



2023

TAIWAN COGENERATION CORPORATION
SUSTAINABILITY REPORT



FOSTERING NEW GROWTH WITH GREEN
ENERGY TO DRIVE A NEW ERA OF SUSTAINABILITY

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About this Report

Report Preparation

The sustainability report is prepared and issued by Taiwan Cogeneration Corporation (hereinafter referred to as "TCC" or "the Company") every year. To fully demonstrate the quality and transparency of the report, its content structure is based on the GRI Standards issued by the Global Reporting Initiative (GRI). The report also adheres to the "Rules Governing the Preparation and Filing of Sustainability Reports by TWSE Listed Companies" and the standards set by the Sustainability Accounting Standards Board (SASB) on disclosing information on the aspects of Environment (E), Social (S), and Governance (G).

Sources and Scope of Information

The information disclosure period of this report is from January 1, 2023, to December 31, 2023, and the scope of disclosure is mainly related to the operation of the Company's head office in Taiwan and the Guan Tian Plant. Depending on the completeness and importance of the information, relevant data of subsidiaries including Star Energy Corporation (hereinafter referred to as Star Energy), TCC Green Energy Corporation (hereinafter referred to as TCC Green Energy), as well as major invested natural gas power plants including Chang Bin Gas-Fired Power Plant of Star Energy Power Corporation (hereinafter referred to as Star Energy Power), Fong Der Gas-Fired Power Plant of Sun Ba Power Corporation (hereinafter referred to as Sun Ba Power), Star Buck Gas-Fired Power Plant of Star Buck Power Corporation (hereinafter referred to as Star Buck Power), and Kuo Kuang Gas-Fired Power Plant of Kuo Kuang Power Co., Ltd. (hereinafter referred to as Kuo Kuang Power) is appropriately disclosed. In addition, basic information of subsidiary companies covered in the consolidated financial statements is also disclosed. The financial data is disclosed in accordance with the financial statements of the International Financial Reporting Standards (IFRS) and presented in New Taiwan Dollars (NTD), and the corresponding audit report is issued by Deloitte Taiwan.

Report Management

The information and data in this report are provided by various departments of TCC, the Guan Tian Plant, the three invested natural gas power plants (Chang Bin Gas-Fired Power Plant of Star Energy Power, Star Buck Gas-Fired Power Plant of Star Buck Power, Fong Der Gas-Fired Power Plant of Sun Ba Power), and various subsidiaries. Data are compiled by the Planning & Investment Management Dept. of TCC, and checked by the heads of each unit for compliance with the purpose of this report.

Report Assurance

The Company entrusted Ernst & Young to carry out limited assurance in accordance with the TWSAE 3000 "Assurance Engagements Other than Audits or Reviews of Historical Financial Information" (with reference to the International Standard on Assurance Engagements 3000 [ISAE3000]) issued by the Accounting Research and Development Foundation, confirming the compliance with the disclosure principles of GRI Standards. The limited assurance report of the independent auditor is detailed in the Appendix of this report.

Issuance Time and Frequency

The Company's sustainability report is issued on an annual basis. The electronic version of the report can be downloaded from the Company's official website.

Issue time of current report: June 2024

Issue time of next report: expected to be released in June 2025.

Contact Information

We value your feedback on this report. If you have any suggestion or advice, please feel free to contact us. The contact information is as follows:

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Message from the Chairman

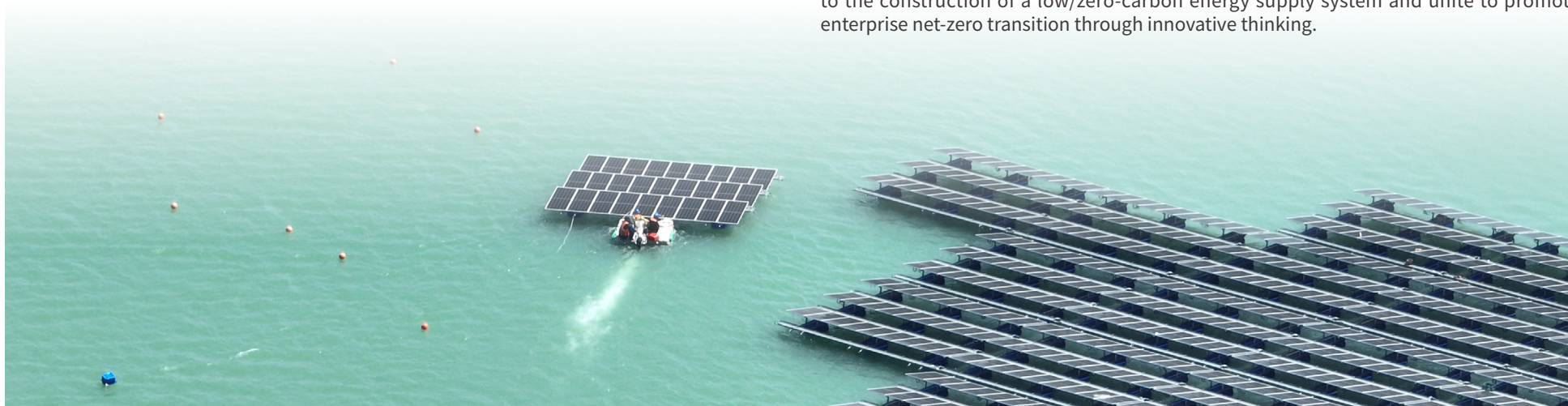
Climate Governance to Achieve Our Vision

Climate change is one of the most concerning issues facing the world today. It not only affects the global environment, but also increases the frequency of extreme weather and natural disasters, which has a major impact on human society and poses great challenges to business operations. According to the Global Risk Report 2024 issued by the World Economic Forum (WEF), extreme weather remains the risk most likely to trigger major crises on a global scale. Climate action is urgent, and no one can shirk their responsibility. As a corporate citizen, TCC firmly believes that achieving sustainable development requires a balanced approach to the Environment (E), Society (S), and Governance (G). Guided by this principle, we've established core corporate values and formulated sustainable development strategies that align with the United Nations' Sustainable Development Goals (SDGs). We regularly review our short-, medium-, and long-term goals to realize our corporate vision, enhance climate resilience, and increase the Company's competitiveness. We are committed to becoming a pioneer within the energy industry and leading the way toward a net-zero and sustainable future.



E - Innovative Thinking for Net-Zero Transition

To achieve Taiwan's 2050 net-zero emissions target, the government has proposed pathways and strategic goals for net-zero emissions. In 2023, the Climate Change Response Act was established to incorporate the net-zero target into law. With the implementation of domestic carbon fees, the EU's Carbon Border Adjustment Mechanism (CBAM), as well as the requirement for international supply chains to disclose carbon footprints, it is anticipated that global standards for net-zero emissions will become more consistent in the future. As the first listed private-owned power company in Taiwan, TCC views achieving net-zero emissions as its corporate responsibility. We support government energy transition policies, reducing fossil fuel use, enhancing energy efficiency, and expanding renewable energy projects. In the short term, we are aiming to continuously invest in low-carbon gas-fired combined cycle power generation units and the development of renewable energy projects. We are also investing in the establishment of joint booster stations to help resolve issues of grid connection capacity in solar photovoltaic hot zones; furthermore, we will participate in ancillary services and engage in new types of power markets such as energy storage. In the medium and long term, we will continue to promote the renewal and life extension of existing gas-fired power plants, evaluate the introduction of hydrogen co-firing, and develop carbon capture, utilization, and storage (CCUS) technologies. With these efforts, we contribute to the construction of a low/zero-carbon energy supply system and unite to promote enterprise net-zero transition through innovative thinking.





S - Diverse, Equitable, and Inclusive Society

TCC firmly believes in the importance of respecting human rights and creating a diverse and equitable work environment. In addition to formulating human rights policies in accordance with international conventions such as the United Nations' Universal Declaration of Human Rights (UDHR), we are committed to ensuring that employees' human rights are protected. We shape a culture of Diversity, Equity, and Inclusion (DEI) that ensures employee well-being and social inclusion. We provide a diverse and equitable work environment where everyone is treated fairly, creating a happy workplace that maintains a balance between health and work for employees. TCC values talent selection, cultivation, and retention. To ensure that talent development aligns with the Company's operational needs, we have established training programs that support sustainable business operations and employees' career growth. Additionally, we actively contribute to industry talent development by participating in the Electric Grid Talent Alliance initiated by the Industrial Technology Research Institute (ITRI) and collaborating with the Metal Industries Research & Development Centre as well as vocational schools. Through cooperation with industries, the government, research institutes, and academia, we nurture talents in the energy industry, enhance technical capabilities in the power sector, and cultivate cross-disciplinary sustainable expertise. We are committed to promoting the net-zero transition of the energy industry and fostering social inclusivity and mutual benefit.



G - Integrity, Transparency, and Sustainable Governance

To align with international corporate governance trends, regulatory authorities have been continuously promoting Corporate Governance 3.0 - Sustainable Development Roadmap. In 2023, the authorities officially launched Corporate Governance 4.0-Sustainable Development Action Plans, an initiative aimed at leading companies in deepening their sustainable governance practices. The Financial Supervisory Commission (FSC) has further mandated that, starting from 2025, listed companies must incorporate sustainability information management into their internal control systems. This requirement is designed to enhance the disclosure of ESG information and improve communication and engagement with stakeholders. TCC upholds the principle of integrity management and is committed to improving corporate governance. Since 2016, we have been ranked among the top 20% of listed companies for corporate governance evaluation, even reaching top 5% for 4 years. In 2023, TCC received the "Top 100 Sustainability Exemplary Awards" and the "Sustainability Report Gold Award" of the

Taiwan Corporate Sustainability Awards (TCSA), as well as the "Excellence in Corporate Social Responsibility - Medium-sized Enterprises" award of CommonWealth Magazine. In 2023, TCC's green procurement reached NT\$450 million, and we were once again honored with the "Green Procurement Award" and the national-level "Outstanding Performance in Green Procurement" recognition from the Ministry of Environment. These recognitions affirm TCC's determination in implementing a sustainable supply chain and becoming a benchmark for corporate governance.

Rooted in the Present, Looking to the Future

For TCC, 2023 was a challenging yet fulfilling year. In addition to successfully completing a cash capital increase, which further stabilized the Company's financial structure, our overall operational performance was outstanding, with after-tax net profit reaching a record high. The Group's cumulative renewable electricity sold exceeded 460 GWh, making it the largest renewable-energy-based electricity retailing enterprise in terms of the amount of green energy sold in Taiwan. Recalling to the pandemic period, the global economy was facing severe challenges.

Now, with the ongoing Russia-Ukraine war and the eruption of the Israel-Palestine conflict, the importance of alternative energy sources has become even more evident amid international political and economic instability. For Taiwan, which is situated in a geopolitically sensitive region, the development of diverse and autonomous energy sources is crucial. This aligns with the Company's future direction, as we continue to expand in core areas such as renewable energy, cogeneration, and gas-fired power plants. Looking back, TCC has upheld a sound business philosophy, laying a solid foundation with careful and deliberate steps. In this rapidly changing era, only by learning from the past and seizing opportunities can we face future challenges. Standing at the forefront of the energy transition, we aim to grasp trends and move toward net-zero emissions, creating another 30 years of prosperity for TCC!



