Performance Awards - Social Inclusion Leadership Award, Gender Equality Leader, Talent Development Leader, Growth through Innovation Leader, and Creative Communication Leadership Award.

Corporate Comprehensive Performance – Taiwan Top 100 Sustainable Enterprises Award

Corporate Sustainability Report Award (Chinese) – Energy Industry Category 1 – Gold

Single Category Sustainability Performance Awards - Sustainability Talent Award – Chairman Shun-chin Lee

Asia-Pacific Sustainability Action Awards (APSAA)

Bronze - Gender Equality in CPC

Taiwan Institute for Sustainable Energy

2023 Asia-Pacific Sustainability Action Awards (APSAA)
Bronze - Gender Equality in CPC

Great Practice of 2023

Asia Corporate Excellence & Sustainability Awards (ACES)
Sustainability – Community Initiative Award

Talent Quality Management System (TTQS) of the Workforce Development Agency, Ministry of Labor

Silver Award

2023 Association for Talent Development ATD Award Leadership/Management Development Category

Competency Enhancement Program for Successors to High-level Manager
It is an introduction to CPC's senior manager training

Enterprise Asia

Asia Responsible Enterprise Awards (AREA)
Corporate Sustainability Report Awards, Human Resources Investment Award, Responsible Business Leadership - Chairman Shun-chin Lee

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Sports Administration, Ministry of Education
2023 Sports Activist Awards

Ministry of Culture
The 16th Arts & Business Awards

Hsinchu City Government Department of Labor
Top Employer of Persons with Disabilities – **Role Model Award**

Taiwan Institute for Sustainable Energy (TAISE)
Golden Eagle Micro Movie Awards: ESG Micro Movie Award – Bronze
winning production: Fly! Slow Angels

Reader's Digest
The Reader's Digest Trusted Brand Survey- Won "Trusted Brand Platinum Award – Petrol Station Category" for 23 consecutive years

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Department of Health, Taipei City Government
CPC Building received **Certification for Top Nursery Facility**

National Communications Commission (NCC)
Web Content Accessibility certification

3.1 Friendly Workplace

CPC complies with international labor conventions and domestic union regulations, and protects employees' rights to associate, join union, and engage in collective bargaining. CPC has long been improving its work environment with the implementation of a comprehensive care system, equal-gender practices, benefits, and communication channels that employees can use to enforce collective bargaining rights, and thereby strengthen employees' identification with CPC.

3.1.1 Diverse and inclusive workplace

CPC's main business activities are resource exploration, oil refining, manufacturing of petrochemical products, and petrol station service. Although past data has indicated male as the dominant gender in CPC's workforce for an extended period of time, the organization views itself as a gender-friendly business and offers equal recruitment, promotion, and education opportunities for all genders. The Company does not differentiate by gender in any way, and strives to open up career paths for outstanding employees of all genders. The number of female engineers hired in recent years has increased progressively, which is an affirmation for the progress that CPC has made in promoting a gender-equal workplace.

The refining business division has seen an increase of female engineers over the years

4.74 % (2022) → 6.23 % (2023)

Progress of the Gender Equality Team – 2023

- Organized 2 seminars that aimed to overcome the gender stereotype and promote equality between genders and thereby contributed to a fair society.
- Convened two gender equality team meetings.
- Recruitment flyers used female employees as the main visual theme.

Gender equality awareness and grievance channels

CPC has established a set of "Sexual Harassment Prevention, Complaint and Discipline Guidelines" and assembled a "Sexual Harassment Complaint Review Committee" to handle sexual harassment claims. A dedicated webpage and hotline have also been set up to handle sexual harassment cases. CPC received a total of 8 sexual harassment complaints in 2023; all of which have been investigated upon, and the Company will continue tracking progress and caring for the subjects involved.

CPC organizes training courses to promote employees' awareness toward the mainstream values on gender equality and human rights. Videos on anti-discrimination in the workplace and the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) are used as teaching materials to help employees learn the common forms of discrimination in the workplace. Upon the arrival of new employees, we introduce them to the new work environment and arrange courses on sexual harassment prevention and grievance mechanisms for them. Managers and staff of all levels are subjected to annual training on the topic of sexual harassment prevention and gender equality. In the future, CPC will continue to organize gender equality training and promote gender diversity awareness to employees of all levels; articles relating to gender equality will also be published on CPC Monthly as a way to convey gender equality and anti-sexual harassment. Overall, we hope to create a diverse workplace by guiding employees toward respecting all genders.

Grievance channels

Hotline

Written correspondence

Fax

	Hotline	Written correspondence	Fax
Brief description	For grievances that are raised through the telephone, the unit-in-charge will inquire about missing details and help the plaintiff complete the complaint form before forwarding it to the Complaint Review Committee.	Submit either directly or indirectly through the plaintiff's department to the Complaint Review Committee. Once the Complaint Review Committee receives a complaint form, the task force will call the plaintiff to offer care and emotional support while at the same time confirming details of the written form and inquiring for incomplete details to facilitate the investigation.	A dedicated line has been made available to receive complaints for confidentiality.
Outcome	Plaintiffs were first offered care and emotional support and subsequently given a detailed explanation of the investigation process. All plaintiffs were satisfied with the outcomes of their complaint.	Currently, all cases of complaint have been raised through correspondence, and the plaintiffs found the outcomes of their complaints to be acceptable.	Currently, all complaints are mailed directly to the Complaint Review Committee.

Support for female employment

In 1973, CPC moved ahead of industry peers and hired the first wave of female petrol station service staff as part of its gender equality policy. This movement not only raised customers' satisfaction and increased the amount of gasoline dispensed, but also inspired female employment in other industries that significantly increased the percentage of female workers in Taiwan. CPC has also been catering for the society's needs, especially at the time of stagflation when single mothers and women seeking re-employment are having difficulties securing a job for their livelihood. In an attempt to help the financially disadvantaged, CPC puts carwash facilities to the best use and hires single mothers and women seeking re-employment to provide car wash service at petrol stations.

Female empowerment

In terms of female empowerment, 2 out of the 13 directors (15.38%) of the 33rd board were female and 1 out of the 3 supervisors (33.33%) were female; whereas 5 out of the 15 directors (33.33%) 3 of the 34th board were female. CPC has been allocating annual budgets into the "Overseas Business Administration Training Program for Selected Senior Managers" since 2009 as a way to train senior management talents. In this program, senior managers are assigned to MBA courses at top 50 institutions rated by Financial Times. By 2023, 27.78% of senior managers stationed overseas were female, which surpassed the percentage of females among total workers (15.53%) and senior managers (22.13%). It is evident that CPC has committed significant resources and efforts into the empowerment of women. In the future, CPC will continue supporting the "Gender Equality Promotion Program" of the Ministry of Economic Affairs and convene regular meetings to discuss ways to increase the percentage of female managers progressively over time.

2 OF WHOM WERE FEMALE OF DIRECTORS
There were 13 seats on the 33rd board

1 OF WHOM WERE FEMALE OF SUPERVISORS
There were 3 seats on the 33rd panel

5 OF WHOM ARE FEMALE OF DIRECTORS
There are 15 seats on the 34th board

CPC's devotion to female empowerment

2015
CPC made an unprecedented decision to hire the first female vice president among all state-owned enterprises.

2018
Hired the 2nd female vice president.

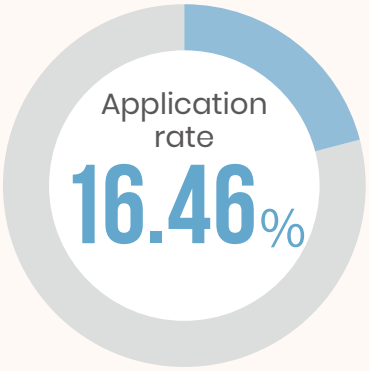
2020
The 3rd female vice president succeeded to duty, which was unprecedented in state-owned enterprises.

2023
One out of the five vice presidents were female; females accounted for about 22.13% of senior managers, which was higher than the percentage of females among total employees (15.53%).

Creating a gender-friendly workplace

CPC is committed to creating a work environment that is friendly to female workers. In addition to providing high-quality and certified nursery room, CPC also supports employees in taking unpaid parental leaves and observes the Act for Gender Equality in Employment and relevant rules.

Parental leave statistics - 2023



♀110 persons ♂75 persons

No. of employees eligible for unpaid parental leave

1,069

No. of employees applied for unpaid parental leave

176

♀100 % ♂98.24 %

No. of employees due to be reinstated (persons)

♀59 ♂57

No. of employees actually reinstated (persons)

♀59 ♂56

♀100 % ♂96.87 %

No. of employees reinstated from the previous year (persons)

♀32 ♂41

No. of employees retained for 1 year after being reinstated in the previous year (persons)

♀31 ♂41

» Note 1: Reinstatement rate = No. of employees actually reinstated in the year of report (2023) / No. of employees due to be reinstated in the year of report (2023).

» Note 2: Retention rate = No. of employees retained for 1 full year after being reinstated in the previous year (2022) / No. of employees reinstated in the previous year (2022)

As a support to the nation's efforts to raise fertility and create a friendly work environment, CPC introduced a new policy in March 2022 that gives employees with children below the age of 3 the option to reduce work duration by 1 hour per working day so that they may cater to family needs. In 2023, CPC had 974 employees with children below the age of 3 and 802 of them had taken up the policy. 593 of the applicants were male whereas the other 209 were female, representing a male-to-female applicant split of 73.94% to 26.06%. The number of applicants represented 82.34% of total employees with children below the age of three. 100% of the requests raised were approved.

Employee care and benefits

STEP 1

Employee health management plan

- Annual employee health checkup
- Environmental monitoring project for identification of hazard factors

STEP 2

Employee health management Statistical analysis

STEP 3

Adjust and plan for the next year Employee health management plan

To provide workers with a safe and healthy work environment, CPC arranges health examinations for employees on a yearly basis. In 2023, 15,505 employees took the general health examination and 2,733 employees took the special health examination for engaging in works involving noise, dust, organic solvents, specialty chemicals, ionized radiation, and abnormal pressures. Contractors are also required to comply with occupational safety and health laws and organize regular health checkups for employees.

To prevent employees from exposure to various work-related hazard factors, we have established the Work Environment Monitoring Plan and implemented work environment monitoring to prevent hazards.

In 2023, we performed work environment monitoring on chemical hazard factors (organic solvents, specialty chemicals, dust, and CO2) and physical hazard factors (noise exposure and wet-bulb globe temperature [WBGT] index). The monitoring results are within the permissible exposure limits. CPC also adopts occupational illness prevention, tiered health checkup, and health-oriented work arrangement among other mental and physical health protection measures. Physicians are hired or contracted to provide health services on-site, and a total of 1,234 on-site health service sessions were organized in 2023.

To further enhance the statistical analysis capacity of health management, we analyze employee examination results every year and list the top six anomalies. In 2023, these were chest X-ray, body weight, total cholesterol, low density lipoproteins, waist circumference, and systolic pressure. We also arranged health talks and health promotion activities based on these anomalies to guide employees' health management efforts.

Occupational safety and health training

PC has implemented a set of "Worker Safety, Health, and Environmental Protection Training Guidelines" to improve workers' professional capacity with respect to work safety and health and increase the effectiveness of training efforts. Training requirements are surveyed on a yearly basis to ensure that every job position has access to occupational safety and health certification training, credit courses, and on-the-job training. CPC held 211 sessions of work safety and health training in 2023 (including certification course, credit course, and on-job training course).

Health seminar and health promotion events

CPC arranges seminars of various themes that provide employees with the proper knowledge needed to maintain and manage health at work. Activities such as smoking cessation class, weight loss class, fitness class, aerobic program and hiking have been arranged to help employees develop healthy habits. A total of 245 health promotion seminars and events were organized in 2023.

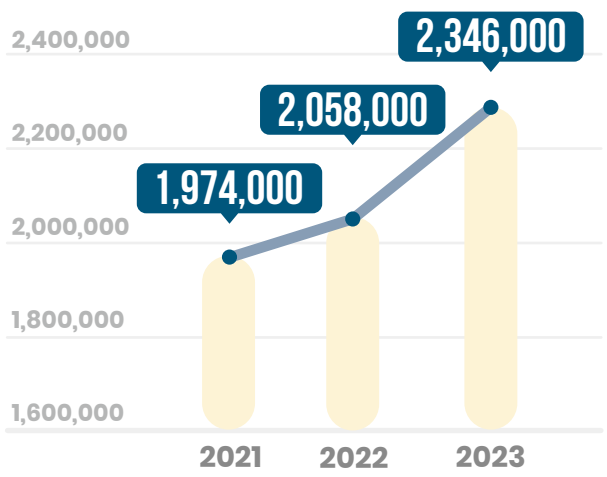
On-site health service

CPC invites occupational health specialists to provide one-on-one health consultancy service onsite on a monthly basis. The scope of consultancy covers general illness, abnormal workload, occupational illness, ergonomics, maternal health protection (for female workers who are pregnant or have given birth for less than one year), health checkup review, and health promotions. The process and outcome of consultancy are kept confidential.

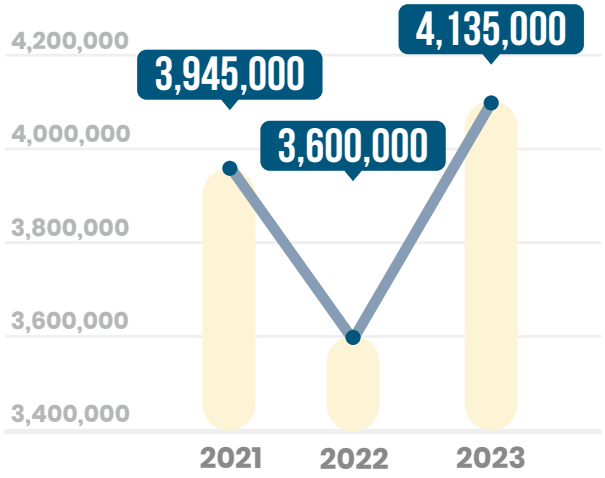
Employee welfare policy

To further improve the work environment, we release a range of bonuses based on the overall performance of business units and the contribution and performance of individual employees. We also make contributions to the welfare fund according to the "Employee Welfare Fund Act" and co-establish EWC with TPWA to organize various types of benefits and recreational activities. To promote employee welfare, we establish branch committees in different locations in addition to the mandatory National Health Insurance, Government Employee and School Staff Insurance, and Labor Insurance, we purchase additional group insurance, overseas travel insurance (business trips), and accident insurance for employees. We also provide employees with injury, disability, and death condolence funds to protect the work and life security of employees.

Benefit/subsidy (NTD)



Wedding benefit: Each employee is entitled to wedding subsidy of NT$6,000.



Child benefits: Each employee or their spouse is entitled to birth subsidy of NT$10,000 for every birth.

Comprehensive and diverse welfare system and facilities

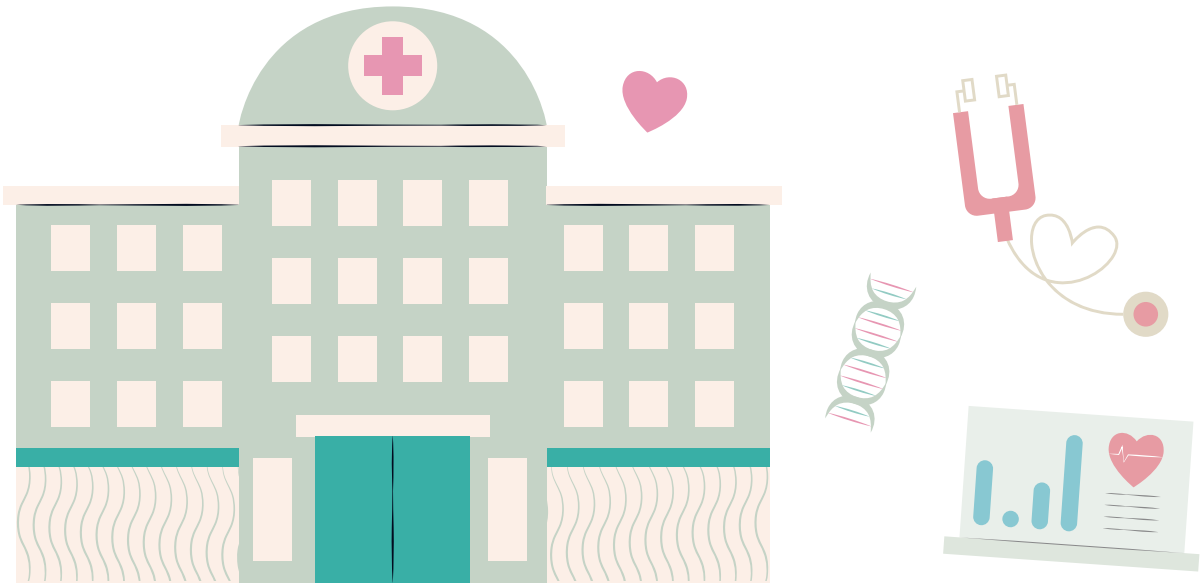
CPC provides employees with a wide range of welfare measures from children's scholarship, wedding subsidy, funeral subsidy, pension to health checkup subsidy. To cater to the needs of young employees and to enforce gender equality, CPC has even amended the terms of its employee loan and added wedding and childbirth as two permitted purposes of loan. With regard to pension and compassionate compensation, CPC observes "Regulations Governing Employee Retirement, Compassionate Compensation, and Redundancy for Subordinates of the Ministry of Economic Affairs" regulations on public officials, and has assembled an "Employee (dispatched and contract-based employees) Pension Fund Management Committee" and a "Labor Pension Review Supervisory Committee" to handle the management and payment of pension funds. CPC also coordinates with ROC Retired Petrochemical Workers' Association to care for retirees.