2023 Sustainability Performance Highlights

Environmental

► Renewable Energy Retailing

137 GWh of renewable energy sold in 2023

► Solar Photovoltaic Power

Wushantou Reservoir's floating solar photovoltaic project generated over **18.5 GWh** in 2023

The **120 MW** Qigu joint booster station was connected to the grid

► Wind Power

Power generation exceeded **118.21 GWh** in 2023

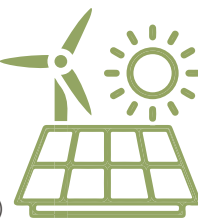
O&M of **116** wind turbines

► Estimated electricity saving rate for the Guan Tian Plant in 2023 was **0.85%**

Cleared **24,614** metric tons of scrap tires / Used **3,620** metric tons of SRF

The percentage of alternative fuel use was **25.74%**

► The 3 invested IPPs reduced approximately **1.3 million** metric tons of CO₂e (Equivalent to the carbon reduction of approximately **3,340** Daan Forest Park)



Social

► Talent Cultivation

Learning hours of employees for digital and physical courses reached **51.8** hours/person

Learning hours of middle and senior management for digital and physical courses reached **26.1** hours/person

Promoted core workforce training programs

Implemented mid-to-senior management development programs

► **3 days of volunteer leave** per year

► **1.11 million hours with no occupational accident** in the Guan Tian Plant since its establishment

► Social Participation Activities

Hope Reading Program - volunteering at a rural elementary school

Eat Vegan for the Earth Day, Vegan Day once a month

Co-organized the Taya Marathon, Sponsored the Tianzhong Marathon

Participated in the Power School and Talent Development Alliance



Governance

► Earnings per share (EPS) reached **NT\$1.82**

► Sustainable Supply Chain

CSR Commitment sign-off rate was **95%**

Self-Assessment Questionnaire sign-off rate **91.3%**

► Strengthened Human Rights Protection and Inclusion

► Enhanced Digital Utilization

► Customer Satisfaction of the Guan Tian Plant scored **95.6**

► Received the "2023 Green Procurement Award"

► Procurement amount reached **NT\$450 million**



Awards

► Ranked top **6-20%** of listed companies in the 10th corporate governance evaluation

► Taiwan Corporate Sustainability Awards (TCSA)

Sustainability Report Gold Award
Top 100 Sustainability Exemplary Awards

► Excellence in Corporate Social Responsibility Award of Commonwealth Magazine

Ranked 9th in the Medium-sized Enterprise category



Sustainability Column

In recent years, with increasing domestic and international focus on actions such as mitigating climate change, achieving net-zero emissions, ensuring human rights equality, promoting diversity and inclusion, and preserving biodiversity, companies can no longer pursue financial performance alone, instead they must take into account the development of Environment (E), Society (S), and Governance (G) to achieve a sustainable future. As a global citizen, TCC continues to focus on ESG development and energy trends. Leveraging our core expertise in power generation, we are helping to stabilize the domestic power supply while upholding corporate social responsibility and the principle of "taken from society, giving back to society", thereby fostering community inclusion.

Developing Wind and Solar, Achieving Common Good with Green Energy

Taiwan relies on imports for 98% of its energy, and due to its geographical characteristics as an island nation, its power grid operates independently. Therefore, enhancing diverse and autonomous energy sources is crucial for ensuring a stable power supply. Moreover, to mitigate the impacts of climate change, countries around the world are becoming more active in developing renewable energy. To promote Taiwan's energy transition, the government amended the Electricity Act in 2017 and planned the energy development direction based on "promoting green energy, increasing natural gas, reducing coal-fired, and achieving nuclear-free", ushering in a new era of flourishing green energy.

In alignment with the government's green energy policies, TCC is actively developing its renewable energy business, as we are currently investing in a 49.8 MW wind power project located in the Miaoli region. The area exhibits exceptional conditions for wind power generation, with an average annual wind speed of 6.5-7.5 m/s and an average wind power density of 400 W/m². Star Wind Corporation's 10.35 MW wind farm is located in Fangyuan, Changhua, capable of providing over 100 GWh of green electricity annually. To optimize the use of natural resources and enhance wind power's energy conversion efficiency, TCC have actively conducted environmental impact assessments for the renewal of existing projects. Upholding the principle of balancing energy development with environmental protection, TCC has devised mitigation measures to reduce ecological impacts and ensure minimal negative effects on the environment and local communities. This effort contributes significantly to the domestic supply of green electricity. In addition to onshore wind power investments and development, TCC is also involved in the operation and maintenance (O&M) of 116 onshore wind turbines. Moreover, TCC has undertaken various onshore substation projects for the Ørsted's Greater Changhua Offshore Wind Farm CHW0102 and 2204 projects, as well as the Taipower Offshore Wind Farms Phase I and II. With diverse operations and a comprehensive track record, TCC plays a significant role in the development of wind power in Taiwan.



Star Wind Corporation (Star Wind)



Miaoli Wind Co., Ltd. (Miaoli Wind)

Climate and geographic conditions are major factors influencing the development of solar photovoltaic power. Taiwan's central and southern regions have excellent sunlight conditions. To resolve the issue of insufficient capacity of grid connection for solar photovoltaic hot zones, TCC invested in the construction of a joint booster station in Qigu, Tainan, with 120 MW connected to the grid and commenced commercial operations at the end of October 2023. This not only effectively alleviates grid connection difficulties in solar photovoltaic hot zones, but also reduces the environmental impact of repeated construction, enhancing the benefits of green energy development. Furthermore, TCC is actively involved in the development and O&M of similar projects. Following the commercial operation of the Wushantou Reservoir Floating Solar Photovoltaic Power Phase I Project (13.7MW), TCC also acquired the Phase II Project (13.2MW) in February 2023. This is expected to provide an additional 18 GWh of green electricity annually.



Joint booster station in Qigu

Green Energy Services with Innovative Values

TCC not only has professional capabilities and extensive experience in renewable energy investment, development, engineering project contracting and O&M, but also has expanded into new business models such as green electricity retailing and ancillary services in recent years. While deepening its expertise in its professional fields, TCC strives for innovation and proactively seizes business opportunities to provide customers with comprehensive, high-quality power services.

TCC's wholly-owned subsidiary, TCC Green Energy, obtained the second renewable energy retailing license of Taiwan in 2019 and began selling electricity through wheeling in 2020. By the end of 2023, it had wheeled a total of over 460 GWh of electricity, making it the leading retailer of renewable energy in Taiwan. TCC Green Energy has a proven track record in wind, solar, and hydro renewable energy retailing, having assisted benchmark companies from various industries in achieving their net-zero transition goals. With a professional approach, TCC Green Energy provides customized renewable energy solutions for its customers, working together toward a sustainable future. Due to the decentralized and uncertain nature of renewable energy, the challenges of power dispatch increase as the share of renewable energy rises. To address these issues, Taipower established an Energy Trading Platform (ETP) in October 2021, encouraging power enterprises and Independent Power Producers (IPPs) to participate in ancillary services. This platform incorporates resources that can respond quickly and flexibly to maintain grid stability. In 2022, TCC utilized Guan Tian Plant as an operating resource to obtain qualified trading status and officially participate in the ancillary services market for supplemental reserve bidding. This made Guan Tian Plant the first cogeneration plant in the country to directly participate in the Energy Trading Platform. According to regulations, participation in the ETP with agency resources requires at least three ETP Expertise Certificates. TCC Green Energy has already obtained ten ETP Expertise Certificates, demonstrating comprehensive ancillary service operating capabilities. In the future, TCC Green Energy will also seek to incorporate external resources to expand its business in green energy.



Wushantou Reservoir Floating Solar
Photovoltaic Power Plant

Resource Recycling for Symbiotic Sustainability

Energy transition alone is not enough to achieve the national net-zero emissions target; resource integration and waste recycling are also essential components. Taiwan's Pathway to Net-Zero Emissions in 2050 promotes the strategy of converting waste into valuable resources and advocates for cement, steel, paper, petrochemical, and energy sector to co-fire Solid Recovered Fuel (SRF) in boilers. This approach reduces carbon emissions and provides an alternative method for waste treatment, which promotes resource recycling, minimizes waste generation, conserves natural resources, and contributes to sustainable development on Earth. Since cogeneration plant was how TCC started its business, the boiler at the Guan Tian Plant had already adopted the Circulating Fluidized Bed (CFB) design from the beginning, which is capable of co-firing auxiliary

fuels such as scrap tires, Refuse-Derived Fuel (RDF), and pulp and paper mill waste. By using scrap tires as an auxiliary fuel, the Guan Tian Plant could offer a hand in waste reduction. After obtaining the necessary permits in April 2023, the plant began using SRF, continuously adding value to waste materials, with the overall heating value of alternative fuels used reaching 25.74%. Committed to practice the principles of a circular economy, Guan Tian Plant has collaborated with suppliers to mix coal ash produced from the combustion process with raw materials of cement to create Controlled Low Strength Materials (CLSM), which can be used as backfill for trenches and road infrastructure. TCC values the idea of environmental sustainability, as scrap tires and SRF are sourced from compliant fuel manufacturers. Our contracts clearly document the SRF manufacturing process and test results, while suppliers are required to adhere to international standards and labor regulations, to ensure the protection of employees' rights and human rights, to uphold the principles of business integrity, and to commit to the maintenance of public health, safety, and the ecological environment. Suppliers are also required to sign a Corporate Social Responsibility (CSR) commitment. In this way, TCC incorporates basic human rights protection and corporate social responsibility into supply chain management, working together with suppliers to achieve sustainable development.



Coal ash recycling and reuse

Solid Recovered Fuel (SRF)

Solid Recovered Fuel (SRF) is a combustible waste material that can be directly used or processed into fuel. It is composed of waste paper, waste wood, waste fibers, etc. SRF must comply with the Guidelines and Quality Standards for the Solid Recovered Fuel Manufacturing Technology to ensure that it meets quality standards. The boilers and combustion-based power generation equipment that use SRF must also meet the emission standards applicable to their facilities. This minimizes the environmental impacts and human health effects of SRF throughout its life cycle.



Strengthening Local Inclusion through Reading Programs

TCC places great importance on local engagement, and strives to maintain good relationships with neighboring communities. While developing energy projects, TCC recognizes that inadequate basic infrastructure, lack of physical resources and impacts of population decline and aging are happening in nearby towns. These communities need equal access to quality educational support. Holding the belief in local inclusion and the importance of education, TCC partnered up with the CommonWealth Magazine Education Foundation to promote the Hope Reading Program in the Fangyuan area of Changhua. Through book donations and promotion of reading activities, the program aims to encourage children to develop reading habits and independent learning skills. In addition to provision of resources, TCC employees formed a volunteer group to visit Cao-Hu Elementary School in Fangyuan, Changhua. Using picture books and hands-on experiments, they introduced children to electricity and energy-related sustainability issues. Attending courses from the CommonWealth Magazine Education Foundation, the volunteers learned how to categorize and read picture books by ages, practice ice-breaking techniques, and perform quick activities to engage children in discussions about energy topics. The volunteers personally participated in every aspect of the program, hoping to impart energy related knowledge upon children in a simple and understandable manner. During the program, TCC also collaborated with Taipower D/S ONE to conduct the Sustainable Home hands-on activity, which helped students in upper grade levels understand how wind power is generated and how electricity is transmitted in daily life. By linking everyday life with electricity, the students gained a deeper understanding of energy.



Making paper windmills with children



Energy Storybook Reading

Volunteer Experience Sharing

Before the event, I was worried that the kids might find it boring or that I wouldn't tell the story well enough. I even brought candy and toys to help break the ice. It's funny that I'm so far removed from first and second grade, I didn't even know what kind of candy kids like these days. Surprisingly, the event turned out to be fantastic. The kids were brilliant—not only did they know what wind turbines were due to the local environment, but they also listened attentively and eagerly answered questions during the story session. The success of the event can also be attributed to the classroom teacher. We weren't really sure about the kids' capabilities, but the teacher provided timely reminders about phonetic spellings of words and suggested useful props. We are very grateful to the teachers and students of Cao-Hu Elementary School for giving us, the volunteer team, such an opportunity.