Besides setting up local welfare facilities, such as clinics, employee canteens, libraries, and tuck shops; and sports facilities such as various ballgame venues and gymnasiums, every business unit supports club activities such as ballgames, chess, hiking/mountaineering, swimming, calligraphy, and movie appreciation to help employees balance work and relaxation and boost morale.

CPC employee clinic – protecting workers' health

CPC has family clinics established at Taipei CPC Building, Taoyuan Refinery, Exploration and Production Department Miaoli Branch and Kaohsiung Refinery to provide employees with reliable and accessible medical service. Services provided at these clinics include general healthcare for adults and children; some would even offer health checkup and vaccination, and have been a major support to employees' physical and mental health. These clinics not only serve CPC employees including all office and plant workers, but also provide outpatient service to the general public, and have been well recognized within the neighborhood for their outstanding service quality, transparent pricing and contribution to community health.

Employee clinic at CPC headquarter

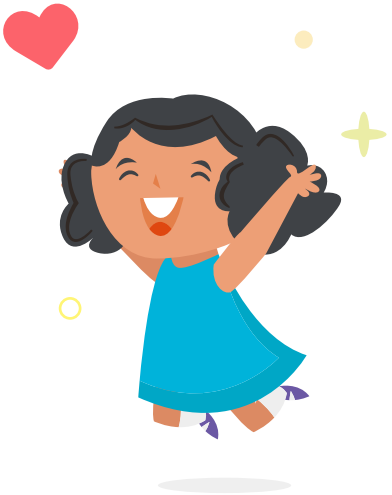


HIGHLIGHT

Excellent childcare support by CPC!

CPC has already set up three standalone, non-profit childcare facilities to cater to employees at Kaohsiung Refinery, CPC Miaoli office, and CPC Chiayi office. A childcare center was established at CPC Building in 2023 to cater to the needs of employees working at the headquarters. Aside from the accessible traffic, robust security control, and presence of professional childcare personnel, the childcare facility also sets its fees according to government rules, charging no more than NT$2,000 per child per month, or NT$1,000 for the second birth and no charge for the third birth onwards. The childcare center also observes the fee cap imposed by Taipei City Government Department of Social Welfare for quasi-public childcare services in the given area (NT$22,500/month for Xinyi district), and offers discounts for children and grandchildren of CPC employees. The childcare center not only provides excellent teaching for the children under care, but also helps parents lessen the financial burden of raising a child.

All CPC offices conduct yearly assessments on the feasibility of setting up their own childcare facilities, but due to the uneven distribution of employees, gender, differences in price level and needs etc., CPC has decided to continue surveying employees' childcare needs and updating findings onto the "eCPA Portal" maintained by Directorate-General of Personnel Administration, Executive Yuan, and have the offices-in-need coordinate with local branches of the CPC Employee Welfare Committee to sign privileged childcare service agreements with top-performing institutions in the local vicinity, as per conclusion of the 7th labor–management meeting. CPC has been improving the quality of existing childcare services for many years, and continues to attract utilization from employees by communicating exclusive privileges through webpage, newsletter, DM, etc. CPC also opens childcare services to children in the local neighborhood as a way to maintain community relations.



Contracted childcare institutions

19	16
No. of childcare facilities (facilities)	No. of children under care (persons)

Standalone childcare facilities

4	237
No. of childcare facilities (facilities)	No. of children under care (persons)

Non-profit kindergarten for children of CPC employees at Kaohsiung Refinery

Kaohsiung Refinery has a non-profit kindergarten established for employees, and it is currently one of the oldest kindergartens in Kaohsiung City. This kindergarten has cared for 70 batches of graduates to date. Featuring a spacious environment and competent staff, the kindergarten adopts an inquiry-based learning approach that is centered around the needs of children and emphasizes individuality, hands-on experience, and learning efficiency. The kindergarten has progressively renewed its equipment, and currently offers 9 classes to cater to 270 children from the age of 3 up to elementary school.

Non-profit kindergarten for children of CPC employees in Miaoli County

For CPC employees in Miaoli County, a non-profit kindergarten has been established to cater to 90 children from the age of 3 up to elementary school. Backed by a team of experienced teachers, the kindergarten aims to provide a safe, healthy, and diverse learning environment for children and adopts a holistic education approach that caters for children's mental as well as physical health. By incorporating Miaoli's local cultures (such as Banglong and Kite Festival) and CPC's resources, the kindergarten not only teaches children on human culture, but also helps children develop care for the community, an interest in learning, and confidence about themselves.

Non-profit kindergarten for children of CPC employees in Chiayi City

The non-profit kindergarten for CPC employees in Chiayi City is situated within CPC's Human Resource Training Facility that has a spacious, landscaped park, classrooms, and fitness center. The kindergarten currently takes in 106 preschool children from the age of 2 onwards and has 4 classes. With regard to the education program, the kindergarten will try to involve children physically in various affairs and design fun activities that improve children's physical movements and teach the importance of teamwork.

Taipei CPC Childcare Center

The Taipei CPC Childcare Center hires experienced professional childcare personnel and offers services for children between the ages of 0 and 2. All points of entry are covered by security personnel and an access control system, whereas the interior is decorated with healthy, green materials to give children a safe environment to grow. The center also prices its services below the upper limit for quasi-public childcare services imposed by Taipei City Department of Social Welfare, and offers privileges to employees' children and grandchildren as well. The center even takes in children from other childcare facilities and offers services to the general public when there is excess capacity.

Future prospects

The headquarters, internal departments, and all branches of the Employee Welfare Committee will continue engaging highly rated childcare institutions in the local vicinity to provide childcare services for employees at privileged rates. All arrangements will be disclosed on the corporate website, and employees in different regions may take advantage of the childcare agreement as well.

3.2 | Peace in Work

Short-term

- Continue enforcement of systematic management practices on contractor safety and health performance assessment, and enhance professional skill training for contractors
- Enforce work safety and health training and continue implementation of safety and health certification, credit and on-job training system
- Continue execution of work safety protections and emergency response drill

Medium/long-term

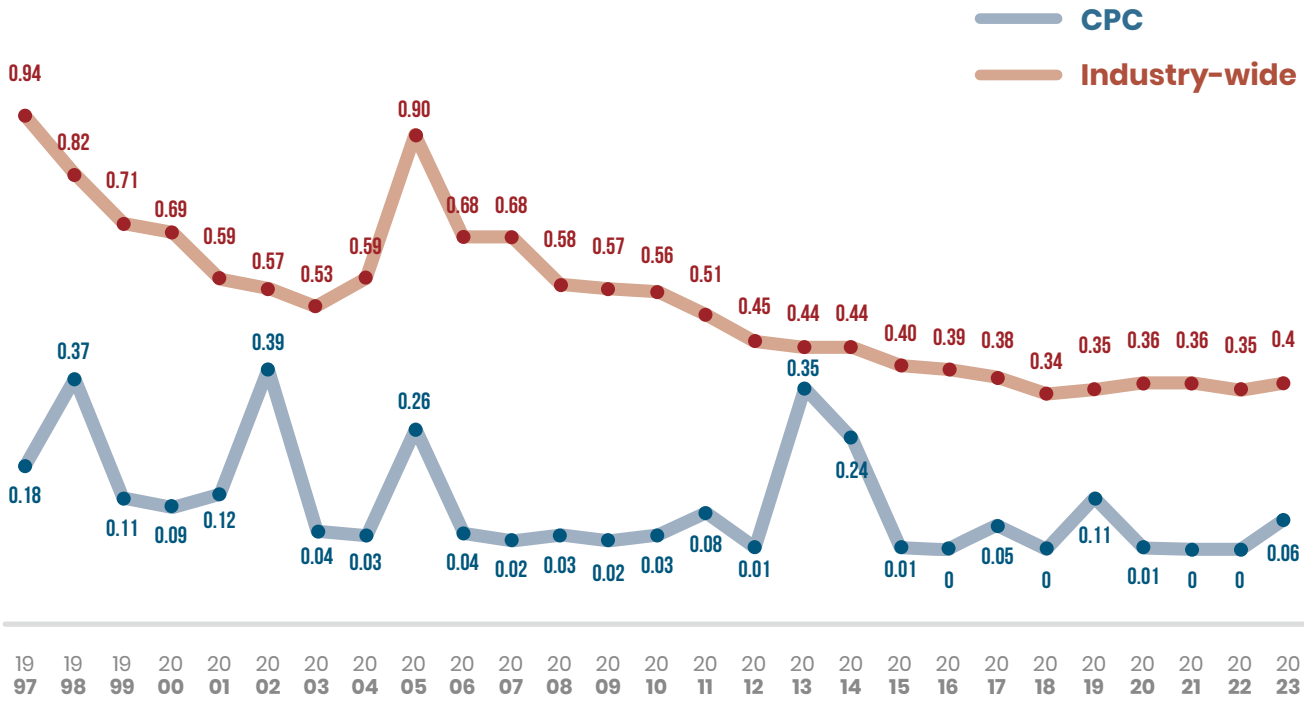
- Implement production safety management (PSM) system and make optimizations to 15 basic system functions
- Incorporate use of AI technologies for improved work safety management and reduced chances of accident
- Reduce frequency-severity indicator

Long term

- Sustain the pursuit of total industrial safety and zero industrial accident

CPC is committed to building a workplace safety culture that is centered around people. By adopting "total involvement, risk management, and healthcare" as the core value and "absolute work safety and zero hazard" as the ultimate goal, CPC continues working with employees and contractors to create a safe, healthy, and comfortable work environment. Its dedication to reducing occupational accidents has enabled the organization to keep the frequency-severity indicator below the industry average for 27 consecutive years.

Comparison of frequency-severity indicator – CPC vs industry

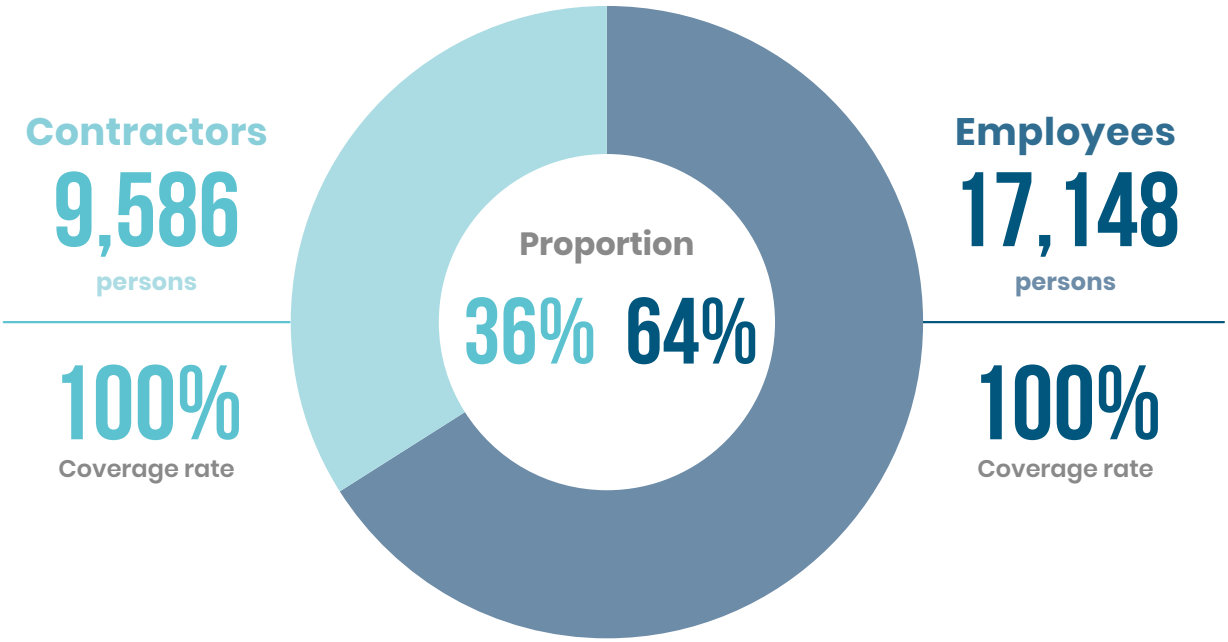


3.2.1 Workplace safety management

CPC has an "Occupational Health and Safety Committee" in place to oversee matters concerning employees' safety and health, such as safety and health training, health management, contractor management, and occupational hazard investigations and reports. The committee has 26 seats, including the president as the committee chair and 25 representatives from different units as members; 9 seats (35%) are allocated to workers' representatives, which is more favorable than what the laws require. The Occupational Health and Safety Committee convenes 4 meetings each year; worker representatives raised 7 proposals in 2023, which accounted for 87.5% of all discussions. All motions discussed were closely related to the workplace and employees' interests; from first-aid for operations involving acidic/alkaline solutions, prevention again heat hazard, explosion-proof training to Typhoon response, CPC ensures the safety and health of employees' work environment.

CPC adopts "Total work safety, risk management, and healthcare" as the guiding principles for its safety and health policy, and continues to implement a dual-system approach comprising an occupational safety and health management system and a process safety management (PSM) system. Transition to and validation of TOSHMS and ISO 45001 have been completed throughout the organization. As for the PSM system, CPC adopts the 14 management elements plus management responsibilities outlined by the Ministry of Labor in "Regulations on Regular Implementation of Process Safety Assessment" as the basic framework; a blueprint for the implementation of PSM system at trial sites was created in 2019, whereas full-scale implementation of PSM began in 2020 and was completed in 2021. Since then, CPC has assembled a PSM system consultant team comprising domestic scholars and experts, and arranged a series of PSM audits, counseling, training, and conferences and made improvements to the PSM framework based on recommendations of these scholars/experts.

Percentage of workers covered by occupational safety and health management system – 2023



» Note 1: Employee count (including contract employees) is based on data as of December 2023.

» Note 2: Contractor count was calculated as total 20,014,598 work hours in 2023 ÷ 8 hours ÷ 261 work days = 9,586 persons.

Due to the high risks involved with oil refining and petrochemicals, CPC complies strictly with the Occupational Safety and Health Act and related laws, and has assembled separate audit teams for refinery, excavation, marketing, and construction activities, whose responsibilities are to perform safety and health audits onsite on a monthly basis. Each unit is also responsible for performing daily inspections and enforcing risk-based audits within their work sites. A total of 39 work safety audits and 12 engineering audits, including routine and non-routine, were conducted in 2023. CPC devises response actions based on the risks identified and has various emergency response drill plans in place. Emergency response drills are organized regularly to improve the ability to respond to accidents and prevent disasters. CPC organized 359 disaster prevention drills in 2023, including 4 expanded emergency response drills and 5 department-level ad hoc emergency response drills.

Expanded emergency response drill – 2023

We constantly implement various plans to improve workplace safety, contractor management, and OHS. We also educate all units to implement such improvements and adopt best practices. A major incident refers to any single incident that results in death or any single incident that results in the disability of three people or more or a single penalty of NT$300,000 or more. CPC encountered no major work safety incident of the above nature in 2023, but was imposed fines totaling NT$1.35 million for 10 work safety violations by the authority. These penalties mostly involved inadequate safety and health equipment or measures on site and absence of communication and onsite inspection for outsourced tasks. The violations were reviewed and improved upon and included in the audit checklist immediately upon discovery.

CPC conducts pre-work inspection for enhanced contractor management. Where high-risk work activity is involved, CPC would assign representatives from the supervising department and the local department to inspect work site in the company of the contractor, and devise safe practices before proceeding with work activities. For enhanced work supervision, CCTV is deployed at the work site so that compliance with safety rules can be monitored remotely.

Article 10-2 of the Private Security Service Act states that: “When a security company hires security guards, it shall offer them pre-service professional training for one week or above. For existing security guards, it shall provide them with in-service training at least four hours every month.” At CPC, we evaluate security service providers by taking into consideration how they manage and train security guards with respect to legal knowledge, work skills, human rights awareness, and etiquette. Annual emergency response drills are held at guard stations and administrative buildings for premise security. All CPC security guards are outsourced labor.

No. of security guards[1]	**19** persons	=	**100%** Special training completion percentage
Subjected to special training	**19** persons		

» Note 1: All CPC security guards are outsourced labor.

» Note 2: This data pertains to security guards at CPC's headquarter.

3.2.2 Employee safety protection

For the protection of employees' safety, CPC complies with the Occupational Safety and Health Act and allows employees to withdraw from job duties when there is potential imminent danger, provided that doing so does not compromise the safety of other colleagues. Furthermore, CPC also assembled the Accident Case Study Working Team to gather information on all industrial safety accidents at home and abroad to investigate their causes and accident types. The team has also published the Industrial Safety Case Studies as a learning resource of accident investigation to improve employees' ability to analyze accidents and thereby enhance overall industrial safety performance. For the health and comfort of the work environment, CPC monitors the work environment regularly and organizes general and special health checkups to help workers prevent against occupational hazards. CPC adopts a tiered management approach based on the outcome of employees' health checkup; those that have been classified as tier 4 are subjected to hazard control and appropriate management measures to minimize the risk of a hazard.

CPC's employee safety protection guidelines, procedures, and principles

Occupational safety and health consultation and communication procedures

These procedures have been established to support the development of standard communication channels between internal departments, and to allow proper reception and response of messages from external stakeholders so that employees and the public may appreciate CPC's persistent efforts in safety and health, and contribute to the harmony of the community.

Prevention against abuse when performing duties and action guidelines

Outlines the reporting channels, grievance procedures, and solutions in cases when employees are intimidated, threatened, or attacked while performing duties. It is intended to provide assurance for employees' safety and health.

Occupational illness management policy

The policy introduces enhanced management and prevention of occupational illness for employees' health. For any suspected case of occupational illness, an investigation team will be assigned immediately to evaluate the situation and make proper work arrangements depending on the employee's health state and capacity. Assistive tools will be provided as deemed necessary to perform works.

Work safety accident investigation and management principles

We have defined processes for reporting, investigation, report writing, statistics production, and follow-up of accidents. We have also designed the online "Hazards and Emergency Report Form" on the intranet to promptly capture the actuality of accidents occurred in all units.

Occupational injury

CPC conducts regular statistical surveys on all employees and contractors (non-employees) to learn about the current state and causes of occupational hazards. The most frequently reported types of occupational hazards in 2023 included falls, tumbles, falling objects, cuts, slits, abrasions, impacts, clampings, jammings, explosions, and contact with high or low temperatures and hazardous substances. Data on disabling injuries is collected and reported on a monthly basis. According to statistics, no work-related death was reported among CPC employees or non-employees under the organization's control in 2023; a total of 5 employees and 8 non-employees suffered severe injury; and a total of 160 close calls were reported in 2023, and 56 of which concerned production procedures. No personnel had died or was injured due to occupational illness in 2023.

Occupational injury statistics - 2023

	Injury count	Death count
Employees	5	0
Non-employees	8	0

	Total absent days	Total work days	Absenteeism rate (%) (A.R)	Total disabling injuries	Total work hours	Disabling injury frequency rate (%) (F.R.)	Total days lost to injury	Total work hours	Disabling injury severity rate (%) (S.R.)
Employees	41,202.5	4,153,818	**0.99**	3 [1]	34,714,837	**0.08**	43	34,714,837	**1.24**
Non-employees	No available statistics			12 [2]	18,032,846	**0.66**	6,135	18,032,846	**340.21**
	Calculation of absenteeism rate (A.R.)			**Calculation of disabling injury frequency rate (F.R.)**			**Calculation of disabling injury severity rate (S.R.)**		

Work injury description	Falls, tumbles, explosions, contact with hazardous substances, clamping, jamming, impacts, cuts, slits, abrasions, contact with high and low temperatures
Whether resulted in personnel death	No

Description

1 Formula for calculations; include permanent and non-permanent employees
- Absenteeism rate (A.R.) for employees and non-employees = [total absent days (including unpaid leave, sick leave, and work injury leave)] / [total work days * total employee count]. Disabling injury frequency rate (F.R.) = (number of disabling injuries×106) / total work hours [rounded down to two decimal places]
- Disabling injury severity rate (S.R.) = (total days lost to injury×106) / total work hours [rounded down to the nearest integer]
- Average days charged for disabling injuries (ADCDI) = (disabling injury severity rate (S.R.)) / (disabling injury frequency rate (F.R.))
- Absence rate is calculated based on employees' absence from work due to loss of working ability, not limited to work-related injuries or illnesses.

2 It excludes approved holidays or leave, such as folk festivals, training, maternity/paternity leave, and compassion leave. Absenteeism includes unpaid leave, sick leave, and compensation leave for injuries at work.

3 The number of days lost from the inability to work by employees due to work-related injuries or diseases.

4 Work-related diseases shall be determined based on the diagnosis of occupational specialists of a hospital.

5 Disabling injuries do not include minor injuries, i.e. injuries healed on the same day, and after which employees can return to work the next day.

6 Total lost days include the sum of days lost due to four types of disabling injuries: death, permanent total disabilities, permanent partial disabilities, and temporary total disabilities.

7 Both deaths and permanent total disabilities are calculated as 6,000 days lost.

Prevention strategies

To prevent occupational hazards, CPC has been making ongoing improvements to work safety measures such as the development of an automated work safety inspection system, the introduction of AI technology for identifying contractors' violations, and the implementation of facial recognition and license plate recognition for enhanced control over contractors' access to the premise. CPC incurred NT$2.505 billion of expenses on occupational safety and health in 2023.

CPC's Work Safety Week 2023

Work Safety Week 2023 began on July 3 at the 13F event hall of CPC Building with an emphasis on "intrinsic safety, predictive maintenance, and AI-assisted disaster prevention." The opening was hosted by Vice President Chia-Shou Chiu and attended by level 1 managers and work safety managers, who stated their commitments to enforcing work safety throughout the organization.

CPC's Work Safety Week 2023

Valued guests including Director-general Tzu-Lien Tzou of Occupational Safety and Health Administration (Ministry of Labor), Chairperson Po-Chang Lee of Institute of Labor, Occupational Safety and Health, and President Chiu-Rung Chen of Chang Jung Christian University were also invited to unveil this year's Work Safety Week. What came after the opening was a series of work safety-related training and awareness campaigns including firefighting skills, keynote speech on occupational safety and health, workplace health seminar, and work safety competition. The Work Safety Week updates employees on relevant work safety knowledge, and in doing so keeps them informed, alerted, and in the optimal state at all times.

5G AIoT Conference

On July 5, 2023, CPC held a 5G AIoT Conference and invited directors of the Company to take part in discussion. Chao-Min Wang, head of 5G AIoT Project Office, was invited to deliver a keynote speech on "CPC's Plans for 5G AIoT Management Strategy"; from the Refining & Manufacturing Research Institute, Chief Mei-Chin Li delivered a speech on "Machine Dog – A Bionic Automated Inspection Device" whereas Chief Shu-Li Wang presented "Equipment Predictive Maintenance Using PI System"; and from the Natural Gas Business Division, Manager Yen-Ting Kuo gave a speech on "AI-assisted Pipeline Inspection." A demonstration of inspections using machine dog was also performed on site, so that participating guests and employees may have a better understanding of the Company's progress in 5G AIoT.

5G AIoT Conference

Senior Manager PSM Conference

On February 14, 2023, CPC held a Senior Manager PSM Conference and invited Chairman Shuh Woei Yu from Safety and Health Technology Center to deliver a keynote speech on "Process Safety Leadership." The conference was hosted by CPC Chairman, and saw participation from vice presidents and level 1 managers of various departments. Through the five topics of discussion including management responsibility, process hazard analysis, alerts management, training, and incident investigation, the concept of PSM has been rooted deep in the minds of senior managers.

Senior Manager PSM Conference

Training course on the incident investigation method

On March 23 and May 24, 2023, CPC invited Project Manager Ji-Fu Dai from Safety and Health Technology Center to give presentations on "Overview of Incident Investigation" and "Introduction to Incident Investigation Methods," so that the audience may have a better understanding of how to uncover the truth behind an incident, the importance of identifying the root cause in a process incident, and possible improvements to risk control and defects within a management system so that similar occurrences can be avoided.

Training course on the incident investigation method

Establishment

Guidelines on Prevention and Resolution of Heat Hazard in High-temperature Outdoor Operations

CPC introduced a set of "Guidelines on Prevention and Resolution of Heat Hazard in High-temperature Outdoor Operations" on July 26, 2023 in light of how climate change in recent years has increased risks of heat hazards associated with high-temperature outdoor operations, whereas each subordinate unit has also devised its own "Heat Hazard Prevention Plan." Before engaging in operations that are prone to high risk of heat hazard, workers are required to check heat hazard risk for the given location using smartphone, complete the "Hazard Prevention Checklist for High-temperature Outdoor Operation," and proceed with the task only when risks have been acknowledged and addressed. Furthermore, workers are required to monitor heat hazard risks continuously using smartphone and make rolling adjustments to the hazard management measures.

3.3 Talent Recruitment and Development

CPC has established well-defined employment policies and has never hired child labor. In addition, to provide vulnerable groups with more job opportunities, we give extra credits to people with disabilities and indigenous peoples. Once recruited, employees involved in the same line of work are compensated equally, and are not differentiated by ethnicity, thoughts, religion, political association, locality, place of birth, gender, sexual orientation, marital status, appearance, disability, or union membership. Furthermore, CPC only deals with vendors that abide by the above principles, which is why no complaint of gender or racial discrimination has occurred for many years. In 2023, there was no report on violation of human rights, non-compliance with non-discrimination, or impact on business activities as a result of human rights.

Furthermore, with regard to the employment of persons with disabilities, CPC first introduced the idea of "compassion gas station" in 2001 and has since provided counseling and training for persons with disabilities, and offered them employment opportunities as well as assistance for developing professional skills. These actions are consistent with CPC's vision to protect the work rights and human rights of persons with disabilities.

3.3.1 Human resources management

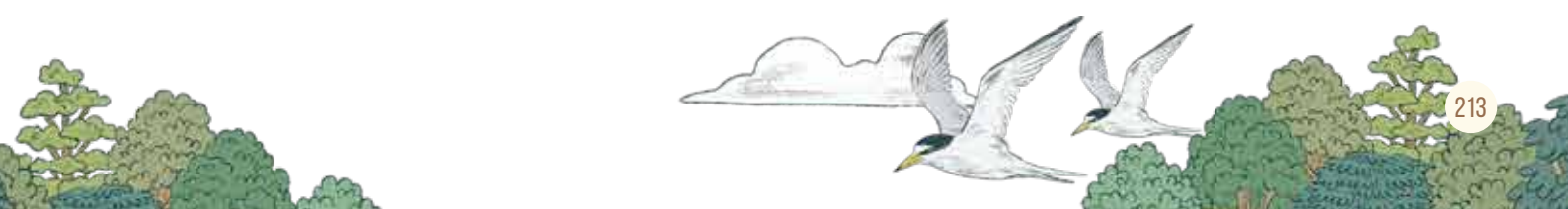
CPC had a total of 17,142 employees in 2023 (including direct workers, research staff, support personnel, management staff and contract personnel), or 18,151 including interns.

CPC operates in the petrochemical industry. CPC recruits most of its employees from college graduates of science studies, many of whom are assigned to work as operators. For this reason, males represent a dominant percentage of the workforce at 84.47%, whereas females represent the other 15.53%. However, CPC does not differentiate or discriminate between genders when assigning duties, and females accounted for 22.13% of senior managers in 2023. In terms of academic background, most employees graduated from senior high schools, colleges, and universities, which accounted for 78.21% of total employees, and 20.26% hold a master's degree. Additionally, CPC was obligated to hire a minimum of 527 persons with disability (including interns), and actually hired a total of 850, which exceeded the requirement by 323. Furthermore, the Hualien Oil Supply Service Center, Eastern Businesses Department, Oil Product Marketing Division, hired indigenous people above the minimum requirement stated in the "Indigenous Peoples Employment Rights Protection Act."

2023 employees by employment contract Unit: persons

	Full-time staff	Contract workers	Interns	Total headcount
2021	16,226	67	938	17,231
2022	16,613	69	1,153	17,835
2023	17,076	66	1,009[note1]	18,151

» Note 1: CPC hired 1,009 interns, which was equivalent to 1,009 employees.



		2021	2022	2023
Employee count	Female (persons)	2,495	2,586	2,663
	Male (persons)	13,798	14,096	14,479

			Persons	Percentage (%)[Note 2]	Persons	Percentage (%)[Note 2]	Persons	Percentage (%)[Note 2]
Contract based	Full-time staff	Female	2,458	15.08	2,549	15.27	2,627	15.32
		Male	13,768	84.52	14,064	84.32	14,449	84.30
	Part-time staff[Note 1]	Female	0	0	0	0	0	0
		Male	0	0	0	0	0	0
	Temporary employees[Note 1]	Female	37	0.22	37	0.22	36	0.21
		Male	30	0.18	32	0.19	30	0.17
	Employees with no guaranteed hours[Note 1]	Female	No data	No data	No data	No data	No data	No data
		Male	No data	No data	No data	No data	No data	No data

» Note 1: Part-time staff are those who work for fewer hours than full-time staff on a weekly, monthly, or yearly basis; temporary employees are contract workers or those who have signed contracts to work for a defined duration (i.e. fixed term); employees with no guaranteed hours refer to those who are not guaranteed a minimum or fixed number of work hours on a daily, weekly, or monthly basis (such as interns).

» Note 2: As a percentage of total employees (including interns).

		2021	2022	2023
Non-contract based	Non-employee workers	Service contractors (persons)	1,957	1,950	1,872

» Note: Non-employee workers include cleaners, security officers, and drivers.

Employment of persons with disabilities 2021–2023

	Persons with disability (persons)	As a percentage of total employees (including interns) (%)
2021	811	4.71
2022	854	4.78
2023	850	4.68

Employment of indigenous people 2021–2023

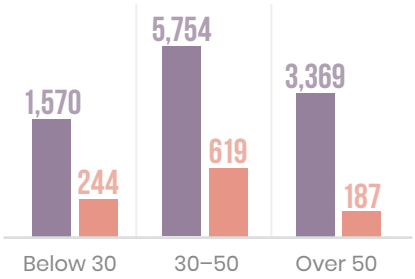
	Indigenous people (persons)	As a percentage of total employees (%)
2021	71	0.41
2022	88	0.49
2023	103	0.56

Employee gender by job role – 2023

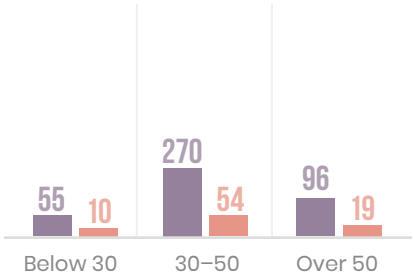
● Male ● Female

(unit: persons)

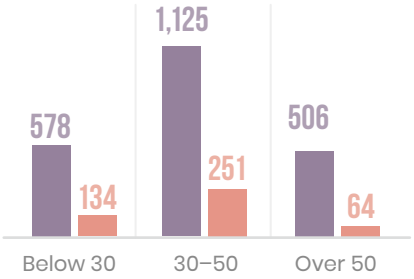
Direct workers



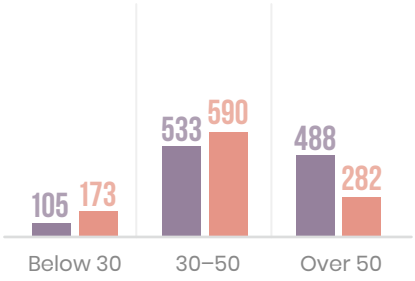
Research staff



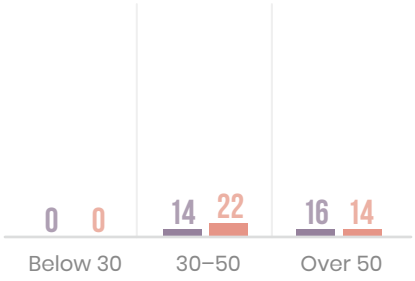
Support personnel



Management staff



Contract workers



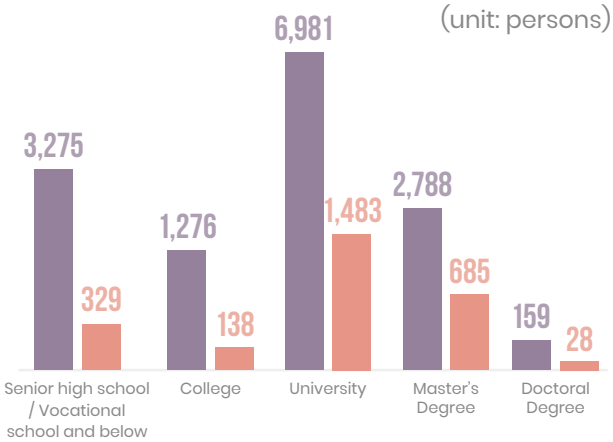
Total

Direct workers	11,743
Research staff	504
Support personnel	2,658
Management staff	2,171
Contract workers	66
Total	**17,142**

(including contract workers)

Employee academic background - 2023

(unit: persons)



Total 17,142 persons

Female-to-male ratio of basic salary and remuneration – 2023

Region: Taiwan

	Managerial personnel	Non-managerial personnel
Average salary - females (NTD)	♀ 108,372	♀ 60,654
Average salary - males (NTD)	♂ 107,984	♂ 59,660
Female-to-male ratio	1	1.02

New recruits bring energy and creativity to CPC, which is why the Company recruits fresh talents on a yearly basis. CPC recruited 1,277 new employees in 2023, which accounted for 7.44% of total headcount (i.e. the employment rate). A total of 817 employees departed in 2023, representing a departure rate of 4.76%, but after excluding the 534 retirees, the attrition rate was calculated at 1.65%. Most employees commit to long-term service until retirement, and retirees averaged 30.34 years of service at retirement, indicating a high degree of loyalty and strong identification with CPC.