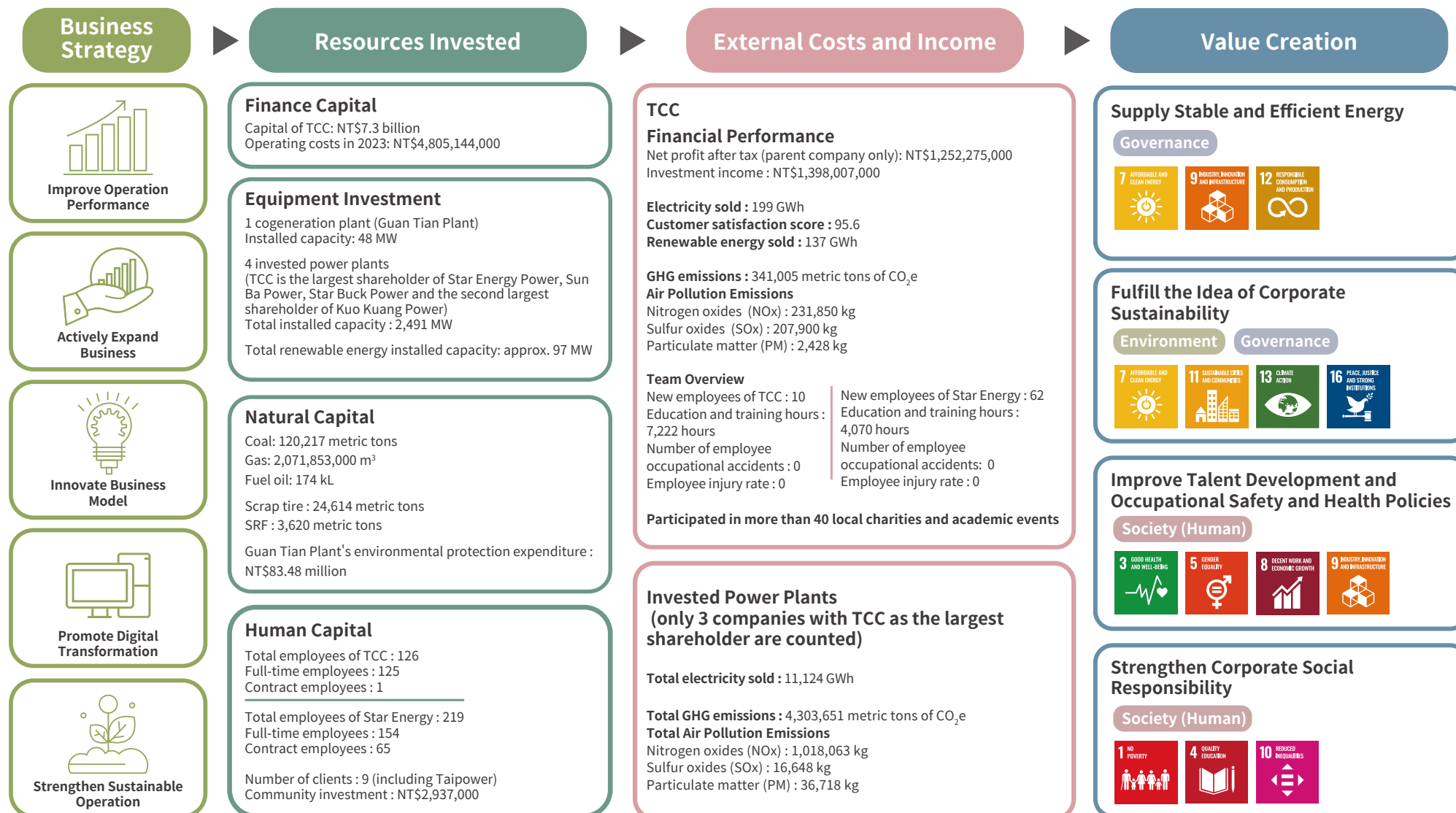
**Volunteer from the
Project Development Dept.**

Setting off from Neihu, Taipei, I followed the footsteps of CommonWealth Magazine's "Hope Reading Program" to Cao-Hu Elementary School in Fangyuan Township, Changhua County. Bringing two picture books and a passionate heart, I was ready to share stories with the children about "The Boy Who Harnessed the Wind" in Africa and the origins of "Super Power".

Among the sixth graders at Cao-Hu Elementary School, I discovered minds filled with creativity. Even though they seemed shy, they answered all my questions. They possessed strong foundational knowledge, and perhaps they just needed a little encouragement from reading to let their imaginations soar and shine with unexpected energy. Perhaps the seeds of sustainable development have already started to germinate in their minds...

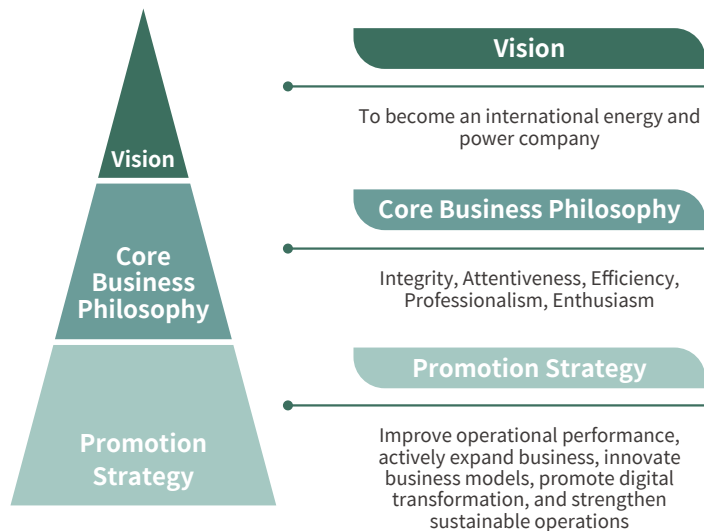
**Volunteer from the
Legal Affairs Office**

Business Strategy and Value Chain of TCC



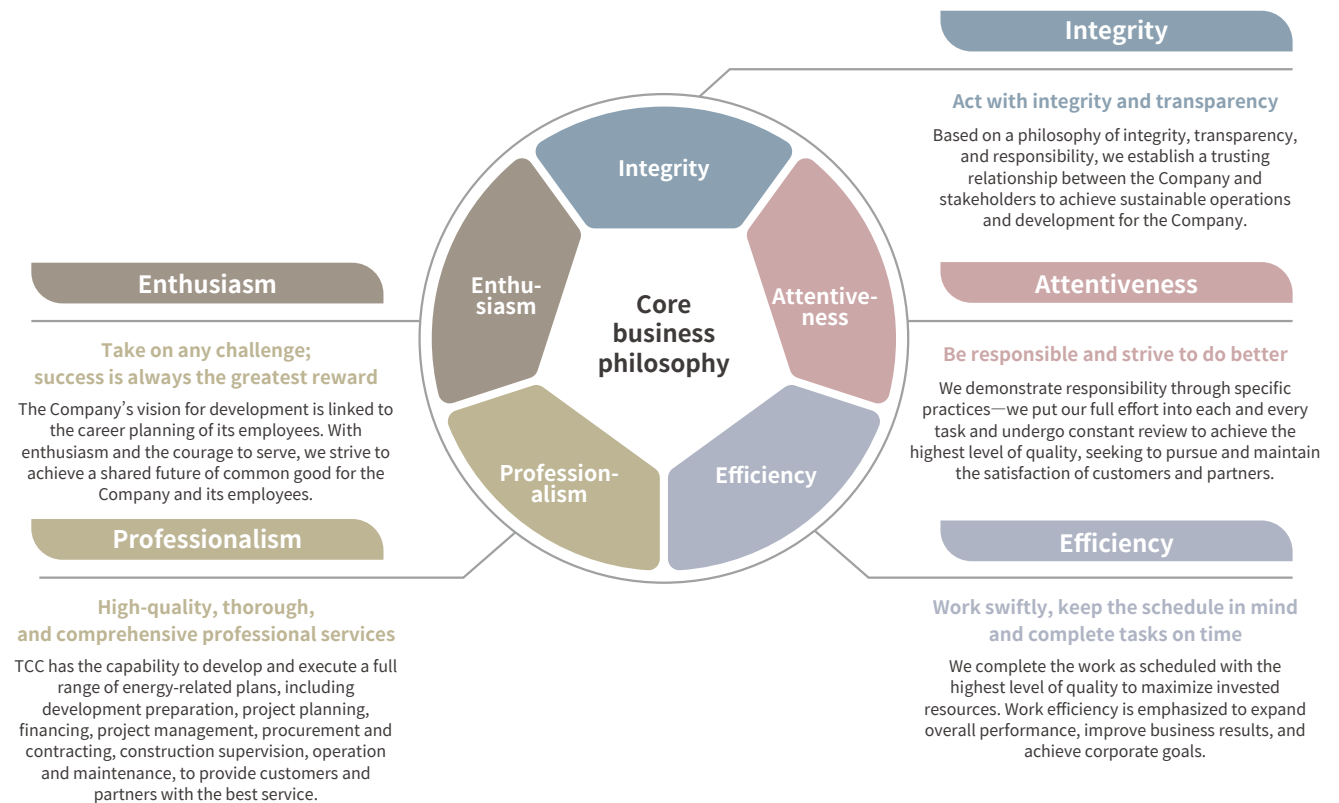
Vision and Strategy for Sustainable Development

In 2015, the United Nations announced 17 Sustainable Development Goals (SDGs) to drive governments, businesses, and individuals worldwide to focus on and take action on sustainability issues. TCC upholds the principle of integrity in its operations, with the vision of "becoming an international power and energy company", we have developed sustainable strategies across the three aspects of Environment, Society, and Governance in response to global sustainability trends, as well as internal and external environmental and policy changes. TCC will continue to respond to the United Nations Sustainable Development Goals by implementing concrete actions that fulfill corporate sustainable operation.






After over 30 years in business, TCC has become a company capable of providing a full range of services, including investment and development, engineering project contracting, O&M, renewable energy retailing, ancillary services, and energy storage.

Core Business Philosophy:



In response to climate change and the rapidly changing business environment, TCC has formulated short- and mid- to long-term material topics, overall company strategies, and action plans based on its vision and business philosophy, with consideration for internal and external factors, major government policies, and company resources such as manpower and finances. TCC has developed a 5-year future business strategy, which is reviewed and updated annually to promptly address changes in the internal and external environment. This allows TCC to adjust its overall strategy and business direction in a timely manner, ensuring the implementation of sustainable business practices and progress toward the Sustainable Development Goals.

Direction of Sustainability Strategy			Mid- and Long-Term Goals
	<ul style="list-style-type: none">▶ Actively expand business▶ Innovate business model▶ Strengthen sustainable management	<ul style="list-style-type: none">• Expand the development of green energy business• Strengthen environmental management and pollution prevention• Implement environmental sustainability• Establish a green circular economy model	<ul style="list-style-type: none">• Actively develop renewable energy projects and enhance competitiveness in engineering contracting and O&M capabilities• Strengthen renewable energy retailing, ancillary services, and energy storage businesses• Continue to promote the establishment of environmental and energy-related management systems, upgrade power plant units and pollution prevention equipment, and strengthen the energy efficiency of units• Establish a GHG management mechanism and set target for the percentage of renewable energy use• Fulfill the idea of regional resource integration and circular economy
	<ul style="list-style-type: none">▶ Promote digital transformation▶ Strengthen sustainable management	<ul style="list-style-type: none">• Establish a complete talent management and training mechanism• Create a happy and healthy workplace• Implement social participation and contribution	<ul style="list-style-type: none">• Improve the human resources recruitment system, talent rotation system, and internal mentor system; strengthen the internal rotation mechanism• Strengthen the employee performance evaluation and management structure, and link it to the strategy, core values, and vision of the Company• Maintain zero occupational injuries, strengthen employee health management, and create a good working environment• Improve the supplier/contractor sustainability commitment• Actively integrate the focus of social participation activities with the Company's businesses to strengthen local capacity
	<ul style="list-style-type: none">▶ Improve operational performance▶ Actively expand business▶ Innovate business model▶ Promote digital transformation▶ Strengthen sustainable management	<ul style="list-style-type: none">• Improve corporate governance and competency of the Board• Improve the transparency and timeliness of information disclosure• Build risk response capabilities• Build a sustainable supply chain• Improve service quality• Expand existing businesses and develop innovative business models	<ul style="list-style-type: none">• Improve operational performance and strengthen investment management• Improve corporate governance rules and regulations• Continuously strengthen the operations of the ESG Sustainability Committee, and enhance the completeness, quality, and timeliness of information disclosure• Enhance diversified channels of interaction and communication with stakeholders• Strengthen information security management and optimize digital management systems• Strengthen corporate risk culture and improve internal control systems