Compensation policy

As a state-owned enterprise held by the Ministry of Economic Affairs (MOEA), CPC adopts a compensation policy that conforms with the "Recruitment Policy and Notes on Compensation for Employees of MOEA Subordinates." Performance bonuses are paid according to "Implementation Guidelines on Performance Bonus for MOEA Subordinates." CPC adopts the policy of maintaining salaries equal across employees of the same grade, with differences being determined by seniority and the role undertaken. Furthermore, given that CPC does not offer additional pay for managerial role or salary-linked performance bonus as do some state-owned enterprises, there was no significant income difference between top-paying roles and entry-level roles.

Male-to-female Compensation Ratio

Location: Taiwan Unit: NTD	2021	2022	2023
Male-to-female compensation ratio for managerial roles	1 : 1.01	1 : 0.99	1 : 1.00
Male-to-female compensation ratio for non-managerial roles	1 : 0.99	1 : 1.00	1 : 1.02

	2021		2022		2023	
	Male	Female	Male	Female	Male	Female
Average salary for managerial roles (NTD)	102,437	103,351	109,020	108,338	107,984	108,372
Average salary for non-managerial roles (NTD)	56,081	55,624	60,185	60,313	59,660	60,654

Region: Taiwan Unit: NTD

	Male			Female		
	2021	2022	2023	2021	2022	2023
Starting salary for local entry-level employees (NTD)	24,451	30,515	30,515	24,451	30,515	30,515
Local statutory minimum salary (NTD)	24,000	25,250	26,400	24,000	25,250	26,400

Annual total compensation ratio

3.2287

» Note: Annual total compensation ratio = highest personal annual income / median annual income of all CPC employees

Percentage change of annual total compensation

0

» Note 1: Percentage change of annual total compensation = percentage increase of annual income for the top-earning individual / percentage increase of median annual income across all CPC employees

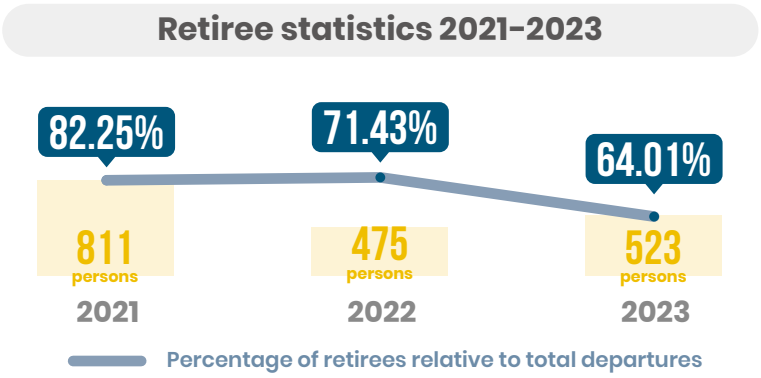
» Note 2: There was no change in annual income of CPC's top-earning individual in 2023.

Recruitments/departures – 2023 (by age and gender)

	New employees (persons)		Employment rate (%)[Note 1]		Departed personnel (persons)		Departure rate (%)	
	Male	Female	Male	Female	Male	Female	Male	Female
Below 30	522	98	3.05	0.57	60	7	0.35	0.04
30-50	548	74	3.20	0.43	156	25	0.91	0.15
Over 50	29	6	0.17	0.04	500	69	2.92	0.40
Total	**1,277**		**7.44**		**817**		**4.76**	

» Note 1: Employment rate = [No. of new recruits in the year of report (2023)] / total employee count in the year of report (2023) ×100%

» Note 2: Departure rate = [No. of resignees + retirees in the year of report (2023)] / total employee count in the year of report (2023) ×100%



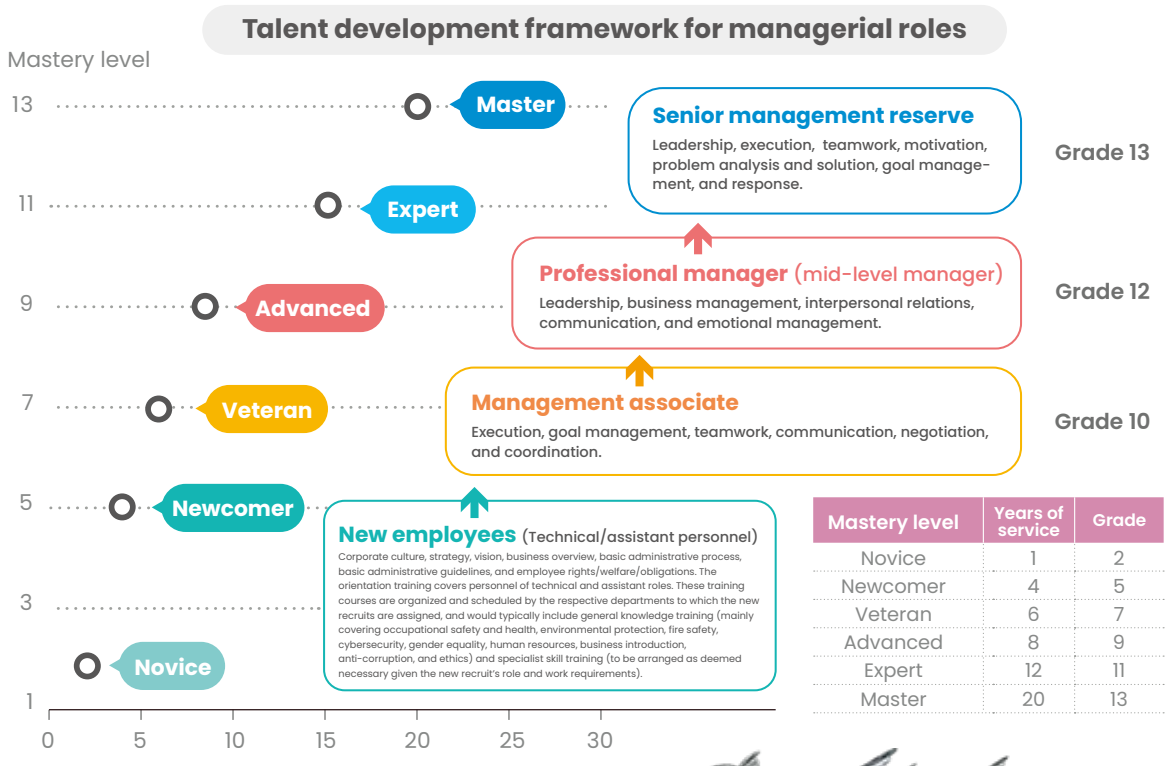
CPC handles employees' retirement, compassionate compensation, redundancy, and privileged departure in accordance with "Regulations Governing Employee Retirement, Compassionate Compensation, and Redundancy for Subordinates of the Ministry of Economic Affairs" and "Notes on Downsizing for Subordinates of the Ministry of Economic Affairs." CPC had 817 employees depart in 2023; 523 or 64.01% of whom were retirees.

3.3.2 Talent development

CPC has implemented a robust training framework that aims to equip the workforce with the proper knowledge and skills. Meanwhile, a rational promotion system is available to ensure that employees are selected, trained and recruited in a manner that supports the Company's growth. We survey and research the professional capacity needed for each role, and use the findings to provide reference for internal promotion, job rotation, and recruitment interviews in order to select personnel with qualified work attitude and mindset. Meanwhile, we provide management skill training for managers and employees of all levels in order to expand management reserve and strengthen overall management capacity. In addition, we encourage employees to take national skill qualification tests and support employees in acquiring licenses and certifications related to health, safety, and environmental protection (HSE). We have also established directions for further education to encourage employees to engage in lifelong learning, second specialty training, in-house and outsourced training, further education after work, foreign language education, and job transfer training.

Comprehensive talent development framework

CPC has developed its talent training system to cater to the roles and skills needed within the organization, and uses various software, hardware, and assistance to support the training effort. Each internal unit is required to identify work goals and training emphases based on corporate vision, organizational prospects, current year's training policy, and the skills needed for business growth and employees' duties, and devise and adjust execution of training plans accordingly. It is our hope to expand employees' professional capacity and skills closely in line with the organization's growth.



Mastery level	Years of service	Grade
Novice	1	2
Newcomer	4	5
Veteran	6	7
Advanced	8	9
Expert	12	11
Master	20	13

» Note: Colleague promotion comprehensively evaluates basic qualifications, seniority and individual business performance.

Management skill training by employee grade

Management skill training

	Managerial personnel		Professional	Junior Management
Management associates	**Senior Management** Organizational management practical training	**Officers** Leadership ability and strategic planning training	**Management reserves** Management concepts and routine management practical training	**Onsite leaders and manager and assistant manager of petrol station** Job instruction, job improvement, and job relations
On-the-job	Operations, management, and development strategies and team leadership effectiveness management	Management ability development and training	Management ability development and training	Implemented by unit supervisors or the human resources department as necessary

Senior management skill development map

Background

Senior managers of CPC are defined as managerial staff of grade 13 and above. None of the senior managers at key operating locations in Taiwan are foreigners, and all senior managers are R.O.C. nationals.

By helping senior management reserves expand their vision of the business environment and develop business administration skills, they will be able to support CPC's growth and lead the team toward accomplishing tasks. The Company has designed a series of training courses based on the senior manager skill model that target specifically the management reserves. These courses aim to improve trainees' skills with respect to "leadership," "execution," "teamwork," "motivation," "problem analysis and solution," "goal management," and "response."

Outcomes

The 2023 senior management reserve training was delivered through E+C (e-learning+classroom), a combination of digital and physical teaching, using a diverse range of learning tools including CPC-Live for online course instruction and classroom sessions where the instructor may interact with trainees for more effective learning. Interactive group courses have also been arranged to facilitate interaction between trainees.

As a support to CPC's organizational transformation and adoption of the enterprise management approach, the Company has trained 179 mid-level managers over the last 5 years (2019–2023), and 88 (49.16%) of whom have been promoted to senior managers of grade 13 and above.

13 GRADE

88 Persons

whom have been promoted to senior managers of grade 13 and above.

High performance team drill in senior management reserve training

CPC employees averaged 53.65 hours of training in 2023, up 2.51 hours from the 51.14 hours in the previous year. Females averaged 55.60 hours of training, which was slightly higher than the 53.29 hours for males. This data shows that CPC does not differentiate or discriminate between genders in terms of talent development. Training budget for 2023 totaled NT$145 million. CPC organized a total of 3,605 training sessions that received 123,372 enrollments in total; 16.92% of such enrollments were from female employees, which exceeded the overall percentage of female employees (15.53%).

Training-related indicators

Training indicators	2021	2022	2023
Total employee training expense (NTD millions)	142.00	144.48	144.62
Total hours of employee training (hours)	635,824.00	825,242.8	893,783.3
Total employee training expense/total revenue (%)	0.02	0.01	0.01
Total employee training expense/total employee count (NTD/person)	8,715.00	8,669.22	8,436.59

Statistics on 2023 employee training

Training Type	Training classes (classes)	Total enrollments (enrollment count)	Male (persons)	Percentage of males (%)	Female (persons)	Percentage of females (%)
Supervisor training	25	1,023	836	81.72	187	18.28
Professional training	2,428	70,513	60,118	85.26	10,395	14.74
Second specialty training	74	5,239	4,530	86.47	709	13.53
Self-motivation training	0	0	0	0	0	0
Internal instructor training	1	23	11	47.83	12	52.17
Other training	856	43,769	34,560	78.96	9,209	21.04
Orientation training	210	2,778	2,421	87.15	357	12.85
Skill qualification training	11	27	25	92.59	2	7.41
Total	**3,605**	**123,372**	**102,501**	**83.08**	**20,871**	**16.92**

Statistics on 2023 employee training

Title	Trainee count (persons)	Training hours (hours)	Average training hours per person[Note 1] (hours)
Managerial personnel	3,201	121,092.6	37.83
Non-managerial personnel	13,460	772,690.7	57.41
Total	**16,661**[note 2]	**893,783.3**	**53.65**

» Note 1: Average training hours per person = training hours/trainee count.

» Note 2: Total trainee count (16,661) was different from total employee count (17,142 excluding interns) because not all employees underwent training in the year.

HIGHLIGHT

Bringing new talents into the energy industry through talent expansion

To resolve the disruptions in talent succession, CPC has been exploring action strategies, work targets, and suitable training plans on a yearly basis by taking into consideration the corporate vision, organizational prospects, future growth requirements, and internal workforce shortages.

2019

CPC's short-/medium-/long-term talent development plan

Training courses have been planned to help employees develop the professional capacity needed to support future talent requirements, corporate transformation, and future prospects.

2020

Rigorous talent selection and shortened learning curve for new recruits in the last 5 years

All internal units conduct ongoing reviews and propose response measures to help new recruits familiarize with the tasks on hand and thereby improve work efficiency.

Meeting discussions on promotion criteria and skill profile for CPC employees

After determining the promotion criteria and skill profile for each grade, internal units were instructed to propose a promotion system for various job roles that is suitable given the nature of their duties, so that employees may follow and develop the professional capacity and skills needed for promotion.

2021

Course plans for CPC factory managers and task force meetings

Based on meeting resolutions, CPC has planned courses of relevant themes including PSI production safety information, transfer instrumented system, MI (mechanical integrity), operational integrity, and accident investigation that apply only to factory managers.

2022

Manpower analysis and training development meetings

Hosted by the Chairman and President, these meetings are intended to address personnel issues and devise proper responses. Four meetings were held in 2023, during which internal units were asked to analyze employees' age distribution and service duration in order to identify any potential disruption of talent succession caused by labor shortage. Each unit was also required to propose responses and improvements, and discuss the potential challenges. Through internal communication, CPC hopes to make optimal use of human resources, minimize the impact of talent shortage, and support future business transformations.

2023

Early recruitment of manpower

CPC made the decision to recruit 57 additional headcounts previously scheduled for 2024 early during the 2023 recruitment. By recruiting manpower ahead of time, CPC is able to apply training early for transformation needs, minimize the shortfall of actual recruitment from budgeted headcount due to late onboarding, and gradually resolve the issue of experience transfer caused by talent disruption.

Human Resource Training Facility

CPC has established a Human Resource Training Facility that organizes seminars and training classes to support CPC's business development and national growth. The facility trains employees on a wide range of expertise from refinery, excavation, engineering, marketing, administration to environmental safety, and offers vertical advancement (entry-level, mid-level and advanced level) as well as horizontal advancement (across different fields of expertise) paths to help employees develop the skills needed for their career.

Since the new building was commissioned in 2014, the number of classes has increased significantly from 327 in 2014 to 524 in 2023, whereas class enrollments have also grown from 13,575 in 2014 to 31,246 in 2023.

CPC E Library

Background

A "CPC E Library" combining new information technology and learning application has been set up on the intranet to provide diverse e-learning resources that employees may use to expand their professional capacity and work skills. The E Library carries the mission to facilitate creative sharing, knowledge enhancement, and digitalized service, and is an integral part of CPC University. In 2018, the platform underwent an upgrade to introduce a hybrid learning approach, using a combination of mobile learning and classroom courses to greatly increase the frequency of digital learning and the overall outcome. In 2020, a Technology-assisted Learning Team was created under the Human Resource Training Facility to promote the use of technology in learning applications. This led to the creation of CPC-Live, a video conferencing system that supports remote conferencing, real-time interaction, live stream/broadcast of course activities, production/presentation of cloud materials, pre-recording of course content, video playback, etc., which opened up opportunities for a wide variety of hybrid learning applications from E+C (e-learning+classroom), live + non-live, online + offline, self-learning to group learning. CPC has made drastic changes to the way it trains employees, and embraced the use of digital technologies to support a diversified learning approach.

CPC E Library

Outcomes

- Eight sets of multimedia teaching materials have been developed to train new CPC recruits in refinery and environmental protection skills. 174.50 hours of video streaming materials were created/amended by contractors, whereas 164.60 hours of teaching materials were produced in-house.
- The CPC E Library was used 405,733 times; it delivered 57,544 course sessions, accumulated 1,357,440 course enrollments, and completed 405,711 training hours.
- CPC-Live continued to support key business activities and connect course resources from outside the organization. It delivered a total of 165 live streams/broadcasts, 448.90 training hours, and accumulated 7,116 course enrollments.

Orientation for new recruits - 2023

Background

Seminars for new recruits were organized in 2023 and were delivered online via CPC-Live in conjunction with classroom sessions. This combination increased interaction between the instructor and trainees in such a way that improved training effectiveness and enabled new recruits to become familiar with the tasks assigned in shorter time. Trainees were required to complete an online exam at the end of each course by scanning a QR code. Online courses have been made available on CPC E Library where employees can access and learn at their convenience.

Outcomes

Two seminars for new recruits were organized in 2023; they were delivered through E+C (e-learning + classroom), a combination of digital and physical teaching, using a diverse range of learning tools. Interactive group courses have also been arranged to facilitate interaction between trainees. Enrollment count for the seminars totaled 206.

Orientation for new recruits – 2023

Development of licensed specialists: Training course for gas vapor recovery testing personnel

Background

For the improvement of air quality in Taiwan, CPC signed an agreement with Environmental Protection Personnel Training Institute, Ministry of Environment (MoE) to co-host courses in accordance with the MoE's "Gas Station Gasoline Vapor Recovery Facility Management Regulations" that aim to help employees and businesses familiarize with gas vapor recovery facilities and testing procedures. Course participants were also given the assistance needed to obtain certificates from the central authority or agents thereof.

Driven by the mission to fulfill corporate social responsibilities and protect the environment, CPC became the first in the nation to offer training courses for "gas vapor recovery facility testing personnel," and in doing so contributes to the air quality of the environment. Between 2013 and 2023, the courses trained a total of 473 individuals. Currently, all refueling nozzles have been equipped with gas vapor recovery device, which contributes significantly to vapor recovery and improving air quality near petrol stations.

CPC vapor recovery class

Performance evaluation and promotion

CPC has implemented a set of "Managers and Workers Performance Evaluation Guidelines" to ensure that employees' work performance is properly reflected during evaluation, and that the process serves as an incentive for excellence. Vice presidents and level 1 units are required to set performance measurements and targets based on board-approved performance evaluation guidelines for responsibility centers, which serve as reference for future performance evaluation. Managers of level 2 units and below are required to set performance measurements and targets within their scope of responsibility and the targets outlined by level 1 units. Performance measurements and scoring criteria have also been implemented for operators and non-managerial staff, whose performance is evaluated based on level of target accomplishment and quality of work delivered. Annual performance evaluations are carried out according to CPC's "Notes on Worker Performance Review and Bonus Allocation," and employees are entitled to a performance bonus equal to 0 to 1 month's salary depending on performance grade. Employees that have performance rated D are dismissed. The performance evaluation does not discriminate by gender or other differences; with the exception of new recruits (interns), 100% of employees are subject to performance evaluation each year.

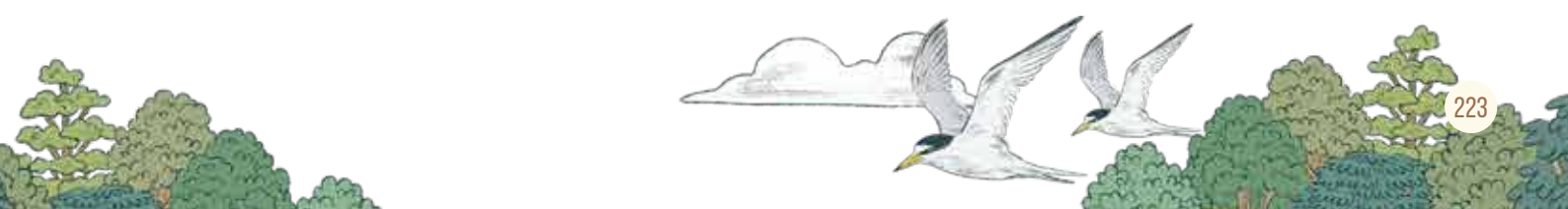
3.4 Human Rights Protection

3.4.1 Enforcement of human rights policy

Since incorporation, CPC has committed efforts into the creation of a healthy work environment with a "people-oriented" focus, and observed international human rights conventions including "The Global Compact," "The Universal Declaration of Human Rights," and "ILO Declaration on Fundamental Principles and Rights at Work" to ensure protection of employees' rights and that all employees are treated with dignity and respect. CPC received no major complaint concerning human rights in 2023.

CPC's human rights management policy

Policy	Description	Applicable subjects	Accountable department
Safety and health Work environment	Reduce risk of occupational hazard, minimize risk factors in the work environment that may affect employees' health and safety, and enforce work safety and health training	All employees	• Work Safety Division
Employees' freedom of association	Protect employees' right to union association and collective bargaining, and provide a diverse range of communication channels and platforms that help maintain a harmonious relationship between labor and management.	All employees	• Human Resources Division • Department of Public Relations
Respect for diversity and equality	Employees involved in the same line of work are compensated equally, and are not differentiated by ethnicity, thoughts, religion, political association, locality, place of birth, gender, sexual orientation, marital status, appearance, disability, or union membership.	All employees	• Human Resources Division • All units (divisions and offices)
Prohibition against child labor	Elimination of all possibility of child labor	Job seekers	• Human Resources Division • Work Safety Division • All units (divisions and offices)
Prohibition against forced labor	Elimination of all forms of forced and compulsory labor	All employees	• Human Resources Division • Work Safety Division • All units (divisions and offices)
Prohibition against illegal violation at the workplace	Eliminate all illegal violations, such as workplace violence or sexual harassment, from the employer, line manager, colleagues, customers, or any other third party when performing duties.	All employees	• Human Resources Division • All units (divisions and offices)



Outcomes of CPC's human rights policy and execution – 2023

Safe and healthy work environment

Policy 01

- Enforce work safety and health training and continue implementation of safety and health certification, credit and on-job training system.
- Implement process safety management (PSM) system and make optimizations to 15 basic system functions.
- Incorporate use of AI technologies for improved work safety management and reduced chances of accident.
- CPC organized 359 disaster prevention drills in 2023, including 4 expanded emergency response drills and 5 department-level ad hoc emergency response drills.

Employees' freedom of association

Policy 02

- CPC respects employees' choices to create, join, or abstain from unions or other employee associations; the organization supports workers' right to association and has signed a collective bargaining agreement with Taiwan Petroleum Workers' Union in 2021.

Respect for diversity and equality

Policy 03

- CPC promotes diversity and equality, and discourages all forms of discrimination.
- CPC is dedicated to protecting maternal rights, and introduces protection measures for female employees who work in places that pose risk to maternal health.
- CPC goes to great lengths to ensure that the workplace is free of harassment, whether sexual, mental, physical, or verbal, and any form of abuse and intimidation; we are committed to creating a dignified, safe, and equal work environment.
- CPC organized 56 awareness training sessions in 2023 and received total enrollment count of 2,812.
- There was no violation against the rights of indigenous people in 2023.

Prohibition against child labor

Policy 04

- CPC specifically prohibits use of child labor and duly complies with local government rules on work age.
- All personnel have to undergo background check before recruitment.
- CPC encountered no incident or dispute concerning use of child labor in 2023.

Prohibition of forced labor

Policy 05

- CPC observes local employment regulations and international rules, and does not force or coerce anyone to perform work activities against their will.
- CPC encountered no incident of forced labor in 2023.

Prohibition against illegal violation at the workplace

Policy 06

- CPC has established prevention against abuse when performing duties along with action guidelines, and conducted risk assessments as well as training to promote employees' awareness of what constitutes illegal violations, the Company's statement, grievance channels, and available internal/external resources to prevent the occurrence of illegal violations.
- CPC received 11 reports of illegal violation in 2023. All incidents were investigated and mediated immediately upon receiving the report, while the victims were offered proper protection, accommodation, mental counseling, and resources and assistance pertaining to their rights. The current preventive measures will be reviewed and improved continually to ensure that they remain relevant and effective.

Participation in human rights protection training

CPC organizes training courses to promote employees' awareness toward the mainstream values on gender equality and human rights. Videos on anti-discrimination in the workplace and Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW) are used as teaching materials to help employees learn the common forms of discrimination in the workplace. Furthermore, whenever new employees come onboard, we would introduce them to the new work environment and arrange courses on sexual harassment prevention and grievance mechanisms for them. Each year, CPC would make arrangements to have managers and employees of all levels undergo training for sexual harassment prevention and gender equality. Awareness promotion and prevention tasks are being performed on a routine basis.

Human rights training hours and trainee count – 2021-2023

Category	2021 Male	2021 Female	2022 Male	2022 Female	2023 Male	2023 Female
Human rights training hours (on policies and procedures related to human rights issues, such as prevention of sexual harassment) (hours)	2,738	882	5,315	2,025	8,684	2,914
No. of employees subjected to human rights training (persons)	910	265	1,321	343	2,144	668
Total employee count (persons)	13,798	2,495	14,096	2,586	14,479	2,663
Percentage of employees subjected to human rights training (%)	6.60	10.62	9.37	13.26	14.81	25.68
Total average training hoursNote (hours)	3.08		4.41		4.12	

» Note: Total average training hours = hours of human rights training/No. of employees subjected to human rights training.

3.4.2 Employee communication channels

CPC organizes labor-management relations review meetings every year to promote labor-management communication. The Company also arranges official and unofficial activities where the event hosts and vice presidents are able to communicate and exchange opinions with union representatives, and pays a visit to the labor union from time to time to heed opinions of union members. CPC invites union representatives to attend OHS meetings, complaint adjudication meetings, reward/disciplinary meetings, tender review meetings, and procurement review meetings. An "Employee Welfare Committee" and a "Labor Pension Review Supervisory Committee" comprising management and union representatives have also been assembled to promote labor-management relations and devise employment terms that best cater to the organization's growth, profitability, and continuity as well as employees' welfare

Employment terms

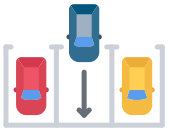
- A "Childcare Center" was established on the third floor of CPC Building in October 2023 to address employees' childcare needs and make the workplace childcare friendly.
- Employees who perform acting duty for managerial personnel of one grade higher may claim acting duty salary of one grade higher.
- To make the workplace childcare-friendly, Dalin Refinery will be creating childcare facilities at its new administrative building.
- Expense allowances for sales personnel were increased from NT$125 to NT$145 to meet actual needs.

Other discussions

- Increased existing inventory of stationery.
- Optimized the correspondence system.

Coordination of labor-management relations and promotion of labor-management cooperation

- CPC held company-wide and headquarters labor-management meetings each month for a total of 24 meetings a year, and organized one business conference between the spokesperson and Taiwan Petroleum Workers' Union.
- One seminar on labor-management conference laws and rules was held to promote communication and build harmonious relationship.



Work environment

- For the cleanliness of employees' work environment, CPC has made ongoing improvements to the car park floors and optimized movements for employees who commute via motorcycles.
- The CPC Building has been offering a 50% discount on monthly parking rates for e-bikes since May 25, 2023 as a way to encourage use of low-pollution vehicles and support the nation's green energy vehicle policy.

Resolution of employment disputes

CPC complies with employment regulations, and has been able to avoid major employment disputes except for details concerning night shift pay, overtime pay, and wage components. There was also no incident of forced or compulsory labor. However, as a state-owned enterprise of MOEA, CPC pays salary as the only compensation and excludes night shift pay from pension and overtime pay, and for which it has been penalized by county/municipal labor inspection authorities time and time again. These penalties are the result of discrepancies between the Labor Standards Act and the Administrative Law of State-Owned Enterprise, and are not caused by CPC's violations. With regard to the dispute over night shift pay mentioned above, the Executive Yuan has agreed to include the pay in average salary for pension calculation, taking effect from November 1, 2022 onwards. Meanwhile, night shift pay continues to be excluded from salary when calculating overtime pay due to the salary-only system that applies to all state-owned businesses under MOEA. CPC currently observes rules of both the MOEA and the Executive Yuan in this respect.

Employees' opinion channels and resolution

CPC addresses employees' grievances in an honest, open, immediate and direct manner, and implements a set of Employee Grievance Policy to protect employees' rights. Employees may raise grievances when there are objections to a reward or punishment decision; or when employee rights and interests are damaged due to inappropriate systems, regulations, or administrative measures; or when there is employee misconduct. One Employee Grievance Handling Committee meeting was convened to review one case in 2023, and the case has been properly resolved.

Collective bargaining agreements

We abide by international labor conventions and Taiwan's Labor Union Act and ensure the freedom of association and participation in trade unions of employees. Employees are also entitled to collective bargaining according to the related laws and regulations. Mechanisms for communicating with the labor union include: 3 worker directors on the board (representing 21.43% of the seats), periodic labor–management meetings held by each business unit, unscheduled collective bargaining meetings, and business expansion meetings featuring the labor union chairperson as a guest for representation of employees' voices. No business location or supplier violated freedom of association or rights to collective bargaining in 2023.

CPC has signed a collective bargaining agreement with Taiwan Petroleum Workers' Union for the protection of employers' and employees' interests and for improved work efficiency. The agreement contains 55 articles in 9 chapters and covers topics including "Labor–management negotiation and cooperation," "Compensation, work hours, break time, and leave of absence," "Employee welfare, training, and union activities," "Recruitment, transfer (relocation), resignation, and retirement," "Performance evaluation, reward, discipline, complaint, and promotion," "Safety, health, and compensation and compassionate pay for occupational hazard," and "Resolution of employment dispute." If CPC encounters a major change of operation that requires termination of employment contract, it will serve the minimum notice period according to "Regulations Governing Employee Retirement, Compassionate Compensation, and Redundancy for Subordinates of the Ministry of Economic Affairs" and "Notes on Downsizing for Subordinates of the Ministry of Economic Affairs." 99.96% of employees (including contract workers) were covered by collective bargaining agreement.

Main governing laws of collective bargaining agreement

- The Labor Standards Act and related regulations
- Labor Union Act
- Collective Agreement Act
- Act for Settlement of Labor–Management Disputes
- Regulations for Implementing Labor–Management Meeting
- Regulations for Implementing Worker Education
- Ministry of Labor Notes on Consensual Work Hour Reduction Between Labor and Management Due to Economic Challenges
- Occupational Safety and Health Act and related regulations
- Rules on Occupational Safety and Health Facilities
- Organization Regulations on Employee Welfare Committee
- Employee Welfare Fund Act
- CPC Corporation Work Rules
- Leave of Absence Principles for Employees of CPC Corporation Taking Part in Statutory Meetings, Voluntary Meetings, and Activities of Taiwan Petroleum Workers' Union (and Branches)
- CPC Corporation Work Safety Accident Investigation and Management Principles

In an attempt to strengthen understanding of collective agreement regulations and build harmonious relationship between labor and management representatives, CPC hosted a "2023 Conference on Collective Agreement Laws and Practices" from August 10 to 11, 2023, which was attended by a total of 30 participants including representatives of CPC and Taiwan Petroleum Workers' Union (18 total) and officers involved in collective agreement and labor–management relations from both sides. The topics discussed included: "Group negotiation and collective agreement," "Case studies of group negotiation," "Key labor policies and trends of employment relation," and "The current state of the three main employment laws."

Employee assistance program

CPC is committed to creating a harmonious and healthy work environment and improving employees' work satisfaction as well as quality of life. To accomplish this goal, CPC offers a diverse range of service programs after taking into consideration the corporate vision, the nature of the organization, employees' needs, employee categories, outcomes of satisfaction survey, service feedback, availability of internal/external resources, organizational characteristics, and utilization by employees. In 2023, CPC issued a series of questionnaires to learn employees' needs, and based on the responses gathered, it arranged services to cater to employees' wellbeing in three aspects, namely work, lifestyle, and health. CPC has assigned dedicated EAP personnel for the planning, promotion, and referral of resources. Mental and legal counseling are performed by external institutions or professionals, whereas medical consultation is provided by physicians and nurses of the employee clinic. According to the 2023 questionnaire on employees' awareness and satisfaction with EAP, about 94.76% of respondents were aware of the program and more than 85% of users gave positive rating for service satisfaction.

Execution of EAP – 2023

HIGHLIGHTS

courses and seminars were held

Work Aspect	**169** Courses	**4,925** Enrollments	Includes workplace adaptation for new recruits, career development, retirement planning, flexible work hours, sexual harassment complaint, employee grievance, and prevention and handling of illegal workplace violations.
Lifestyle Aspect	**172** Courses	**9,323** Enrollments	Includes legal consultation, worker education, club activities, competitions, nursery room, childcare service, parenting education, and life management.
Health Aspect	**199** Courses	**9,554** Enrollments	Includes mental consultation, maternal health consultation, medical consultation, onsite medical service, stress management, emotion management, health checkup, nutrition, smoking/alcohol cessation, weight loss class, and fitness training.

3.5 Social Inclusion

Being a member of society, CPC is committed to becoming the promoter of social inclusion. While pursuing revenues, CPC remains focused on its corporate social responsibilities and devises neighborhood engagement plans based on the needs of society. By exerting influence through various business locations, CPC strives to resolve issues within society and address inequalities in resource distribution. CPC maintains productive interaction with local organizations and residents through a wide range of activities and channels such as: community care, energy education for all ages, artistic and cultural events, sports promotion, sale of agricultural produce, hiring of persons with developmental disabilities at petrol stations, etc. The organization continues to give back to the local community; it supports progression of society by adopting a people-oriented focus as well as inclusive values. There were 6,356 donations (subsidies) totaling NT$403 million made in 2023.