10

Sustainable Development

ESG Sustainability Committee

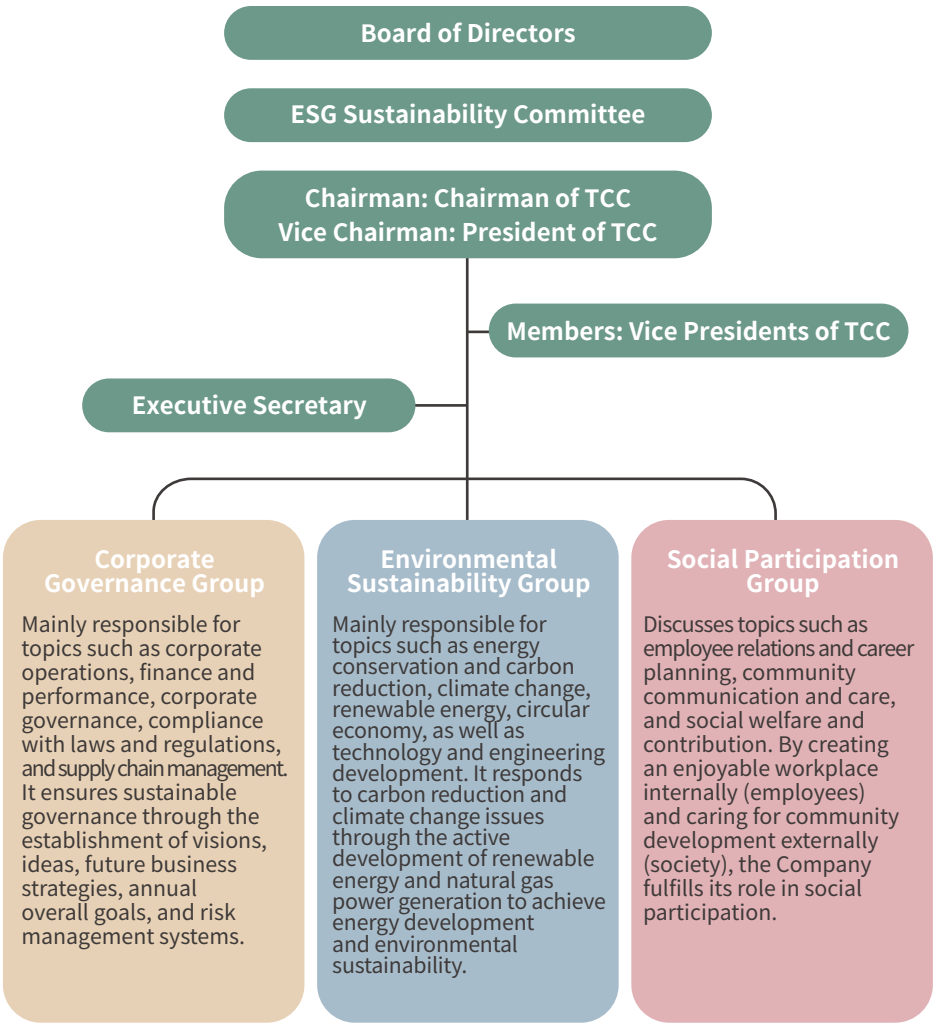
The Board of Directors of TCC is the highest governing body for promoting sustainable development. In addition to reviewing and approving the Company's "Principles of Sustainable Development", the Board provides insights on ESG-related initiatives and the Company's future business strategies. The Board's performance evaluation also considers the Board's level of participation and decision-making quality with regard to ESG. The Board oversees the promotion of the Company's sustainable development strategies and goals. Furthermore, the ESG Sustainability Committee was established to review, examine, and revise the Company's sustainable development policies and oversee the annual work plans, promotion, implementation, review, and improvement of various working groups. The Committee is required to convene at least once per year and report on the company's promotion and implementation status to the Board of Directors, thereby enhancing the effectiveness of the Company's sustainable development efforts.

The Committee is chaired by the Chairman of the Board, with the President of TCC serving as the Vice Chairman. It has a Promotion Group that meets as needed based on the planning and execution requirements of specific issues to ensure the promotion of the Company's ESG-related work. The Promotion Group formulates ESG-related indicators on an annual basis, which are submitted to the Committee for review and used as a reference for setting the Company's overall goals and the annual KPIs for each unit. Additionally, an Executive Secretary is appointed to coordinate the overall operations of the Group's sustainable development efforts.

* TCC established the "Corporate Social Responsibility Promotion Committee" in 2017 and renamed it to the "ESG Sustainability Committee" in 2021.



Organizational Structure



Promotion of ESG-related Tasks in 2023

The implementation status of the ESG Sustainability Committee's main tasks in 2023 is as follows:

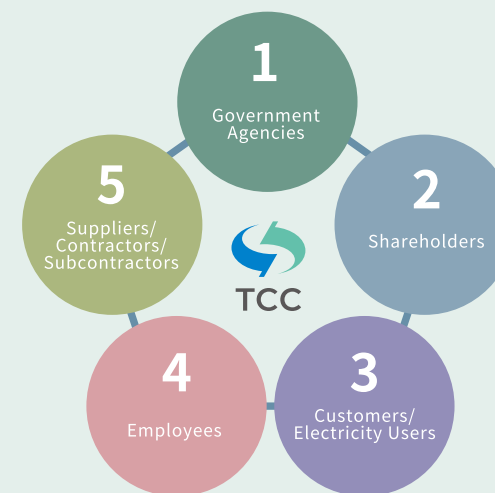
Date	Work Item	Highlights
2023/05	Field audit for the 2022 Sustainability Report assurance	<ul style="list-style-type: none"> Carried out the assurance work for the Report and obtained the third-party assurance.
2023/06	Issuance of the 2022 Sustainability Report	<ul style="list-style-type: none"> The Company's 2022 Sustainability Report received the Sustainability Report Gold Award in the Taiwan Corporate Sustainability Awards (TCSA).
2023/10	2022 Sustainability Report closing meeting	<ul style="list-style-type: none"> Carried out the closing presentation for the 2022 Sustainability Report project.
2023/11	2023 ESG sustainable development promotion meeting	<ul style="list-style-type: none"> Reviewed the implementation of ESG-related work in 2023 and discussed highlights of 2023 Sustainability Report.
2023/12	Kick-off meeting for the 2023 ESG Sustainability Committee and Sustainability Report Project	<ul style="list-style-type: none"> Resolved matters for discussion proposed by the working groups. Set the focuses and plans for ESG promotion in 2023. Planned the schedule of the 2023 Sustainability Report. Defined 21 ESG-related indicators and incorporated them into departmental key performance indicators (KPIs).
	Report to the Board of Directors on the promotion of sustainable development	<ul style="list-style-type: none"> On December 22, 2023, the Board was briefed on the promotion of sustainable development for the year, the work plan for 2024, and the status of stakeholder communication.
2024/05	Submission of the 2023 Sustainability Report for Board Approval	<ul style="list-style-type: none"> The 2023 Sustainability Report was submitted to the Board for approval on May 9, 2024.

Analysis of Material Issues

Stakeholder Engagement

TCC attaches great importance to communication with stakeholders. To ensure that the material topics concerned by stakeholders are included in the Company's sustainable development policy and to establish smooth communication channels as well as a transparent response mechanism, TCC refers to AA1000 Stakeholder Engagement Standard (SES) 2015 and the experience of domestic/international benchmarking peer groups to identify stakeholders who are relevant to TCC's business activities. Finally, based on their status, five types of stakeholders were categorized, from government, shareholders, customers/electricity users, and employees to suppliers/contractors/subcontractors.

Result of Stakeholder Identification



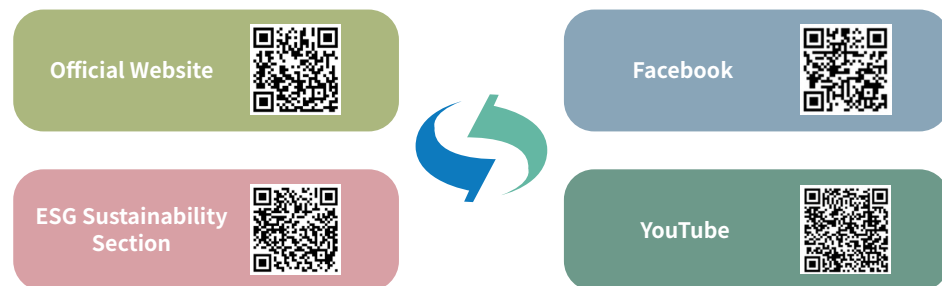
Topics concerned by these five major stakeholders share a certain degree of impact on TCC's sustainable development. As a corporate citizen, TCC designates exclusive communication channels for each stakeholder. Adopting substantive analysis, the most important topics for stakeholders and TCC are identified. Subsequently, necessary measures are implemented to strengthen the content of information disclosure, serving as the basis for sustainable development.

Stakeholder Communication Channels

▲ Regularly (weekly/monthly/quarterly/annually) ◆ Irregularly

Stakeholder	Relevance to TCC	Communication Method and Frequency	Concerned Topics	Engagement Results	Corresponding Section
Government Agencies	The energy industry is supervised by the competent authority. In response to government policies, market development and related development activities are subject to inspections by the competent authority.	<ul style="list-style-type: none"> Seminars, forums, public hearings, training courses, and informal mutual visits concerning various policies and regulations ◆ Attend symposiums, seminars, evaluation and audit activities organized by the competent authority ◆ Official documents and letters/emails ▲ 	<ul style="list-style-type: none"> Integrity management and legal Evaluation and response to policies regarding electricity Renewable energy development Energy management and circular economy Economic Performance 	By actively participating in public hearings and symposiums organized by the government, TCC discusses with the competent authorities on issues related to renewable energy and the purchase rate of surplus electricity from cogeneration.	<ul style="list-style-type: none"> 1.1.2 Economic Performance 1.2 Corporate Governance and Integrity Management 2.1 New Direction for Energy Transition 2.2 Reliable Green Electricity Expert 2.3 High Quality Customer Service 3.1 Climate Change and Energy Management 3.2 Environmental Protection
Shareholders	It is TCC's mission to protect shareholders' rights and interests, as well as to create value for shareholders.	<ul style="list-style-type: none"> Investor conferences, direct communication between senior managers and investors ▲ Issuance of annual financial report ▲ A designated section on the Company's website for investors ▲ Shareholders' meeting ▲ 	<ul style="list-style-type: none"> Economic performance Supply stability and reliability Corporate governance and sustainability strategy Renewable energy development Integrity management and legal compliance Occupational safety and health Information security management 	Explain the current business situation to shareholders through various means. In 2023, 4 investor conferences were held to disclose financial and business status. We answered shareholders' questions on improving TCC's business operations and corporate governance. There is a designated section on the Company's website for investors, which contains contact information, serving as a communication channel for investors to make inquiries and provide feedback in real-time.	<ul style="list-style-type: none"> Sustainable Development Vision and Strategy for Sustainable Development 1.1.2 Economic Performance 1.2 Corporate Governance and Integrity Management 2.1 New Direction for Energy Transition 2.2 Reliable Green Electricity Expert 2.3 High Quality Customer Service 3.1 Climate Change and Energy Management 3.2.1 Circular Economy of Waste Resources
Customers/ Electricity Users	Customer support is of great significance to TCC; therefore, our core spirit is to provide professional services to our customers.	<ul style="list-style-type: none"> Customer satisfaction survey ▲ Visits and discussion through meetings ◆ Telephone and mail/email ◆ 	<ul style="list-style-type: none"> Supply stability and reliability Customer relations Technology R&D and innovation Air pollution control Water management Waste management 	Meet customer needs and improve customer service through online or in-person communication, customer satisfaction surveys and visits, etc. In 2023, the customer satisfaction survey from 8 customers reached a score of 95.63.	<ul style="list-style-type: none"> 1.2 Corporate Governance and Integrity Management 2.1 New Direction for Energy Transition 2.2 Reliable Green Electricity Expert 2.3 High Quality Customer Service
Employees	Employees as well as high-quality professional and technical teams are important to TCC.	<ul style="list-style-type: none"> Education and training ◆ Employee grievance procedure ◆ Various labor- management meetings ◆ Telephone and mail/email ◆ Announcement of the Company ◆ 	<ul style="list-style-type: none"> Labor relations and benefits Talent management and development Occupational safety and health Equality of human rights Economic performance 	There is adequate communication and feedback between TCC and its employees, as labor-management meetings are held on a quarterly basis. In 2023, no employee complaints (including human rights issues) were reported through formal grievance procedures.	<ul style="list-style-type: none"> Sustainable Development Vision and Strategy for Sustainable Development 1.1 About TCC 1.2 Corporate Governance and Integrity Management 2.2 Reliable Green Electricity Expert 4.1 Talent Management and Development 4.2 Human Rights Protection and Inclusion 4.3 Healthy Workplace
Suppliers/ Contractors/ Subcontractors	Suppliers have stable collaboration with TCC as we aim to benefit both sides.	<ul style="list-style-type: none"> Supplier audit activities ◆ Supplier discussion meeting ◆ Telephone and mail/email ◆ Integrity management related education and training ◆ 	<ul style="list-style-type: none"> Integrity management and legal compliance Corporate governance and sustainability strategy Economic performance Supply stability and reliability Supply chain management Technology R&D and innovation 	In 2023, the sign-off rate of the CSR Commitment for Suppliers reached 95%, and the sign-off rate of the CSR Commitment Self-Assessment Questionnaire reached 91.3%. In addition, field audits were conducted to improve suppliers' implementation and management of sustainability and ESG.	<ul style="list-style-type: none"> Sustainable Development Vision and Strategy for Sustainable Development 1.2 Corporate Governance and Integrity Management 2.3 High Quality Customer Service 4.3 Healthy Workplace

To uphold the spirit and principles of corporate sustainability, TCC values communication and engagement with each stakeholder. In addition to the aforementioned communication channels, the Company also maintains diverse communication channels on its official website, Facebook, YouTube, and other platforms. These channels are utilized to promptly address stakeholders' concerns and provide relevant information that stakeholders value.