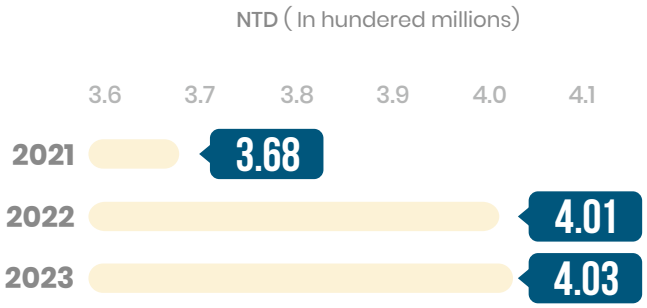
Short-term

- Assist local governments and sponsor infrastructure projects that can be felt by the public.
- Continue neighborhood engagement efforts, support local development, and engage in charitable activities.

Medium/long-term

- Maintain friendly understanding with communities around complexes and mines, sustain care for the vulnerable, and prosper with local residents.
- Combine green operations, cultural and creative industries, and community co-prosperity to create an eco-friendly and green energy-powered future

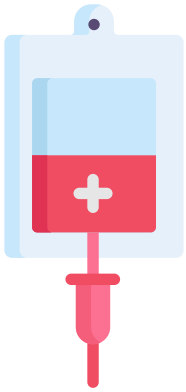
CPC's total amount of donations within three years



3.5.1 CPC's social influence

From million CC to 10-million CC

CPC recognizes "blood donation as a life-saving act" and has long been organizing blood donation events and supporting local blood donation centers with supplies in an attempt to relieve blood bank shortage. Driven by the mission to bring blood to where it is needed, CPC continued its "Million CC Blood Donation" event in 2023, during which the Company mobilized 19 departments across the organization and was able to gather 10,392,500 c.c. of blood in 41,570 bags, surpassing the million C.C. target by far while accomplishing the new 10-million C.C. milestone.



2023 Employee donation attempts

26,582 Times 2013-2023 121,928 Times

2023 Total blood donated

10,392,500 c.c. 2013-2023 46,947,000 c.c.

2023 Total bags of blood donated

41,570 Bags 2013-2023 187,788 Bags

Purchase of domestic agricultural produce; double the effort, double the charity

The disruption of export markets has had significant impact on the sale of agricultural and aquaculture products and limited the amount of resources available to underprivileged groups. Out of support for Taiwanese farmers, CPC purchased in-season produce such as custard apple, mango, and pomelo and donated them to organizations of the underprivileged, thereby catering for the needs of two parties in a single gesture.

2023 assisted in selling about

7.1 MT OF AGRICULTURAL PRODUCTS

CUP&GO – joint marketing for in-season produce

government's policy to care for farmers, which helped farmers move inventory at reasonable margins especially at a time when prices fell due to strong harvest. Some of the produce was sold in conjunction with CUP&GO, CPC's drive-through coffee brand, and for which we had picked items that offered the most abundant nutrients and best texture. Through this joint marketing campaign, CPC hoped to create mutual benefit for the farmers, the consumers, and the Company; other agricultural produce that did not make the campaign were gifted to charity organizations.

were gifted in March, 1,500 cartons

9,000 kg of custard apple

were gifted in June, 2,615 cartons

26,150 kg of pineapple

were gifted in July, 1,034 cartons

6,204 kg of mango

were gifted in September, 1,000 cartons

6,000 kg of pomelo

Tuition support for underprivileged children

CPC has been working with World Vision Taiwan since 2010 to rally employees into donating NT$1,000 per month to underprivileged children. In 2023, employees donated a sum of NT$2.436 million to help 203 children learn, grow, and live a healthy and happy childhood.

In 2023 helped
203 children learn

Care for people with rare disorders through songs

Using music as the medium for voicing care to the underprivileged, CPC and Shin Shin Natural Gas Co., Ltd. co-hosted "2023 CPC-Shin Shin TFRD Charity Concert" with the assistance of Taiwan Foundation for Rare Disorders (TFRD). The concert featured performances of the TFRD North Region Choir and girls' group, the CPC Choir, and the Shin Shin Choir; together, they spread care to every corner of society through songs and melodies of love. An invoice donation box was also made available onsite to collect donations of uniform invoices from the audience, and any proceeds from the lottery draw were used to support people with rare disorders. Through music, the organizers hoped to not only bring comfort to the patients and help them build confidence and a sense of accomplishment, but also introduce more people to the beautiful voices of patients with rare diseases.

The concert had
600 participants

Donated
NT$100,000

CPC and digital empowerment

For many years, CPC has made unscheduled donations of renewed computers to remotely located schools and underprivileged groups out of corporate social responsibilities and its mission to recycle and reuse resources, while at the same time giving financially challenged households the opportunity to learn advanced technology and knowledge. In 2023, CPC donated a total of 395 renewed computers to remotely located junior high schools, elementary schools, local government offices, local health offices, and police precincts for use in education and administrative services.

Diversity, sustainability, and co-prosperity

CPC actively supports activities of indigenous peoples, and has long been hiring indigenous people above the minimum requirements. By offering employment opportunities, CPC contributes to interracial harmony of the society. In 2023, CPC subsidized (donated to) 61 activities of indigenous people for a sum of NT$3.307 million, and hired 103 indigenous people that accounted for 0.56% of total employees (including interns).

2023 subsidy (donation)
61 cases

Subsidy (donation) amount (NTD)
3.3 million

Seedling giveaway

CPC holds a conviction toward "green coexistence" and supports "422 Earth Day" each year by giving away seedlings at 100 direct stations nationwide. Through this gesture, we encourage everyone to join us in planting trees for the mitigation of Earth's rising temperature. In 2023, CPC gave additional seedlings to "Shalom" and "Taiwan Horticultural Therapy Association" for teaching purposed, and hosted a "Together, We Share" event at the CPC Building where it gave seedlings to employees and organized a charity auction for seedlings. They donated all of the supplies and proceeds gathered to "Huashan Social Welfare Foundation" and "The Play Association of R.O.C. (Taiwan)." Through this event, we encourage employees to take part in sharing with the society.

Given away in 2019-2023
60,800 tree seedlings

Gathered invoices
14,806

The event received participation
20,000 persons

Batteries
52,618

3.5.2 Support for Slow Angels

CPC sponsors elite sports and brings Slow Angels to the world

CPC has been hiring persons with disabilities at petrol stations since 2001. In 2023, CPC began sponsoring the cheerleading team of National Miaoli Special School as a way to help children build hope and confidence toward becoming the center of the spotlight. Despite being born with a disadvantage in learning, these children practiced persistently and the team was able to claim the Award of Excellence on their first attempt at Taiwan Cheerleading Championships in 2020, and for 3 consecutive years afterwards. Many members of the team worked part-time at CPC's petrol stations in Miaoli. In 2023, the cheerleading team earned the opportunity to compete in the 2023 ICU World Cheerleading Championships held in Orlando, Florida, USA, during which they claimed silver in the Special Olympics division and truly became the center of the spotlight on the international stage.

Won silver in the Special Olympics division of the 2023 ICU World Cheerleading Championships

A patient and thorough workplace for the Slow Angels

The micro movie: Fly! Slow Angels released by CPC at the end of 2022 captures the work and learning routines of Slow Angels at Taoyuan Wuling Station. By presenting the special characteristics of Slow Angels and the friendly work environment, the movie tells a story of how Slow Angels grow to be confident, professionally competent, and financially independent through their work at the petrol station. A 30-second trailer of Fly! Slow Angels was edited and released through conventional as well as new media channels; by the end of January 2024, the trailer had been broadcast in about 900 TV time slots and viewed 2.06 million times on YouTube, making it the promotional video with the most views in recent years. The production even won the Bronze Award during the 7th (2023) Taipei Golden Eagle Micro Movie Festival." Through micro movie, CPC presents successful stories of its sustainability efforts and conveys sustainability awareness to the general public in a way that is receptive to all.

Please insert QR code through URL

562
No. of Slow Angel workers

23
Number of partnered institutions

41
No. of compassion petrol stations

3.5.3 Environmental sustainability

Sustainable Ocean

CPC has been organizing cleanup events at popular scenic areas, hiking trails, and beaches throughout Taiwan and committing efforts into the preservation of ecosystems near plant sites since 2013. Starting from 2020, CPC has been supporting the Executive Yuan's "Tribute to the Ocean" policy by implementing a petrol system along with routine, ad hoc, and emergency cleanup protocols to maintain coastal areas and quality of the ocean environment where CPC operates. In addition to the regular coastal cleanups being performed at Yongan Plant in Kaohsiung and at the Shen'ao Port Supply and Transport Center in New Taipei City (whereas the plants in Guantang, Taoyuan and Qixingtan, Hualien are self-managed), CPC also held a joint coastal cleanup event that covered all four plant sites simultaneously. CPC's 2023 "Sustainable Ocean" joint coastal cleanup event was led by Chairman Shun-chin Lee, President Jeng-Zen Fang, Spokesperson Jui-Tsung Chang, and CEO Chui-Hsing Chiu of the Oil Product Marketing Division. Together, they inspired the organization to safeguard the environment through action, and paid tribute to the ocean in ways that conform with CPC's ESG goals and green, co-existing philosophy.

The cleanup event in Northern Taiwan opened with the commissioning of "CPC Environmental Fleet and Divers" team assembled by Taoyuan Refinery Plant. The plant first formed its "CPC Environmental Fleet" back in 2018 and later took part in Taoyuan City Government's ocean preservation efforts in 2022 by assembling the "CPC Environmental Divers" that comprise inspectors and repairers of underwater equipment. Both establishments have played an important role in maintaining the blue coastline, and had teamed up for this coastal cleanup under the name – "CPC Environmental Fleet and Divers." The team is symbolic of CPC's mission to protect the environment and its commitment to preserving the ocean.

CPC employees, families, and friends participated

1,350 persons

Cleared of ocean waste

806 kg

Participated between 2019-2023

5,206 more than persons

Coastline in undeveloped areas of Guantang

At a frequency of 3 to 5 times a month, CPC cleared 30.74 MT of waste in 2023. This coastal area is subject to quarterly review based on Taoyuan City Government's Sustainable Coastline KPI, and all items of the "Coastal cleanliness indicator" had met requirements.

Coastline from Hualien Qixingtan to Deyan Fish Farm

CPC sponsors the cleanup of coastline from Hualien Qixingtan to Deyan Fish Farm. The Company assigns a crew to perform coastal cleanup at least once a month. Total waste of 104 kg was cleared in 2023.

Coastline in Yongan Section, Yongan District

Aside from the regular coastal cleanups by Yongan Plant, CPC has also been sponsoring the cleanup of certain areas of the coastline in Yongan Section, Yongan District, since 2017. The Company assigns a crew to perform coastal cleanup at least twice a month, and uploads its progress onto the EcoLife portal. More than 15.707 MT of waste was cleared in 2023.

Shenzhen/ Macao/ Hong Kong Supply and Transport Center

Shen'ao Port Supply and Transport Center not only performs coastal cleanups in its own capacity, but also cooperates with New Taipei City Ruifang Coastal Environment Protection Volunteers Association from time to time to co-host "Earth Day Coastal Cleanup" events, working with local residents and volunteers to contribute to the cleanliness of the ocean. Outcomes of these efforts are being uploaded onto the EcoLife portal, and records show that 19.26 MT of waste was cleared in 2023.

3.5.4 All-age energy education

Wellness of the petrochemical industry concerns national security and is regarded as the mother of all industries, because petrochemical products are needed in virtually every production activity from semiconductors, energy-efficient vehicles to solar panels. Considering that net zero emission has emerged as a critical issue and how the need for transformation is imminent, the petrochemical industry is in desperate need for the right talents. CPC has long been working with schools for the introduction of industry–academia collaboration programs in an attempt to train talents for the petrochemical and energy industry. These programs combine the expertise of the business world and academia to deliver the right balance between knowledge and practical skills, and have proven to be effective at helping trainees develop petrochemical theories, basic energy knowledge, and workplace skills. By admitting top students into the program and setting a good track record on "local talent retention," "career education," and "creation of local employment opportunities," CPC has motivated other state-owned enterprises to imitate and introduce their own industry-collaboration programs.

Driven by persistence in energy education, CPC takes the initiative to engage local residents and the community in various activities that promote public interest, from talent training, revitalization of tangible and intangible cultural heritage, restoration of historical buildings to the preservation of Chuhuangkeng site, and in doing so creates an environmental education park that has a positive influence on society. Taiwan Oil Field Exhibition Hall of CPC Petroleum Discovery Museum and CPC Kaohsiung Refinery Environmental Education Park offer environmental education courses and exhibitions that are suitable for people of different age groups. Taiwan Oil Field Exhibition Hall, in particular, takes visitors on a tour through the history of Chuhuangkeng during the oil mining era, and at the same time conveys values of sustainability and environmental protection while raising the public's image toward the CPC brand.

Taiwan Oil Field Exhibition Hall - An advocate for environmental education

Taiwan Oil Field Exhibition Hall marks the location where oil was first discovered in Taiwan, and is an active world-class cultural heritage. Taiwan Oil Field Exhibition Hall is dedicated to preserving local cultures, history, and carrying out environment-related education, and it does so by creating an elder-friendly community, providing learning resources, and supporting local businesses. By presenting itself as an ideal place for learning and leisure, Taiwan Oil Field Exhibition Hall helps bring environmental education into schools in remote locations and spreads knowledge where conventional channels cannot reach.

A training course for volunteer historical building tour guides was completed in 2023, which covered topics on environmental education, sustainable management, climate change etc.

Energy education through CPC Petroleum Discovery Museum

CPC Petroleum Discovery Museum serves as a bridge that connects the organization to the general public. By incorporating interactive multimedia, the museum presents complicated information about oil in a manner that is easy to understand, and uses fun, interactive guiding interface to create an environment where visitors can learn, experience, and explore knowledge about oil and green energy with joy. Children's activities such as the coloring contest are being held on an ongoing basis. Through the design and experience of energy and environmental courses, CPC hopes to raise the public's awareness and attention toward environmental protection. In 2023, CPC Petroleum Discovery Museum designed its own CCUS Mystery event called "The Black Gold Tour" where visitors were introduced to CCUS (carbon capture, utilization, and storage) through a puzzle-solving game. Additionally, the museum supported National Science Council's "2023 Kiss Science – Science for All Ages" program by launching its own "CPC Net Zero" series of activities.

The 3rd children's coloring contest attracted participants

450 persons

2019-2023 accumulated visits more than 100,000

In 2023, the museum visits received a total 33,831

Document preservation at CPC Kaohsiung Refinery Environmental Education Park

CPC Kaohsiung Refinery Environmental Education Park was the first certified environmental education facility to be operated by the oil refinery/petrochemical industry. The park preserves historical buildings, remnants, factories, and environmental protection facilities from the Japanese colonial era, and is intended to be place of historical, cultural, and educational significance. Aside from the execution of existing courses, the park also planned a neighborhood engagement campaign called the Environmental Education Tour where it promoted environmental education at local schools. The park delivered a total of 9 courses for 220 adults, 6 courses for 180 elementary school students, and 1 customized course for 35 individuals. In 2023, the park represented the MOEA and participated in the "2022 Performance Assessment for National Environmental Education Action Plans" organized by the Environmental Protection Administration, and won an honorable mention. The park also won the Human Resources Investment Award during the "2023 Asia Responsible Enterprise Awards" for the efforts it had committed in 2023. In December, CPC signed MOU for Environmental Education Partnership with 10 environmental education facilities in Kaohsiung including Shoushan National Nature Park for mutually beneficial engagements relating to environmental education.

The park cooperated with the Oil Refinery Elementary School for a trial run of the Environmental Education Tour, and 135 people participated. The tour introduced the park's characteristics along with its care for energy and sustainability of the environment into the campus, where environmental education can be passed down and strengthened among future generations.

135 people participated

Chemical engineering science course through industry–academia collaboration

CPC supports the government's policies on industry –academia collaboration and contributes its expertise to training entry-level operators for the petrochemical industry and creating employment opportunities for local young adults. Since the 2021 academic year, CPC has been working with Kaohsiung Municipal Siaogang Senior High School to host chemical engineering science courses through industry–academia collaboration. These chemical engineering science courses have been organized to cater to equality in students' right to education, and do not discriminate against any family-related factors. A scholarship program has also been set up to subsidize underprivileged students for NT$2,000 per student, per month. Additionally, the collaboration program pays NT$6,000 in rewards every semester to each of the top 10 students with the highest 5-subject average score as a form of encouragement. Students of the collaboration program are given a certificate of completion upon graduation, and are offered the opportunity to take part in CPC's open recruitment, which recruits up to 10 candidates based on the assessment results.

The purpose of CPC' s chemical engineering science course was to identify potential talents ahead of time and recruit and train them over the long term. This alliance between state-owned enterprise and the education sector not only enables more effective industry–academia collaboration in a way that favors the development of industry talents, but also strengthens CPC' s relationship with locals and shapes CPC' s triple image in local engagement, community support, and education contribution.