The Company's intranet provides entry points to various systems, including the document management system, e-procurement system, knowledge management (KM) platform, human resources information system, and employee welfare committee website. These platforms are used to promptly announce regulations and publish the latest news, as the Group's Document management system



Double Materiality Analysis

Referring to the principle of Double Materiality outlined by the European Commission in the "Guidelines on Non-financial Reporting: Supplement on Reporting Climate-related Information", it is recommended that companies consider not only the external sustainability impacts of their operations but also analyze the financial impacts of external environmental factors on the company. Accordingly, in 2023, TCC conducted internal and external surveys and confirmed with senior management to execute a four-step process for assessing "Impact Materiality" and "Financial Materiality".

Double Materiality Analysis Process

Step 1: Identification of Stakeholders

Stakeholders were defined as "internal and external groups or individuals who have an impact on or are affected by the Company", as TCC identified five groups of stakeholders, including government agencies, shareholders, customers/electricity users, employees, and suppliers/contractors/subcontractors.

Step 2: Comprehend Sustainability Topics

To focus on the sustainability topics related to the operation of TCC, we took references from GRI Standards, industry-related material topics issued by the Sustainability Accounting Standards Board (SASB), the characteristics of TCC's business, as well as concerning topics chosen by peers at home and abroad. In the end, 22 sustainability topics for TCC were identified.

Step 3-1: Impact Materiality Assessment

Reviews and adjustments were carried out based on major global sustainability trends, material topics of benchmarking peers, business characteristics of TCC, and important news events. Questionnaires were distributed to internal and external stakeholders to understand their level of concern on sustainability issues. Furthermore, a different questionnaire was also distributed to internal senior management to assess positive and negative impact of these sustainability topics on the economy, the environment, and the society. Subsequently, a materiality matrix was generated. The 10 key material topics identified from this analysis were reviewed by the ESG Sustainability Committee and approved by senior management.

Step 3-2: Financial Materiality Assessment

In response to the Financial Supervisory Commission's future alignment with the International Financial Reporting Standards (IFRS) S1 requirements for sustainability-related financial disclosures, TCC conducted its first financial materiality assessment in 2023. According to the 22 sustainability topics identified in Step 2, the assessment compared these topics with industry material topics published by the Sustainability Accounting Standards Board (SASB), analyzing the financial risks and opportunities associated with the corresponding sustainability topics and indicators.

Step 4-1: Summarize Considerations and Communication

In response to the material topics, the key points of communication between TCC and stakeholders were summarized and explained in the corresponding sections of this Report.

Step 4-2: Gradually Improving Financial Impact Assessment

TCC conducted its first financial materiality assessment, using qualitative analysis to identify the financial risks and opportunities of sustainability topics. In the future, the Company will gradually establish methodologies for the quantitative analysis of financial impacts to comply with the Financial Supervisory Commission's alignment with IFRS S1 disclosure requirements.

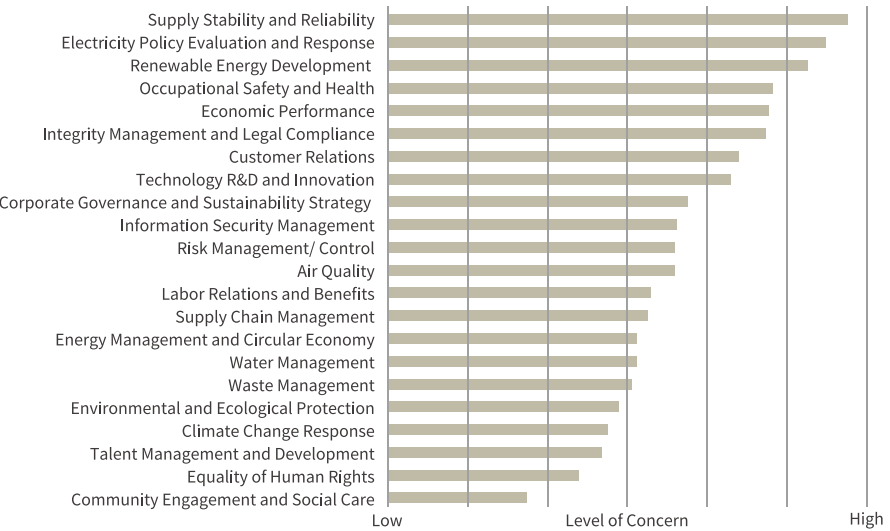
Impact Materiality Assessment

Based on GRI Standards and GRI Electric Utilities Sector Disclosures, with references to international sustainable development trends concerned by peer groups at home and abroad, TCC integrated three major ESG dimensions: environmental protection, human rights protection & social participation, and corporate governance, to identify 22 sustainability topics related to the Company's operations.

Operation and Governance	Economic Topics	Environmental Topics	Social Topics	Labor Topics	Product Liability Topics
Corporate Governance and Sustainability Strategy	Electricity Policy Evaluation and Response	Energy Management and Circular Economy	Equality of Human Rights	Occupational Safety and Health	Supply Stability and Reliability
Risk Management/Control	Economic Performance	Climate Change Response	Community Engagement and Social Care	Talent Management and Development	Technology R&D and Innovation
Integrity Management and Legal Compliance	Renewable Energy Development	Environmental and Ecological Protection		Labor Relations and Benefits	Customer Relations
Information Security Management	Supply Chain Management	Air Quality			
		Water Management			
		Waste Management			

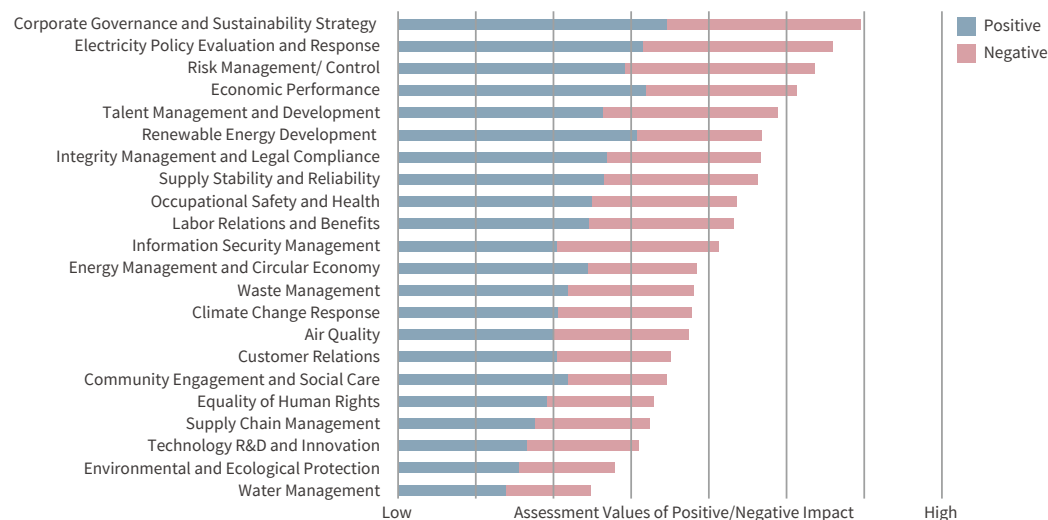
Level of Concern from Stakeholders

1. Data Collection: To understand the level of concern from internal and external stakeholders on the 22 sustainability topics, TCC distributed 76 questionnaires to employees and senior management of various units, and 110 questionnaires to customers/electricity and steam users, suppliers/contractors/subcontractors, government agencies and shareholders, with a total of 186 completed questionnaires collected.
2. Weight Calculation: Each unit of the Company evaluated the impact of five categories of stakeholders (employees, government agencies, shareholders, customers, and suppliers/contractors/subcontractors) on the overall operations of TCC, calculating the weight (in percentage) for each stakeholder group.
3. Ranking of Level of Concern: By compiling the level of concern of various stakeholders and the weight calculation results, the sustainability topics were ranked according to the level of concern, resulting in the Y-axis of the materiality analysis matrix.



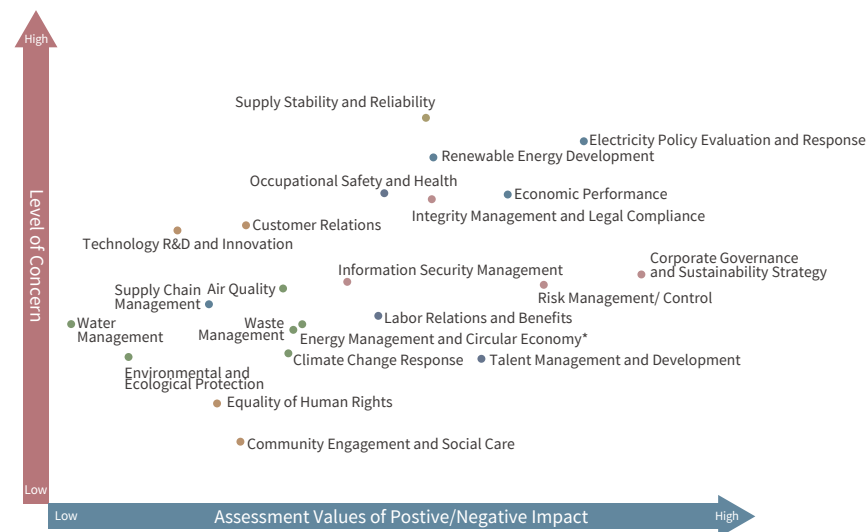
Sustainability Impact Assessment

To evaluate the impact of TCC on the economy, the environment, and people (or society, including their human rights), 16 impact assessment questionnaires were distributed to mid-to-senior managers across various units in the Company. These managers assessed the positive and negative impact and the likelihood of occurrence for 22 sustainability topics. The topics were then ranked based on the impact assessment values, resulting in the X-axis of the materiality analysis matrix.



Results of Material Topics Analysis

Combining stakeholders' level of concern and sustainability impact assessments, a materiality matrix was produced. After discussions by the ESG Sustainability Committee, 10 material topics were identified as the basis for the information disclosed in this Report. The results of the materiality analysis were also submitted to the Board of Directors. In addition to the 10 material topics, TCC voluntarily disclosed the sustainability performance and actions of non-material topics, such as air pollution prevention and customer relations, to address stakeholder concerns and important sustainability trends. TCC continuously sets management guidelines for each material topic, regularly tracks and reviews implementation outcomes and effectiveness, and discloses the setting and implementation results of various management indicators in corresponding sections. This information serves as a reference for internal and external stakeholders and a cornerstone for the Company's sustainable development.



Note: "Energy Management and Circular Economy" is included as a material topic to fully encompass the three ESG dimensions.

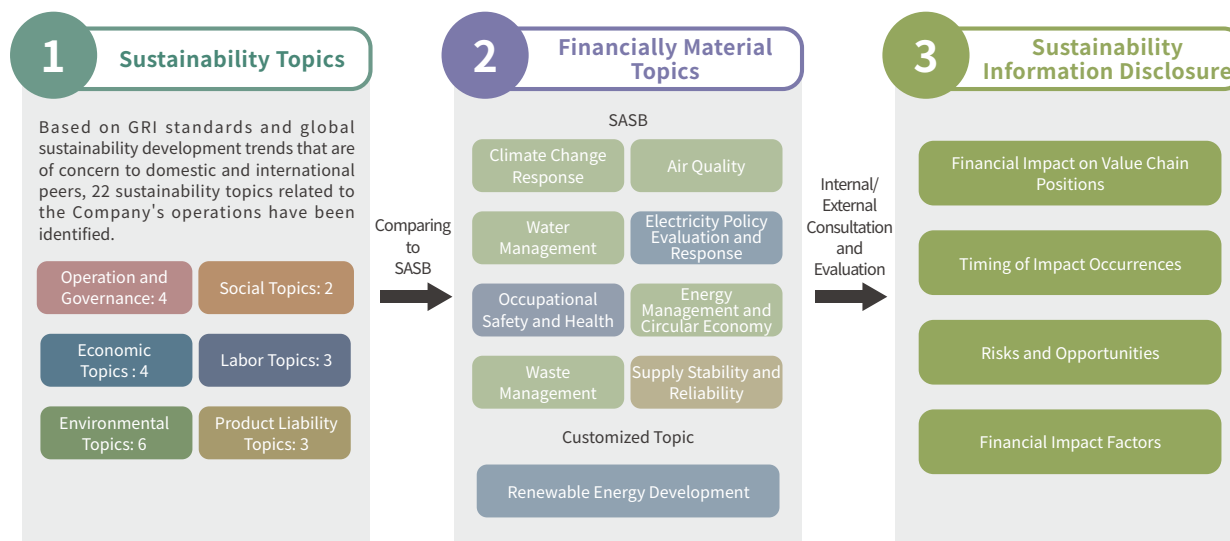
Material Topics for 2023	
1	Electricity Policy Evaluation and Response
2	Corporate Governance and Sustainability Strategy
3	Economic Performance
4	Risk Management/Control
5	Supply Stability and Reliability
6	Renewable Energy Development
7	Integrity Management and Legal Compliance
8	Occupational Safety and Health
9	Talent Management and Development
10	Energy Management and Circular Economy

Financial Materiality Assessment

To enhance the comparability and quality of sustainability information, the International Financial Reporting Standards (IFRS) Foundation announced the establishment of the International Sustainability Standards Board (ISSB) in 2021 and released the IFRS S1 and S2 sustainability reporting standards. In alignment with international trends in sustainability information disclosure, Taiwan's Financial Supervisory Commission (FSC) announced the full adoption of the IFRS sustainability disclosure standards in "Taiwan's Roadmap to Link with the IFRS Sustainability Disclosure Standards" released on August 17, 2023, designating 2026 as the inaugural year for sustainability reporting.