Social impact assessment of the industryacademia collaboration with Linyuan Senior High School

Project SROI was assessed at NT$3.36, meaning that every NT$1 that CPC invests in would generate NT$3.36 of social return

In 2014, CPC made an attempt that was unprecedented among state-owned enterprises and signed an industry–academia collaboration agreement with Linyuan Senior High School in Kaohsiung City for the introduction of "chemical engineering science course," which is intended to train entry-level operators for the petrochemical industry and offer training for specialist skills. CPC provides living subsidies to top-performing students from low-income households every school term, and offers them flexible options to seek employment and higher education by guaranteeing employment in the future. With the right incentives, CPC hopes to inspire students' thirst for knowledge, cater to their career paths, and keep top-performing students locally at Linyuan Senior High School.

- **4 terms to date since 2014**
- **Trained 266 students**
- **80% acceptance rate by national universities**
- **68 served at CPC upon graduation**
- **Increased admission rate of Linyuan Senior High School by 6.7 times**

CPC in sustainability education

For the 15th special exhibition – "OPEN" by Education Parenting Family Lifestyle, CPC established an exhibition booth featuring "spaceship" as the main visual theme to symbolize the Company's spirit as a sustainability explorer and its relentless drive toward energy transformation and sustainable growth. In this exhibition, CPC used various forms of fun, family-friendly activities to educate the public on energy as well as CPC's plans for "High-value Petrochemical, Low-Carbon Emission and Lean-Renewable Energy". Through the use of interactive devices, the children were made aware of CPC's carbon reduction actions and taught knowledge on renewable, sustainable energy.

Uncovering education contributors through "Taiwan Creative Curriculum"

For 8 consecutive years, CPC has supported CommonWealth Magazine's "Taiwan Creative Curriculum" campaign that invites all teachers in Taiwan to leverage local resources and structure a curriculum that not only emphasizes the local culture but also incorporates a global vision and UN SDGs. Through this curriculum, we hope to make every student a contributing member of the world and create a solid foundation for local sustainability education. A "CPC Green Energy Education Award" was organized to commend 15 winners from the elementary division and the high school division for the contributions they have made with respect to energy education.

3.5.5 Sports promotion

CPC sponsors Taiwan's elite athletes

CPC appreciates the importance of sport not just as a demonstration of a nation's soft power, but also the effect it has on people's health and quality of life, which was why a set of "CPC Directives for Sponsoring and Cultivating Elite Athletes" was implemented in 2022 to uncover and sponsor talents who have the potential to become elite athletes. The scope of sponsorship was later expanded to cover sports teams of public and private schools in Taiwan, considering that sports teams of many remotely located schools tend to be under-funded, the directives were amended specifically to fund sports teams of remotely located schools. Through these actions, we hope to direct resources to areas where they are most needed, and support the diverse growth of children in remote areas.

"CPC's practices at promoting sports"

Support for exercising habits

Sports sponsorship amounted to nearly NT$52.2 million for the year

Sponsorship for prominent local sport events

Subsidized 693 sport events or competitions for a sum close to NT$37 million

Rewarding elite athletes

Rewarded 17 athletes and sports teams from 14 schools for a sum of NT$15.2 million

CPC has also been actively sponsoring major sports games in Taiwan and supporting businesses and the private sector in making sports investments. Internally, the Company organizes regular sports competitions and encourages employees to engage in sports clubs as a way to promote health. On a community scale, CPC subsidizes neighborhood games and promotes exercise habits within the local community, which in turn builds interaction and bonds with local residents. Through a wide variety of meaningful actions, CPC takes progressive steps toward fulfilling its corporate social responsibilities.

In 2020, the United Nations passed a resolution that recognizes “Sport as an enabler of sustainable development.” Having committed to adopting UN SDGs in every aspect of business management, CPC, too, views sport as a means to sustainable development and therefore offers long-term support to various sport activities or competitions organized by the community, schools, and organizations. In addition to establishing policies for sponsoring elite athletes, the Company also encourages children in remote areas to develop professional skills, confidence, and a sense of accomplishment through sports, and gain the power to turn their lives around. At CPC, we advocate “common rights to sport for everyone” and ensure that people with disabilities have equal rights to sport. By sponsoring athletes, we hope to kickstart a “cycle of positivity” where the athletes not only train to compete but also pass on skills and life’s experiences to the next generation. 7 of the elite athletes sponsored by CPC went on to compete in the 2024 Paris Olympics

CPC wins Sports Activist Award – Gold for 6 consecutive years

Swinging for the home run in life

The baseball team of Jintan Elementary School was founded in 1995. The team currently has 35 players, most of whom are from underprivileged households and more than half are of indigenous origin; there are also children from areas such as Namaxia and Taoyuan that suffered severe damage from Typhoon Morakot. CPC has long been sponsoring the baseball team of Jintan Elementary School by providing children a stable environment where they can develop skills. Through training and competition, we hope to help these children build the confidence and strong physique they need to pursue their dreams and hit the grand slam of their lives.

3.5.6 Culture preservation

Capturing the glory of CPC workers Sustainable cultural heritage inheritance

Half a century ago, a group of CPC employees undertook the mission to develop refinery technologies in support of the petrochemical industry. They overcame challenges one after another, and eventually built a strong foundation in the upstream petrochemicals that helped Taiwan's economy flourish. After gathering 60 years of historical images and documents and having interviewed several CPC workers, CPC published a new book titled "CPC and Naphtha – The Giant that Lifted Taiwan's Petrochemical Industry" and organized a "Special Exhibition of Historical Images from Taiwan's Petrochemical Industry," for which CPC invited retirees and existing employees to share history of the petrochemical industry during the opening ceremony. Through this book and the special exhibition, CPC hopes to share with the public the history of Taiwan's petrochemical industry and recognize the hardships that the forerunners endured back in the day.

CPC 77th Anniversary Concert

2023 marked the 77th anniversary of CPC. To celebrate, the Company organized CPC 77th Anniversary Concert featuring the performance of "OneSong Orchestra" at the concert hall of National Kaohsiung Center for the Arts (Weiwuying), where the performers delivered a compilation of theme music from popular Taiwanese TV programs and films. The sound of familiar tunes evoked shared memories and brought people closer together. Through this concert, CPC hoped to promote its corporate image and remind employees, families, community residents, and business partners of the importance of mental health, and looked forward to creating sustainable values in the presence of music.

A total of 1,700 people joined the concert

Appendix 1: GRI Index

Statement of usage	CPC follows the GRI Standards for the disclosure of information dated January 1 to December 31, 2023.
Application of GRI 1	GRI 1: Foundation 2021
Applicable GRI Industry Standards	GRI 11 Oil and Gas Sector (2021)

GRI Standards	Serial No.	Disclosures	Corresponding Section	Page	Remarks
General Disclosures					
GRI 2: General Disclosures 2021	**The organization and its reporting practices**				
	2-1	Organizational details	1.1.1 Introduction to CPC	53	
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	2-3	Reporting period, frequency and contact point	Introduction_Scope of Report and Reporting Period; Contact	4 5	
	2-4	Restatements of information	Introduction_Scope of Report and Reporting Period	4	
	2-5	External Validation / Assurance	Introduction_Report Profile	4	
	Activities and workers				
	2-6	Activities, value chain and other business relationships	1.1.1 Introduction to CPC 1.2 Sustainable supply chain 1.4 Service and innovation	53 68 102	
	2-7	Employees	3.3.1 Human resources management	213	
	2-8	Workers who are not employees	3.3.1 Human resources management	214	
	Governance				
	2-9	Governance structure and composition	1.1.2 Directors overview	66	
	2-10	Nomination and selection of the highest governance body	1.1.2 Directors overview	57	
	2-11	Chair of the highest governance body	1.1.1 Introduction to CPC	53	
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	2-15	Conflicts of interest	1.1.2 Directors overview	66	
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	2-17	Collective knowledge of the highest governance body	1.1.2 Directors overview	57	
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	2-19	Remuneration policies	1.1.2 Directors overview	60	
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	Strategy, policies and practices				
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	2-26	Mechanisms for seeking advice and raising concerns	1.4.3 Whistleblowing system and whistleblower protection	98	
	2-27	Compliance	1.4.1 Compliance 2.5.1 Compliance with environmental laws 2.3.2 Water consumption and management	95	
	2-28	Membership of associations	1.5.4 External recognition and collaboration	115	

GRI Standards	Serial No.	Disclosures	Corresponding Section	Page	Remarks
General Disclosures					
	Stakeholder engagement				
GRI 2: General Disclosures 2021	2-29	Approach to stakeholder engagement	Introduction_Stakeholder communication	22	
	2-30	Collective bargaining agreements	3.4 Human rights protection	227	
GRI 11 Oil and Gas Sector 2021					
GRI 3: Material Topics 2021	3-1	Process to determine material topics	Introduction_Material topics of sustainability for the year	17	
	3-2	List of material topics	Introduction_Material topics of sustainability for the year	19	
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	11.1.5	305-1 Direct (Scope 1) GHG emissions	2.1.4 Climate change goals, indicators, and management performance	141	
	11.1.6	305-2 Energy indirect (Scope 2) GHG emissions	2.1.4 Climate change goals, indicators, and management performance	141	
	11.1.7	305-3 Other indirect (Scope 3) GHG emissions	2.1.4 Climate change goals, indicators, and management performance	141	
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GRI 11.2 Climate adaptation, resilience, and transition	11.2.2	201-2 Financial implications and other risks and opportunities due to climate change	2.1.2 Risks and opportunities of climate change	126	
	11.2.3	305-5 Reduction of GHG emissions	2.1.4Climate change goals, indicators, and management performance	142	
Climate change strategies (Material topic #10)					
GRI 3-3 ★	11.2.1	Management of material topics	Introduction_Material topics of sustainability for the year	19	
GRI 11.2 Climate adaptation, resilience, and transition	11.2.2	201-2 Financial implications and other risks and opportunities due to climate change	2.1.2Risks and opportunities of climate change	126	
	11.2.3	305-5 Reduction of GHG emissions	2.1.4Climate change goals, indicators, and management performance	140	
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GRI 3-3 ★	11.3.1	Management of material topics	Introduction_Material topics of sustainability for the year	19	
GRI 11.3 Air emissions	11.3.2	305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	2.5.2 Air pollutant emission and management	184	
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	11.4.4	304-3 Habitats protected or restored	2.4 Ecological preservation	169	
	11.4.5	304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations	2.4 Ecological preservation	169	

GRI Standards	Serial No.	Disclosures	Corresponding Section	Page	Remarks
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	11.4.3	304-2 Significant impacts of activities, products and services on biodiversity	2.4 Ecological preservation	169	
	11.4.4	304-3 Habitats protected or restored	2.4 Ecological preservation	169	
	11.4.5	304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations	2.4Ecological preservation	169	
GRI 11.5 Waste	11.5.2	306-1 Waste generation and significant waste-related impacts	2.5.3Discharge and management of effluents and waste	187	
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GRI 11.6 Water and effluents	11.6.2	303-1 Interactions with water as a shared resource	2.5.3 Discharge and management of effluents and waste	185	
	11.6.3	303-2 Management of water discharge-related impacts	2.5.3 Discharge and management of effluents and waste	185	
	11.6.4	303-3 Water withdrawal	2.3.2 Water consumption and management	186	
	11.6.5	303-4 Water discharge	2.3.2 Water consumption and management	186	
	11.6.6	303-5 Water consumption	2.3.2 Water consumption and management	186	
Business continuity management (Material topic #9)					
GRI 3-3 ★	11.7.1	Management of material topics	Introduction_Material topics of sustainability for the year	19	
GRI 11.7 Closure and rehabilitation	11.7.2	402-1 Minimum notice periods regarding operational changes	1.3.4 Risk control	227	
	11.7.3	404-2 Programs for upgrading employee skills and transition assistance programs	3.1.2 Employee care and benefits	228	
GRI 11.8 Asset integrity and critical incident management	11.8.2	306-3 Significant spills	2.5.3 Discharge and management of effluents and waste	185	
Management of major incidents (Material Topic #3)					
GRI 3-3 ★	11.9.2	Management of material topics	Introduction_Material topics of sustainability for the year	19	
GRI 11.9 Occupational health and safety ★	11.9.2	403-1 Occupational health and safety management system	3.2.1 Workplace safety management	207	
	11.9.3	403-2 Hazard identification, risk assessment, and incident investigation	3.2.1 Workplace safety management	209	
	11.9.4	403-3 Occupational health services	3.1.2 Employee care and benefits	201	
	11.9.5	403-4 Worker participation, consultation, and communication on occupational health and safety	3.1.2 Employee care and benefits	201 207	
	11.9.6	403-5 Worker training on occupational health and safety	3.2.1 Workplace safety management	207 211	
	11.9.7	403-6 Promotion of worker health	3.2.1 Workplace safety management	201	
	11.9.8	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	3.2.2 Workplace safety assurance	211	
	11.9.9	403-8 Workers covered by an occupational health and safety management system	3.1.2 Employee care and benefits	207	
	11.9.10	403-9 Work-related injuries	3.2.2 Workplace safety assurance	209	
	11.9.11	403-10 Work-related ill health	3.2.1 Workplace safety management	209	

GRI Standards	Serial No.	Disclosures	Corresponding Section	Page	Remarks
Issues of non-material topics: employee compensation and protection, supply chain management					
GRI 11.10 Employment practices	11.10.2	401-1 New employee hires and employee turnover	3.3.1 Human resources management	216	
	11.10.3	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	3.1-1Human rights and diversity and inclusiveness	201	
	11.10.4	401-3 Parental leave	3.1-1Human rights and diversity and inclusiveness	200	
	11.10.5	402-1 Minimum notice periods regarding operational changes	3.1-1Human rights and diversity and inclusiveness	227	
	11.10.6	404-1 Average hours of training per year per employee	3.3.2 Talent development	219	
	11.10.7	404-2 Programs for upgrading employee skills and transition assistance programs	3.3.2 Talent development 3.4.2 Employee communication channels	219 228	
	11.10.8	414-1 New suppliers that were screened using social criteria	1.2.3 Supplier management	71	
	11.10.9	414-2 Negative social impacts in the supply chain and actions taken	1.2.3 Supplier management	72	
Issues of non-material topics: employee human rights protection, diverse and inclusive workplace, anti-competitive behaviors, local community					
GRI 11.11 Non-discrimination and equal opportunity	11.11.2	202-2 Proportion of senior management hired from the local community	3.3.2 Talent development	218	
	11.11.3	401-3 Parental leave	3.1-1 Human rights and diversity and inclusiveness	200	
	11.11.4	404-1 Average hours of training per year per employee	3.3.2 Talent development	219	
	11.11.5	405-1 Diversity of governance bodies and employees	3.1-1 Human rights and diversity and inclusiveness	197	
	11.11.6	405-2 Ratio of basic salary and remuneration	3.3.1 Human resources management	215	
	11.11.7	406-1 Incidents of discrimination and corrective actions taken	3.1-1 Human rights and diversity and inclusiveness	198	
GRI 11.12 Forced labor and modern slavery	11.12.2	GRI 409-1: Forced or Compulsory Labor	3.4 Human rights protection	223	
	11.12.3	GRI 414-1: Supplier Social Assessment	1.2.5 Supplier management	69	
GRI 11.13 Freedom of association and collective bargaining	11.13.2	GRI 407-1: Freedom of Association and Collective Bargaining	Introduction_Stakeholder communication 3.4Human rights protection	23 223	
GRI 11.14 Economic impacts	11.14.2	201-1 Direct economic value generated and distributed	1.3.1 Financial performance	81	
	11.14.3	202-2 Proportion of senior management hired from the local community	3.3.2 Talent development	218	
	11.14.4	203-1 Infrastructure investments and services supported	1.5.3No. 1 in contribution 3.5.1CPC's social influence 3.5.2Green influence 3.5.3Cultural creativity	107 230 234 235	
	11.14.5	203-2 Significant indirect economic impacts	1.5.3No. 1 in contribution 3.5.1CPC's social influence 3.5.2Green influence 3.5.3Cultural creativity	107 230 234 235	
	11.14.6	204-1 Proportion of spending on local suppliers	1.2.4Sustainable purchase	74	