To gradually implement the IFRS S1 disclosure standards, TCC referenced the S1 framework and conducted its first financial materiality analysis in advance in 2023. In the first year, a qualitative approach was used to analyze the financial impact of various topics on the Company's value chain positions, the timing of impact occurrences, potential financial risks and opportunities, as well as financial impact factors.

The evaluation process and method were as follows: The 22 sustainability topics related to the Company's operations that were identified by the sustainability impact materiality assessment served as the basis and were compared with the indicators in the SASB Electric Utilities & Power Generators standards. This further filtered out 8 sustainability topics with financial materiality. Additionally, considering the management insights of TCC's senior executives, and in line with TCC's business model, "Renewable Energy Development" was included as a financially material topic. Therefore, a total of 9 topics were classified as financially material topics for TCC.



Risks and Opportunities of Financially Material Topics

Financially Material Topics	Corresponding SASB Code	Priority Impacted Value Chain Areas	External Driving Factors	Occurrence Period	Impacts and Dependencies of Risks	Impacts and Dependencies of Opportunities	Financial Impact Factors
Climate Change Response	IF-EU-110a.1 IF-EU-110a.2 IF-EU-110a.3	Production and Operations (Capital Maintenance and Investment)	Greenhouse Gas Emissions The World Bank Group, to implement climate action and support global energy transition, is taking concrete measures such as ceasing investments in coal-fired power plants and encouraging power plant employees to transition to jobs in the clean energy industry. The financial industry is also withdrawing from project financing for coal-fired power plants and redirecting funds toward clean energy technologies. Since the "Green Finance Action Plan 2.0", Taiwan's Financial Supervisory Commission (FSC) has been promoting policy-based preferential loans related to green energy and carbon reduction, targeting sectors including the renewable energy and green electricity industries.	Short term (2024-2025)	If TCC does not follow the net-zero trend and implement energy transition, it may face financing difficulties, increasing the difficulty and cost of obtaining funds for future expansions or new plant construction.	If TCC utilizes green energy-related project financing and preferential loans, it will be able to obtain funding at lower interest rates and use it for capital investments in renewable energy. This will continuously strengthen and expand TCC's operational capacity, also promoting the development of renewable energy in Taiwan.	Capital and Financing Expenditures
		Market Sales	Greenhouse Gas Emissions Energy transition and the decarbonization of power systems have become trends and core elements in the development of the energy industry. For this reason, the Energy Administration of the Ministry of Economic Affairs plans to prioritize the replacement of coal with natural gas by 2030 and continue the expansion of solar photovoltaic and wind power. By 2050, the goal is to maximize the deployment of renewable energy and construct a national zero-carbon energy system through gas-fired units combined with carbon capture, utilization, and storage (CCUS) technology. Moreover, in response to the global trend toward low-carbon supply chains, many companies have started increasing their use of renewable energy and joining initiatives such as RE100, aiming to use 100% green electricity by 2050.	Long term (2031-2050)	As governments and customers worldwide impose increasingly strict regulations on greenhouse gas emissions, transition of coal-fired power plants will become inevitable; otherwise, they will struggle to meet market demands, which could negatively impact company revenue.	TCC is investing in the development of low-carbon technologies, such as using scrap tires and SRF as alternative fuels and planning to co-fire with natural gas to reduce carbon emissions. The goal is to achieve a net-zero transition for supplying steam and electricity by 2050. This will enable the Company to meet market demands for a stable, zero-carbon energy supply, potentially strengthening or even increasing its pricing power for steam and electricity sales, which could enhance the Company's revenue.	Revenue / Expenditure
Renewable Energy Development	Custom Financially Material Topic	Market Sales	Power Generation from Renewable Energy According to the Ministry of Economic Affairs' plan, by 2030, the national energy mix should achieve a target of 30% renewable energy, 20% coal, and 50% natural gas. The aim is to accelerate the deployment rate of renewable energy before 2030 while promoting the increase of natural gas usage and the reduction of coal. The Ministry of Economic Affairs indicates that by 2030, the domestic demand for renewable energy will significantly increase, with the total demand estimated to reach 31,800 GWh.	Medium term (2026-2030)	If TCC does not increase its renewable energy generation, it may lose opportunities in the green electricity market and the associated green electricity sales revenue.	TCC continues to increase its renewable energy generation, selling green electricity to Taipower or directly to corporate users according to the government-announced feed-in tariff rates for renewable energy. Additionally, TCC actively engages in related businesses such as investment and development, engineering contracting, and O&M of renewable energy facilities. These efforts create new opportunities in the green economy, increase the Company's green electricity sales revenue, and achieve a win-win situation of revenue growth and environmental sustainability.	Revenue

Financially Material Topics	Corresponding SASB Code	Priority Impacted Value Chain Areas	External Driving Factors	Occurrence Period	Impacts and Dependencies of Risks	Impacts and Dependencies of Opportunities	Financial Impact Factors
Air Quality	IF-EU-120a.1	Production and Operations	Air Pollutant Emissions To control the main air pollutants released by coal-fired power plants, including nitrogen oxides (NOx), sulfur oxides (SOx), and particulate matter (PM), the Taiwanese government has been collecting air pollution fees for many years. The government is also trending toward progressively stricter air pollutant emission standards and fee collection methods. In Q4 2023, regulatory authorities increased the air pollution fee rates and introduced new tiers for major air pollution emitters.	Medium term (2026–2030)	If TCC does not continuously improve air pollution management to reduce emissions, the increasing stringency of regulations will likely result in higher air pollution fees in the future.	TCC reduces air pollutant emissions by adopting the best available control technologies, controlling emissions to within the lower air pollution fee rate brackets, and minimizing air pollution fee expenditures. This approach also fulfills corporate social responsibility by maintaining regional air quality.	Expenditure
Water Management	IF-EU-140a.1 IF-EU-140a.2 IF-EU-140a.3	Raw Material Management	Water Resource Scarcity According to the TCCIP analysis, under the most severe warming scenario (SSP5-8.5), Taiwan will face increasing disparities in precipitation between the wet and dry seasons from the mid to late 21st century. Precipitation during the wet season could increase by approximately 15–30% compared to the base period, whereas precipitation during the dry season could decrease by about 15%. This highlights a future trend of drier dry seasons and wetter wet seasons in Taiwan. Additionally, the SSP5-8.5 scenario indicates a long-term trend of shorter rainy seasons and longer dry seasons.	Long term (2031–2050)	Water resources are essential for the steam turbine units used in the power generation process at TCC's Guan Tian Plant. If future drought seasons result in water restrictions, the Guan Tian Plant will implement measures such as reducing boiler load operations, stopping the sale of excess electricity to Taipower, ceasing the supply of process steam, and considering plant shutdowns. These actions could lead to a decrease in operating revenue.	By reclaiming condensate from customer processes to increase water recovery rates and reducing tap water and raw water consumption to lower water procurement costs, the Company can enhance the Guan Tian Plant's resilience in the face of water resource scarcity, minimize additional operational costs arising from water scarcity response measures, and reduce the risk of revenue loss due to boiler load reductions or shutdowns.	Revenue / Expenditure
Electricity Policy Evaluation and Response	IF-EU-240a.4	Market Sales	Energy Transition Plan According to "Taiwan's Pathway to Net-Zero Emissions in 2050" announced by the National Development Council, electrification of fossil fuel equipment and carbon capture, utilization, and storage (CCUS) are key strategies for the nation to achieve net-zero emissions by 2050. The Climate Change Response Act also explicitly mandates that the nation must reach net-zero greenhouse gas emissions by 2050, indicating that low-carbon transition and a zero-carbon economy are the core of future development.	Long term (2031–2050)	If TCC's Guan Tian Plant continues to use coal as its primary energy source, it may face the risk of revenue decline in the future due to market preferences shifting toward lower carbon emissions, resulting in reduced demand for high-carbon steam and electricity. Consequently, TCC will have to significantly increase its operating expenditures (OPEX) and capital expenditures (CAPEX) to accelerate investment and development of low-carbon technologies.	If TCC's Guan Tian Plant successfully transitions from coal to natural gas before 2030, and achieves net-zero emissions by 2050 through hydrogen co-firing and CCUS, the Company could gain an advantage over its competitors. This would likely increase trust among corporate customers, expand the Company's steam and electricity sales revenue, and contribute to the national energy transition goals.	Revenue

Financially Material Topics	Corresponding SASB Code	Priority Impacted Value Chain Areas	External Driving Factors	Occurrence Period	Impacts and Dependencies of Risks	Impacts and Dependencies of Opportunities	Financial Impact Factors
Occupational Safety and Health	IF-EU-320a.1	Production and Operations	Workplace Safety Incidents Since the Labor Safety and Health Act was amended to become the Occupational Safety and Health Act in 2013, occupational hazard risk management has become a core management issue for companies in the energy and manufacturing industries.	Short term (2024–2025)	An increase in the incidence of recordable occupational injuries, employee fatalities, and other workplace safety incidents could lead to the Company having to pay substantial fines to regulatory authorities, as well as compensation and medical expenses for employees.	Enhancing occupational safety, health management and workplace safety resilience reduces the incidence of workplace safety incidents, thereby lowering the likelihood of paying fines and insurance. This approach fulfills TCC's policy of "Respect for Life, Work Safety First, and Care for Health and the Environment", protecting the interests of both internal and external stakeholders.	Expenditure
Energy Management and Circular Economy	IF-EU-150a.1 IF-EU-150a.3 IF-EU-420a.3	Raw Material Management	Alternative Fuel Supply The Ministry of Environment has released a key strategic action plan in response to "Resource Recycling and Zero Waste", one of the 12 key strategies for supporting "Taiwan's Pathway to Net-Zero Emissions in 2050" announced by the National Development Council. This plan aims to increase the fuel conversion rate of industrial waste from 47% in 2020 to 80% by 2030, indicating that converting industrial waste into Solid Recovered Fuel (SRF) has become an industry trend. According to the Ministry of Environment, one metric ton of SRF can replace approximately 0.86 metric tons of coal and reduce carbon dioxide emissions by 0.77 metric tons.	Short term (2024–2025)	To maximize resource utilization and achieve transformation to circular economy, TCC has chosen to use scrap tires and Solid Recovered Fuel (SRF) as alternatives to coal. However, Taiwan currently lacks large-scale SRF plants (with an annual processing capacity of over 100,000 metric tons). Additionally, the demand for scrap tires and SRF has been rising annually due to an increase in users, leading to a supply shortage in the market. As a result, TCC is unable to procure sufficient alternative fuels and still needs to rely on coal to meet its energy needs.	With the gradual expansion of the supply of alternative fuels such as SRF in Taiwan, the future market supply is expected to become sufficient and stable. Under the premise of achieving zero waste in resource recycling and complying with air pollution prevention regulations, TCC is actively promoting a circular economy transformation. By using alternative fuels like SRF and scrap tires to reduce coal consumption, TCC aims to enhance its resilience to coal price fluctuations and reduce coal procurement expenditures.	Expenditure
Waste Management		Production and Operations	Waste Disposal Costs The residual ash from co-firing coal with scrap tires turns darker due to the carbon black in the scrap tires. According to the Industrial Development Administration of the Ministry of Economic Affairs, if this ash is not processed by partner recycling operators, it must be handled by a qualified level-B waste disposal facility.	Short term (2024–2025)	To improve the efficiency of reusing resources, TCC is reducing coal consumption by increasing the percentage of SRF and scrap tires in its fuel mix. However, compared to burning coal alone, co-firing SRF and scrap tires will result in relatively higher waste disposal costs for TCC.	TCC collaborates with partner companies to apply for the case-by-case reuse of coal ash, jointly developing and producing Controlled Low Strength Material (CLSM) for backfill. This not only saves on high waste disposal costs but also actively contributes to achieving the goal of resource recycling.	Expenditure

Financially Material Topics	Corresponding SASB Code	Priority Impacted Value Chain Areas	External Driving Factors	Occurrence Period	Impacts and Dependencies of Risks	Impacts and Dependencies of Opportunities	Financial Impact Factors
Supply Stability and Reliability	IF-EU-550a.2	Service	<p>Electricity and Steam Supply</p> <p>To strengthen the stability of the national energy supply, the Energy Administration of the Ministry of Economic Affairs is actively coordinating with cogeneration operators to increase electricity generation during peak demand periods and accelerate the installation of new units to maintain stable electricity supply.</p>	Short term (2024–2025)	<p>Power outages caused by tripping or malfunction incidents reduce the amount of electricity available for sale, thereby impacting electricity sales revenue.</p> <p>Steam supply interruptions caused by tripping or malfunction incidents affect supply stability. To mitigate the risk of process interruptions, downstream steam users may alter their procurement contracts or reduce their procurement volume, leading to a decrease in steam sales revenue.</p>	<p>Regular equipment maintenance is carried out to provide a stable supply of electricity and steam, ensuring service quality and earning long-term customer trust. This also helps maintain revenue and profitability from electricity and steam sales.</p>	Revenue



Material Topics and Boundaries

Material topic boundaries describe each topic and its corresponding scope of impact. TCC mainly analyzes the content and major targets related to material topics through internal/external stakeholder concern questionnaires and sustainability impact assessments. These data have been confirmed by the ESG Sustainability Committee.