GRI Standards	Serial No.	Disclosures	Corresponding Section	Page	Remarks
Issues of non-material topics: employee human rights protection, diverse and inclusive workplace, anti-competitive behaviors, local community					
GRI 11.15 Local communities	11.15.2	413-1 Operations with local community engagement, impact assessments, and development programs	1.3.4 Risk control	91	
	11.15.3	413-2 Operations with significant actual and potential negative impacts on local communities	1.3.4 Risk control	91	
GRI 11.16 Land and resource rights	11.16.2	Operating sites that require involuntary relocation	-		
GRI 11.17 Rights of indigenous peoples	11.17.2	411-1 Incidents of violations involving rights of indigenous peoples	3.4.1 Enforcement of human rights policy	223	
GRI 11.18 Conflict and security	11.18.2	410-1 Security personnel trained in human rights policies or	3.2.1 Workplace safety management	208	
GRI 11.19 Anti-competitive behavior	11.19.2	206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	1.4.1 Compliance	95	
Anti-corruption measures (Material Topic #4)					
GRI 3-3 ★	11.20.1	Management of material topics	Introduction_Material topics of sustainability for the year	19	
GRI 11.20 Anti-corruption	11.20.2	205-1 Operations assessed for risks related to corruption	1.4.2Anticorruption	98	
	11.20.3	205-2 Communication and training about anti-corruption policies and procedures	1.4.2Anticorruption	100	
	11.20.4	205-3 Confirmed incidents of corruption and actions taken	1.4.2Anticorruption	99	
Issues of non-material topics: management of payments to the government					
GRI 11.21 Payments to governments	11.21.2	201-1 Direct economic value generated and distributed	1.3.1 Financial performance	81	
	11.21.3	201-4 Financial assistance received from government	1.3.1 Financial performance	81	
	11.21.4	207-1 Approach to tax	1.3.2 Tax governance	83	
	11.21.5	207-2 Tax governance, control, and risk management	1.3.2 Tax governance	83	
	11.21.6	207-3 Stakeholder engagement and management of concerns related to tax	1.3.2 Tax governance	83	
	11.21.7	207-4 Country-by-country reporting	1.3.2 Tax governance	84	
GRI 11.22 Public policy	11.22.2	415-1 Political contributions	1.3.1 Financial performance	81	
Corporate governance (Material Topic #8)					
GRI 3-3 ★	-	Management of material topics	Introduction_Material topics of sustainability for the year	19	
Sector-specific issue	-	-	1.1.3 Corporate governance	61	
Cybersecurity and privacy protection (Material Topic #6)					
GRI 3-3 ★	-	Management of material topics	Introduction_Material topics of sustainability for the year	19	
Sector-specific issue	-	-	1.4.1 Compliance	95	
Compliance (Material Topic #2)					
GRI 3-3 ★	-	Management of material topics	Introduction_Material topics of sustainability for the year	19	
Sector-specific issue	-	-	1.5.2 No. 1 in service	103	
Compliance with environmental laws (Material Topic #5)					
GRI 3-3 ★	-	Management of material topics	Introduction_Material topics of sustainability for the year	19	
Sector-specific issue	-	-	2.5.1 Compliance with environmental laws	180	

Note 1: ★ Indicates material topic

Appendix 2: TCFD Index

Aspect	Recommended disclosures	Corresponding chapter in the report	Page
Governance	Describe the board's oversight of climate-related risks and opportunities	2.1.1 Climate change governance	122
	Describe management's role in assessing and managing climate-related risks and opportunities	2.1.1 Climate change governance	122
Strategies	Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term	2.1.2 Risks and opportunities of climate change	123
	Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning	2.1.2 Risks and opportunities of climate change	124
	Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios	2.1.3 Analysis of climate change risk scenarios	130
Risk management	Describe the organization's processes for identifying and assessing climate-related risks	2.1.2 Risks and opportunities of climate change	122
	Describe the organization's processes for managing climate-related risks	2.1.2 Risks and opportunities of climate change	126
	Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management	2.1.2 Risks and opportunities of climate change	123
Metrics and targets	Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process	2.1.4 Climate change goals, indicators, and management performance	140
	Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas (GHG) emissions and the related risks	2.1.4 Climate change goals, indicators, and management performance	141
	Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets	2.1.4 Climate change goals, indicators, and management performance	140

Appendix 3: SASB Index

SASB Code	Accounting metric	Unit of measurement	Response for metric			Description	Page
EM-RM-110a.1	Gross global Scope 1 emissions, percentage covered under emissions limiting regulations	tCO_2e, %	2021	2022	2023	-	-
			97.1	97.1	97.1		
EM-RM-110a.2	Short-, medium-. and long-term Scope 1 reduction targets and strategies, and description of performance analysis	-	Corresponds to the following chapters: 2.1.4 Climate change goals, indicators, and management performance			-	140
EM-RM-120a.1	Air emissions of NOx, SOx, PM_{10}, H_2S, and VOCs	Tonne	Year	2021	2022	2023	There is no data on PM_{10} and H_2S because reporting is not required; the Company is currently evaluating the need to collect related data for the future
			NOx	2,948.4	2,958.90	2,595.80	
			SOx	703.0	1017.7	888	
			VOC	1,723.9	1,409.30	1,302	
			PM10	-	-	-	
			H2S	-	-	-	
EM-RM-120a.2	Number of refineries in or near areas of dense population	Quantity (factories)	CPC has 3 oil refineries located in densely populated areas (where population of the local town is more than 50,000)			These are: Taoyuan Refinery Plant in Guishan District, Taoyuan City, with local population of 172,200; Dalin Refinery in Xiaogang District, Kaohsiung City, with local population of 154,800; and Linyuan Petrochemical Complex in Linyuan District, Kaohsiung City, with local population of 68,400	-

SASB Code	Accounting metric	Unit of measurement	Response for metric			Description	Page
EM-RM-140a.1	Total fresh water withdrawn, water recycled, and water used in regions with high or extremely high baseline water stress	M^3	Total water withdrawn in 2023			For details, refer to chapter 2.3.2 Water consumption and management	164
			Dalin Refinery: 569,727,950	Taoyuan Refinery Plant: 288,527,678	Linyuan Petrochemical Plant: 748,931,872		
			Total water recycled in 2023				
			Dalin Refinery: 559,104,665	Taoyuan Refinery Plant: 282,109,471	Linyuan Petrochemical Plant: 735,570,500		
			Water used in regions with high or extremely high baseline water stress in 2022: 0 m^3				
EM-RM-140a.2	Number of incidents of non-compliance associated with water quality permits, standards, and regulations	Cases	CPC received 1 penalty from the authority for violation against the Water Pollution Control Act in 2023			For details, refer to chapter 2.3.2 Water consumption and management	164
EM-RM-150a.1	Amount of hazardous waste generated, percentage recycled	MT/ Percentage	Total volume of hazardous waste: 40,304.59	Percentage of given category relative to total waste: 29.70%	Percentage recycled: 0 %	For details, refer to chapter 2.5.3 Discharge and management of effluents and waste	185
EM-RM-150a.2	Number of underground storage tanks (USTs), number of USTs requiring cleanup, and percentage of UST assurance funds	Quantity (factories)	No. of USTs: 3,061	No. of USTs requiring cleanup: 0	Percentage of UST assurance funds: -	UST assurance funds are introduced under U.S. laws, which do not apply to CPC	-
EM-RM-320a.1	Total recordable incident rate (TRIR), fatality rate, and near miss frequency rate (NMFR) for full-time employees and contract employees	Percentage	TRIR: 0.028	Fatality rate: 0	NMFR: 0.916	TRIR = (Total accidents x 200,000)/ total work hours; Fatality rate = (Total deaths x 200,000)/ total work hours; NMFR = (Number of near misses x 200,000)/total work hours;	-
EM-RM-320a.2	Description of practices undertaken to evaluate, supervise, and reduce workers' exposure to long-term health risks	-	1. CPC continues to enforce ISO45001 re-certification; it adopts the PDCA model and creates a systematic occupational safety and health management framework to reduce changes of accident. 2. CPC has introduced a series of work safety and health training to improve employees' knowledge and skills on work safety and health, and encourages employees to take exams for occupational safety and health certifications as part of their professional capacity. 3. Emergency response drills are held on a regular basis to provide employees with relevant information and training on emergencies; all necessary equipment have been made available.			For details, refer to chapter 3.2.2 Employee safety protection	209
EM-RM-410a.1	Percentage of Renewable Volume Obligation (RVO) met through: production of renewable fuels, purchase of separated renewable identification numbers (RIN)	-	CPC only develops renewable fuel and is not involved in the production or sale; for this reason, it has no RVO and is not required to conduct market survey			For details, refer to chapter 2.2 Green energy transformation and circular economy	142
EM-RM-410a.2	Total addressable market and share of market for advanced biofuels and associated infrastructure	-					

SASB Code	Accounting metric	Unit of measurement	Response for metric		Description	Page
EM-RM-520a.1	Total amount of monetary losses as a result of legal proceeding associated with price fixing or price manipulation	Amount	CPC encountered no lawsuit in 2023 that involved manipulation of oil/gas price, and no monetary loss was reported.		For details, refer to chapter 1.4.1 Compliance	101
EM-RM-530a.1	Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry	Case count	CPC encountered 1 event of major penalty due to operational errors in 2023		For details, refer to 1.3.3 Response to significant events and 2.5.1 Compliance with environmental laws	87 180
EM-RM-540a.1	Process Safety Event (PSE) rates for Loss of Primary Containment (LOPC) of greater consequence (Tier 1) and lesser consequence (Tier 2)	Percentage	Tier 1 PSE 0	0.005	(Total Tier 1 PSEs / total work hours) ×200,000	-
			Tier 2 PSE	0.005	(Total Tier 2 PSEs / total work hours) ×200,000	-
EM-RM-540a.2	Challenges to Safety Systems indicator rate (Tier 3)	Percentage	0.32		(Total Tier 3 PSEs / total work hours) ×200,000	-
EM-RM-540a.3	Management system for identifying and mitigating catastrophic risks and back-end risks	Percentage	CPC places great emphasis in developing employees' risk management and crisis handling awareness as part of its efforts to implement proper risk management policies and crisis management systems. This increased awareness is believed to enable more efficient risk management and crisis handling and contribute to business sustainability, which is why every internal unit is bound to follow the risk management system for risk identification, risk analysis, risk assessment, risk handling, communication, negotiation, supervision, and review. Risks are also assessed on the organization level with proper actions taken in response.		For details, refer to chapters 1.3.4 Climate change management and 2.1.1 Climate change governance	87 122
EM-RM-000.A	Refining throughput of crude oil and other feedstocks	(10,000kL)	Oil products total sales (including petrochemical products and multilateral trade)	27.2 million kL	-	-
	Refining throughput of crude oil and other feedstocks	(100mn m^3)	Sale of natural gas products	26.143 billion cubic meters		
EM-RM-000.B	Refining operating capacity	(10,000kL)	21.17 million kL		-	-

Appendix 4: Sustainability Disclosure Indicators – Oil and Gas Sector

Rules Governing the Preparation and Filing of Sustainability Reports by TWSE Listed Companies – Attachment 1-7

No.	Indicator	Indicator category	Unit	Disclosure
One	Number of refineries in or near areas of dense population	Quantitative	Quantity	For details, refer to EM-RM-120a.2 of the SASB Index
Two	Volume of water withdrawn and consumed	Quantitative	Kilo cubic meters(m^3)	For details, refer to EM-RM-140a.1 of the SASB Index
Three	Weight of hazardous waste produced and percentage recycled	Quantitative	Tonnes (t); percentage (%)	For details, refer to 2.5.3 Discharge and management of effluents and waste and EM-RM-150a.1 of the SASB Index
Four	Number and percentage of people suffering occupational hazards	Quantitative	Percentage (%); count	For details, refer to EM-RM-320a.1 of the SASB Index
Five	Risk management policy for major incidents	Qualitative description	Not applicable	For details, refer to 1.3.3 Response to significant events and 1.3.4 Risk control
Six	Production capacity by main product categories	Quantitative	Varies by product type	For details, refer to EM-RM-000.A and EM-RM-000.B of the SASB Index

Appendix 5: Reference to United Nations Sustainable Development Goals (SDGs)

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By Royal Charter

INDEPENDENT ASSURANCE OPINION STATEMENT

CPC Corporation, Taiwan 2024 Sustainability Report

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

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

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

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

Scope

The scope of engagement agreed upon with CPC includes the followings:

1. The assurance scope is consistent with the description of CPC Corporation, Taiwan 2024 Sustainability Report.
2. The evaluation of the nature and extent of the CPC's adherence to AA1000 AccountAbility Principles (2018) in this report as conducted in accordance with type 1 of AA1000AS v3 sustainability assurance engagement and therefore, the information/data disclosed in the report is not verified through the verification process.

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

Opinion Statement

We conclude that the CPC Corporation, Taiwan 2024 Sustainability Report provides a fair view of the CPC sustainability programmes and performances during 2023. The sustainability report subject to assurance is free from material misstatement based upon testing within the limitations of the scope of the assurance, the information and data provided by the CPC and the sample taken. We believe that the performance information of Environment, Social and Governance (ESG) are fairly represented. The sustainability performance information disclosed in the report demonstrate CPC's efforts recognized by its stakeholders.

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

Methodology

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

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

Conclusions

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

Inclusivity

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

Materiality

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

Responsiveness

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

Impact

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

GRI Sustainability Reporting Standards (GRI Standards)

CPC provided us with their self-declaration of in accordance with GRI Standards 2021 (For each material topic covered in the applicable GRI Sector Standard and relevant GRI Topic Standard, comply with all reporting requirements for disclosures). Based on our review, we confirm that sustainable development disclosures with reference to GRI Standards' disclosures are reported, partially reported, or omitted. In our professional opinion the self-declaration covers the CPC's sustainability topics.

Assurance level

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

Responsibility

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

Competency and Independence

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

AA1000
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For and on behalf of BSI:

Peter Pu, Managing Director BSI Taiwan

Statement No: SRA-TW-789100

2024-06-13

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English Translation of a Report Originally Issued in Chinese

Assurance Report of Independent Auditors

To Chinese Petroleum Corporation

1. Scope

We have been engaged by Chinese Petroleum Corporation to perform a limited assurance engagement in relation to and report on selected sustainability performance indicators included in Chinese Petroleum Corporation 2023 Sustainability Report.

Regarding the sustainability performance indicators selected by Chinese Petroleum Corporation and their applicable criteria, please refer to appendix A.

Management responsibility

Chinese Petroleum Corporation is responsible for the preparation of 2023 Sustainability Report in accordance with adequate criteria, including referencing to Global Reporting Initiatives ("GRI") GRI Standards, and for the design, execution and maintenance of internal controls in regard with report preparation to support the collection and presentation of the Report.

Independent Auditor's Responsibility

Our responsibility is to plan and perform limited assurance engagement in accordance with the TWSAE3000 "Assurance Engagements other than Audits or Reviews of Historical Financial Information", issued by Taiwan Accounting Research and Development Foundation.

2. Assurance

The procedures performed in limited assurance engagement vary in nature and timing, and are less in extent than for a reasonable assurance engagement so that the level of assurance is substantially lower than reasonable assurance engagement. While we considered the effectiveness of Chinese Petroleum Corporation internal controls when determining the nature and extent of procedures, our review was not designed to provide assurance on internal controls.

To conclude for limited assurance, our procedures performed included:

- Interviewing with Chinese Petroleum Corporation management and personnel to understand the Chinese Petroleum Corporation implementation of overall sustainability and reporting process;
- Understanding the main stakeholders of Chinese Petroleum Corporation and their expectations and needs as well as interaction protocols by interview or examination of documentation and how Chinese Petroleum Corporation responded to those expectations and needs;

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- Performing analytical procedures on selected sustainability performance indicators, gathering and checking other supporting documentation and management information obtained, testing on sample basis if necessary;
- Reading Chinese Petroleum Corporation Sustainability Report to ensure the implementation of overall sustainability and reporting process is consistent with our understanding.

3. Limitations

Non-financial information contained within sustainability reports are subject to measurement uncertainties. The selection of different measurement techniques can result in materially different measurement. Also assurance engagements are based on selective testing of information being examined, and it is not possible to detect all of the existing material misstatements whether resulting from fraud or error.

4. Quality and Independence

We are in conformity with TWSQC1 "Quality Control for Public Accounting Firms" to establish and maintain a sound system of quality control, including code of professional ethics, professional standards and those written policies and procedures in applicable regulations. We are also in conformity with related independence and other ethics requirements in Taiwan's Norm of Professional Ethics, which basic principles are integrity, objectivity, professional competence and due care and professional behavior.

5. Conclusion

Based on our procedures and obtained evidence, nothing has come to our attention that causes us to believe that any material modifications or adjustments should be made to the selected sustainability indicators in accordance with applicable criteria.

Lu, Chian Uen
Ernst & Young
May 31th , 2024
Taipei, Taiwan, Republic of China

Notice to Readers
The reader is advised that the sustainability report has been prepared originally in Chinese. In the event of a conflict between the assurance report and the original Chinese version or difference in interpretation between the two versions, the Chinese language assurance report shall prevail

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Appendix A

No.	Section Title	Article Title	Subject matter information	Applicable Criteria
1	1.1 Our CPC	1.1.2 Directors overview	Overview of board meetings – 2023 16 meetings were held (Including extraordinary and regular board meetings) Directors and supervisors averaged an attendance rate of 92.8%	Self-selected indicator.
2	2.5 Pollution Prevention	2.5.2 Emissions and management of air pollutants	CPC has three oil refineries located in densely populated areas (where population of the local town is more than 50,000).	SASB EM-RM-120a.2： Global refineries located in or near areas of dense population, which are defined as urbanized areas with a population greater than 50,000.
3	Appendix 3	SASB Index	CPC received 1 penalty from the authority for violation against the Water Pollution Control Act in 2023. Note: This statistical data does not include cases with fines below NTD 300,000 and appealed cases.	SASB EM-RM-140a.2： Number of incidents of non-compliance associated with water quality permits, standards, and regulations.

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