Material Topics	Topics Corresponding to GRI Standards	Internal Impact			External Impact				Topic Explanation	Major Impact	Response of TCC
		TCC Group	Invested Power Plants	Employees	Shareholders	Customers	Suppliers/Contractors	Government Agencies			
Electricity Policy Evaluation and Response	Customized Topic	V	V			V		V	TCC's impact assessment and corresponding measures on the impact of domestic electricity policies such as energy transition, carbon emission factor restrictions, renewable energy targets, the reasonability of feed-in tariff, etc.	Response to the government's electricity policy will directly affect the operation direction and performance of TCC and its invested power plants, creating impact as the policy gets implemented. Additionally, the energy sources for TCC's power and steam supply, along with the volume of renewable energy sales, will directly influence the indirect emissions of customers.	2.1 New Direction for Energy Transition
Corporate Governance and Sustainability Strategy	General Disclosures	V	V	V	V		V	V	TCC's medium- and long-term sustainable development strategy, innovative business model, information transparency, governance structure, economic performance, environmental/social practices, as well as specific measures and actions for implementing corporate sustainable development.	Corporate governance and sustainability strategies will impact the medium- and long-term operation management of TCC Group and the invested power plants, affecting the rights and interests of shareholders and employees. For customers and suppliers, there will be indirect impacts through business relationships, such as increasing the sustainability requirements of suppliers and reducing the energy carbon intensity of customers. In addition, they will also affect the implementation of regulations and governmental policies indirectly.	Sustainable Development Vision and Strategy for Sustainable Development 1.2 Corporate Governance and Integrity Management
Economic Performance	Economic Performance	V	V	V	V			V	The impact of TCC's operating performance, such as investment profit/loss, financial information, operating costs, market development, and the electricity purchasing/retailing prices on the operation of the Company.	The economic performance will directly affect the operation strategies of TCC and its invested power plants, which will in turn affect the rights and interests of shareholders and employees. Robust operational performance may lead to more employment opportunities, and a strong financial position will enable TCC to invest more resources in renewable energy development and energy transition, supporting the national net-zero targets and green energy development.	1.1.2 Economic Performance

Material Topics	Topics Corresponding to GRI Standards	Internal Impact			External Impact				Topic Explanation	Major Impact	Response of TCC
		TCC Group	Invested Power Plants	Employees	Shareholders	Customers	Suppliers/Contractors	Government Agencies			
Risk Management/Control	General Disclosures	V	V						The ability of TCC to identify and manage risks that may be encountered during operations, including the assessment and management mechanisms of business development, as well as operational risk identification, prevention, control, and crisis management.	The effectiveness of risk control and management will not only affect the operation of TCC and the invested power plants directly, but also affect the rights and interests of shareholders. On the other hand, it will also cause certain degree of indirect impact on customer energy supply and government energy policies.	1.3 Risk Management
Supply Stability and Reliability	Customized Topic	V	V		V	V	V	V	Measures of improvement and control mechanisms implemented by TCC to ensure service quality, power supply stability, power generation efficiency improvement, or safety of construction/power supply.	The stability and reliability of energy supply will not only affect the operational performance of TCC and its invested power plants, but also affect the energy use of customers, which in turn will affect the domestic energy structure and related policies.	2.3 High Quality Customer Service
Renewable Energy Development	Customized Topic	V			V	V		V	In response to international energy development trends and national energy policies, TCC has proactively engaged in the investment, constructions and technical services related to renewable energy.	The development of renewable energy will change the impact on the environment and the goals of policy implementation. Moreover, the Company's business development focus will be altered, which will affect shareholders' rights and interests. TCC can help customers reduce their indirect emissions through supplying renewable energy, thereby supporting the national net-zero transition policy. However, renewable energy projects may disrupt the existing ecosystems, biodiversity, or cultural landscapes of the developing areas.	2.1 New Direction for Energy Transition 2.2 Reliable Green Electricity Expert
Integrity Management and Legal Compliance	Socioeconomic Compliance	V	V	V	V	V	V	V	The practices and awareness campaigns conducted by TCC for legal compliance, integrity management, prevention of insider trading, as well as the involvement in associations, policies, and domestic/international initiatives.	Integrity management and legal compliance are core principles of corporate governance. Establishing a robust integrity management mechanism can enhance TCC's operational resilience and reduce the risk of regulatory penalties, thereby protecting the interests of internal and external stakeholders. Failure to comply with legal norms and the principles of business integrity will lead to lawsuits or government penalties that affect the Company's reputation or the suspension of its operations, impacting both internal and external stakeholders.	1.2 Corporate Governance and Integrity Management

Material Topics	Topics Corresponding to GRI Standards	Internal Impact			External Impact				Topic Explanation	Major Impact	Response of TCC
		TCC Group	Invested Power Plants	Employees	Shareholders	Customers	Suppliers/ Contractors	Government Agencies			
Occupational Safety and Health	Occupational Safety and Health	V	V	V			V		TCC's measures and policies on occupational safety and health management include workplace safety protection, construction and operation safety, occupational accident risk management, employee health management plans and health inspections.	The health and safety of employees will affect their ability to maintain normal services at TCC and its invested power plants. The implementation of appropriate systems and measures can reduce the impact of hazardous work on the safety and health of employees and contractors. This ensures labor rights, provides a safe and sanitary work environment, and avoids additional financial expenditures such as compensation for workplace accidents and governmental penalties.	4.3 Healthy Workplace
Talent Management and Development	Training and Education	V	V	V					TCC's management mechanisms such as talent recruitment, cultivation, and performance evaluation assist employees in their career development, as well as the passing on of the organization's experience.	Design training courses for employees and supervisors will improve the work efficiency and core technology management of individuals and departments within the Company, thereby affecting the overall operational performance of the Company.	4.1 Talent Management and Development
Energy Management and Circular Economy	Emissions	V	V		V			V	In order to mitigate the impact of climate change, TCC continues to improve unit efficiency, renew environmental protection equipment, recycle energy/ resources, and implement energy-saving and carbon-reduction plans as well as a circular economy production model.	Carbon emissions and the use of energy/ resources are closely related to climate change. Moreover, government policies and regulations are influenced by global trends. TCC reduces coal consumption by burning scrap tires and Solid Recovered Fuel (SRF), continually improving unit operational efficiency to help customers reduce their greenhouse gas emissions.	3.1 Climate Change and Energy Management 3.2.1 Circular Economy of Waste Resources



Achievements of Material Topics in 2023

Material Topics	2023 Goals/Important Milestones	Achievements		Corresponding Section
Economic Performance	1. 191 GWh of Renewable energy retailing	X	Due to adverse water and wind conditions caused by climate change, renewable energy retailing in 2023 amounted to 137 GWh	2.2 Reliable Green Electricity Expert
	2. Expand ancillary service trading by incorporating external sites or energy storage system resources	△	Continued to seek external resources to participate in ancillary service related to the Energy Trading Platform (ETP)	
	3. Secure EPC projects and O&M work for large-scale offshore wind power, onshore wind power, solar photovoltaic power, and booster stations	✓		
Supply Stability and Reliability	1. Operational reliability should be $\geq 98.09\%$	X	Operational reliability for the entire year was 96.07%	2.3 High Quality Customer Service
Renewable Energy Development	1. Obtain approval for the establishment of a 31.8 MW fishery and electricity symbiosis electricity enterprise and apply for construction permission	△	Continued to administer related procedures according to the review feedback of local authorities and execute the application process for electricity enterprise establishment and subsequent construction permits after obtaining approval	2.2 Reliable Green Electricity Expert
	2. Secure the contract for the Wushantou Reservoir Floating Solar Photovoltaic Power Phase II project	✓		
	3. Acquire lease agreements for approximately 20 MW of solar photovoltaic power projects	X	Actively engaged in and evaluated the investment benefits of various types of solar photovoltaic power projects, including rooftop, ground-mounted, floating, agrivoltaics, fishery and electricity symbiosis, and solar plus storage projects. Participated in bidding for leases of government and state-owned enterprise lands and building rooftops	
	4. Obtain the construction permit for 42 MW onshore wind power installations	△	Revised the content of project application based on feasibility assessments then obtained the construction permit for 37.8 MW onshore wind power installations	
	5. Complete the 180 MW Qigu solar photovoltaic joint booster station in Tainan and the EPC work for the 12 MW indoor fishery and electricity symbiosis projects in Kaohsiung/ Yunlin	△	Completed the Qigu solar photovoltaic joint booster station, which integrated 120 MW into the system in 2023. The Yunlin indoor fishery and electricity symbiosis EPC project was completed as well, with the integration of Type 3 solar facility (4.6 MW) into the system	
Corporate Governance and Sustainability Strategy	1. Strengthen the competencies of the Board of Directors and functional committees, and improve the Company's systems and regulations	✓		Vision and Strategy for Sustainable Development
	2. Continue to improve corporate governance and aim to rank in the top 5% of the corporate governance evaluation	X	Ranked among the top 6–20% of listed companies in the corporate governance evaluation	Sustainable Development 1.2 Corporate Governance and Integrity Management

Material Topics	2023 Goals/Important Milestones		Achievements	Corresponding Section
Occupational Safety and Health	1. Complete the renewal of ISO 45001:2018 management system certification	✓		4.3 Healthy Workplace
	2. Complete more than five major environmental, safety, and health improvements and optimizations at the Guan Tian Plant	✓		
	3. Establish and implement disaster risk reduction management	✓		
	4. Star Energy has no major occupational safety violation and environmental protection violation resulting in a single fine of more than NT\$50,000	X	In 2023, there was one incident of a fine for violating the Air Pollution Control Act and one incident of a fine for violating the Occupational Safety and Health Act. Subsequently, review meetings were held to develop corrective action plans	
	5. Implement general occupational safety and health education and training for new and current employees	✓		
	6. Ensure the safety of the work environment and equipment	✓		
	7. Conduct worker health examination regularly	✓		
Technology R&D and Innovation	1. Improve the efficiency of power generation by 10% when compared to the average annual total power generation of rooftop solar photovoltaic projects over the past 3 years	X	In 2023, the total power generation decreased by 1.04% compared to the average annual total power generation from 2020 to 2022	2.2 Reliable Green Electricity Expert 3.2.3 Air Pollution Prevention and Control
	2. Review and finalize improvement plans with the original boiler design manufacturer, therefore determine the implementation method	✓		
Electricity Policy Evaluation and Response	1. Formulate future business strategy for the next 5 years, and review implementation strategy on a rolling basis in accordance with the electricity policy	✓		2.1 New Direction for Energy Transition
	2. Complete the energy policy tracking and analysis report	✓		
Talent Management and Development	1. Promote the English proficiency enhancement program, including conversational courses, for a minimum of 150 training hours; additionally, provide 6 months of Business English training courses for managers	✓		4.1 Talent Management and Development
	2. Continuously implement the new employee care program	✓		
	3. Regularly convene the Talent Cultivation and Development Advisory Committee	✓		
	4. Middle and senior management training program: average training hours per manager (team leader level and above) reach 23 hours or more	✓		
	5. Average training hours per employee reach 26 hours or more	✓		
	6. Continuously promote job rotation for employees	✓		

Material Topics	2023 Goals/Important Milestones	Achievements		Corresponding Section
Integrity Management and Legal Compliance	1. Complete the report on the Company's Ethical Corporate Management Principles to the Board of Directors before the end of March	✓		1.2 Corporate Governance and Integrity Management
	2. Organize at least 2 sessions of education and training to promote integrity management, and continue to promote business integrity	✓		
	3. Organize 1 session of legal-related education and training for employees	✓		
Risk Management/Control	1. Complete the risk management plan, incorporating climate change-related risks and opportunities into the analysis	✓		1.3 Risk Management
	2. Implement internal control systems to manage corporate risks more effectively	✓		3.1 Climate Change and Energy Management
Energy Management and Circular Economy	1. Achieve a fuel substitution rate (SRF and scrap tires) of $\geq 30\%$	X	Fuel substitution rate for 2023 was 25.74%.	3.1 Climate Change and Energy Management
	2. Complete the internal greenhouse gas inventory mechanism	✓		3.2.1 Circular Economy of Waste Resources
	3. Continue to collaborate with suppliers to apply for joint reuse and recycle all the coal ash	✓		



Material Topics Management Approach

To effectively manage the material topics of TCC, meet the expectations of stakeholders, and reduce potential negative impacts on the environment, people, and the economy, the management policies for material topics are summarized in the following table:

 SASB Code
 GRI Standard
 Y Annually
 Q Quarterly
 M Monthly
 W Weekly
 D Daily

Material Topics	Policy	Commitment and Goals		Specific Actions and Achievements in 2023	Responsibilities and Resources	Evaluation and Management Mechanism
		Short-term Quantitative Indicators and Major Milestones for 2024	Medium- and Long-term Commitment and Goals			
Electricity Policy Evaluation and Response IF-EU-240a.4	In response to the global carbon reduction trend and domestic policies of increasing natural gas, reducing coal-fired, and promoting green energy under the "2050 Net Zero Emissions", TCC has incorporated energy transition and net-zero transition into its business strategy.	1. Formulate the business strategy for the next 5 years, and review the implementation strategy on a rolling basis in accordance with the electricity policy. 2. Complete the energy policy tracking and analysis report.	1. Continuously monitor government energy policies and international energy development trends to formulate corporate operational strategies. Invest in natural gas power plants and expand investment, development, EPC, and O&M of renewable energy. 2. Expand diverse business models in the electricity market, including green electricity retailing and ancillary services.	1. Completed the business strategy for the next 5 years, the energy policy tracking and analysis report, and the power market ancillary services analysis report based on domestic energy goals and analyze international energy trends. 2. Actively responded to government energy policies by investing in the development of solar photovoltaic and wind power and promoting joint/shared booster stations. 3. Pursued renewable energy EPC projects, O&M, and renewable energy retailing business. Invested in the ancillary services market to expand emerging energy businesses.	<ul style="list-style-type: none"> Electricity policy evaluation and response strategy: Planning & Investment Management Dept. Development projects related to renewable energy and private gas-fired power plants in response to the energy transition: Project Development Dept., Engineering & Construction Dept., and Star Energy. 	1. Review future business strategies on a rolling basis, and formulate the implementation strategies in response to changes in electricity policies. Y 2. For the Company's various investment and development businesses as well the contracted projects, set the annual KPIs for the Company, which are reviewed and tracked by the responsible department and the organizing unit. M Q
Corporate Governance and Sustainability Strategy GRI 2-9 GRI 2-10 GRI 2-11 GRI 2-15 GRI 2-17 GRI 2-18	The Company conducts annual reviews on a rolling basis to formulate future business strategies, establish the ESG Sustainability Committee to continuously strengthen the competencies of the Board of Directors and functional committees, refine the Company's systems and regulations, improve information disclosure, and reduce operational risks to fulfill corporate sustainable development.	1. Strengthen the competencies of the Board of Directors and functional committees. 2. Improve the Company's systems and regulations in accordance with Corporate Governance 3.0 and evaluation criteria. 3. Rank in the top 5% in the corporate governance evaluation.	Fulfill integrity management and legal compliance, improve systems and regulations of the Company according to corporate governance evaluation guidelines, strengthen the functions of the Board of Directors and relationships of trust with stakeholders, enhance information transparency and accuracy, and commit to corporate social responsibility, striving to promote sustainable operations and development.	1. Conducted the 2023 annual performance evaluation of the Board of Directors and functional committees, and reported to the Board in March. In 2023, the attendance rate of the Board TCC was 86.54%, the attendance rate of members of the Remuneration Committee was 92.86%, and the attendance rates of members of both the Audit Committee and the Nominating Committee were 100%. 2. Held training courses for directors and committee members. The average training hours per director in 2023 was 9.96 hours. 3. Amended the "Articles of Incorporation", "Rules of Procedure for Shareholders' Meetings", and "Corporate Governance Principles", and completed the formulation, execution, and review of KPI.	<ul style="list-style-type: none"> Sustainable development strategy: ESG Sustainability Committee Coordinating the implementation of ESG-related work: Planning & Investment Management Dept. Formulation and review of future business strategies and annual KPIs: Planning & Investment Management Dept. Designated unit of corporate governance: Secretariat of the Board (Director of the Secretariat of the Board is the chief corporate governance officer) 	1. The head of each department reports the implementation of the Company's KPIs. M <ul style="list-style-type: none"> Report the implementation status of the Company's KPIs to the management. Q The implementation results are reviewed at the end of the year and linked with employee performance. Y 2. Provide reports on the progress of sustainable development initiatives. W M <ul style="list-style-type: none"> Report to the Board of Directors on the planning and execution of sustainable development initiatives. Y

Material Topics	Policy	Commitment and Goals		Specific Actions and Achievements in 2023	Responsibilities and Resources	Evaluation and Management Mechanism
		Short-term Quantitative Indicators and Major Milestones for 2024	Medium- and Long-term Commitment and Goals			
				4. Ranked among the top 6–20% of the 10th (2023) Corporate Governance Evaluation. 5. Convened the ESG Sustainability Committee meeting and reported the 2022 Sustainability Report structure and material topics analysis results to the Board in May; additionally, reported the sustainability development implementation status for 2023, and stakeholder communication frequency to the Board in December. 6. Awarded the "Top 100 Sustainability Exemplary Awards" and the "Sustainability Report Gold Award" of the Taiwan Corporate Sustainability Awards (TCSA). 7. Ranked 9th in the "2023 Excellence in Corporate Social Responsibility – Medium-sized Enterprise Category" of CommonWealth Magazine.		3. Formulate and review future business strategies annually, and report to the management as well as the Board of Directors. Y
Economic Performance GRI 201-1	Enhance the operational efficiency of power plants and engineering contracts, expand various power and energy investment and development projects, and actively monitor government energy policies. Invest in energy transition and renewable energy business development to maintain long-term consistent profitability.	1. Ensure an 85% bid success rate for existing ancillary services resources and review pricing strategies to enhance revenue. 2. Expand ancillary service trading business by incorporating external resources and business models for energy storage. 3. Secure EPC projects and O&M work for large-scale wind power, solar photovoltaic power, booster stations, and energy storage systems.	In response to the net-zero emissions trend, energy transition, and power market development, plan the Company's sustainable management direction and strategies for low/zero carbon, and carbon neutrality, while strengthening the related technical workforce.	1. Promoted renewable energy investment projects and assisted customers in achieving their renewable energy usage goals. 2. Negotiated with external resources to participate in the Energy Trading Platform (ETP), increasing the participation volume and variety of resources in ancillary services, aiming for a 100% bid success rate in the ancillary services market. 3. Completed the EPC projects of the onshore booster station for the Changhua offshore wind power, as well as the booster stations for solar photovoltaic power in Yunlin and Tainan. Continued to carry out O&M work for 116 onshore wind turbines and approximately 40 solar photovoltaic power projects.	<ul style="list-style-type: none"> • Main responsible department: Finance Dept. • Operation of the existing cogeneration plant: Guan Tian Plant. • Management of the invested power plants: Planning & Investment Management Dept. • Power plant development and investment; construction contracting: Project Development Dept., Engineering & Construction Dept., and Star Energy. 	1. Regularly track and review related business activities. W M Q 2. Review the implementation status of the Company's annual KPIs. Q 3. Regularly report on relevant operational performance to the Board of Directors.

Material Topics	Policy	Commitment and Goals		Specific Actions and Achievements in 2023	Responsibilities and Resources	Evaluation and Management Mechanism
		Short-term Quantitative Indicators and Major Milestones for 2024	Medium- and Long-term Commitment and Goals			
Risk Management/Control GRI 2-12	Establish risk management system to effectively reduce the occurrence of risks and minimize or avoid the impact of risks; shape the risk management culture by incorporating risk management into business strategy planning and daily business practices and promoting risk awareness for all employees.	1. Complete the risk management plan and incorporate climate change-related risks and opportunities into analysis consideration. 2. Implement internal control system to manage corporate risks more effectively.	1. Strengthen the internal control system and maintain the effectiveness of internal control. 2. Continuously improve the existing risk management system and framework in response to external environmental changes to effectively reduce operational management and climate change-related risks; complete the implementation of IFRS S1 and S2 standards.	1. Reviewed the implementation of risk management for the first half and the entire year of 2023, completed the 2023 risk map, and established and implemented related control measures. 2. Strengthened information security risk management by implementing various security enhancement measures. 3. Implemented self-assessment of internal control. There were no major internal control deficiencies in 2023.	• Risk management: Risk Management Committee (Planning & Investment Management Dept. as the promoting unit).	1. Annual risk management project is reviewed and tracked semi-annually. 2. In case of sudden increase of risk scenarios or sudden increase of risk events, relevant departments shall report and take control measures as needed, and submit them to the Risk Management Committee for deliberation when necessary.
Supply Stability and Reliability GRI 416-2 IF-EU-550a.2	Supply stable and reliable steam and electricity to customers with high-efficiency and low-polluting power generation methods.	1. Operational reliability of Guan Tian Plant $\geq 97.26\%$. 2. Secure the O&M contract for Taipower's large- solar photovoltaic power plant (Tainan Salt Field Solar PV Farm). 3. Pursue the O&M work for Ørsted's Greater Changhua 1&2a project onshore substation.	1. Achieve operational reliability of 100% and maintain a stable and reliable supply of steam and electricity to customers. 2. Maintain a high-quality working environment, ensuring no occurrence of equipment or personnel accidents. 3. Cooperate with the Group's Project Development Dept. to develop self-owned wind and solar photovoltaic power projects. 4. Pursue maintenance work for wind and solar photovoltaic power projects, as well as joint booster stations for renewable energy, integrating human and material resources to expand O&M business opportunities.	1. Effectively carried out annual maintenance operations and maintained open communication channels with customers. 2. Arranged monthly training and assessment for frontline operators. 3. Maintained the progress of the O&M project of Ørsted's Greater Changhua 1&2a project onshore substation. 4. Secured and conducted the 5-year O&M contract for Taipower's onshore wind farms. 5. Achieved operational reliability of 96.07% for the entire year of 2023; equipment failures leading to shutdowns were promptly repaired and preventive measures were implemented, with no operational errors leading to unexpected shutdowns. 6. The 2023 customer satisfaction survey had a score of 95.63.	• Operation of the cogeneration plant: Guan Tian Plant • Management of the invested power plants: Planning & Investment Management Dept. • Renewable energy project O&M: Star Energy	1. Guan Tian Plant: Check operation-related data. D • Monitor operational reliability. Q • Conduct customer satisfaction surveys. Y 2. Track the operational status of invested power plants. M

Material Topics	Policy	Commitment and Goals		Specific Actions and Achievements in 2023	Responsibilities and Resources	Evaluation and Management Mechanism
		Short-term Quantitative Indicators and Major Milestones for 2024	Medium- and Long-term Commitment and Goals			
Renewable Energy Development	In alignment with the government's "2050 Net-Zero Emissions" targets, we will focus on the development of solar photovoltaic and wind power, continue to invest in renewable energy development, undertake EPC projects, and engage in O&M work. We will also continue to develop renewable energy retailing and related power market businesses in response to trends such as RE100, large electricity consumers, and carbon fees.	<ol style="list-style-type: none"> 1. Obtain the construction permit for a 33.6 MW onshore wind power project. 2. Obtain permit for the establishment of a 45.95 MW solar photovoltaic power electricity enterprise and apply for construction permit. 3. Achieve renewable energy retailing of 192 GWh. 4. Receive approval from the Energy Administration for an additional 60 MW at the Qigu solar photovoltaic power joint booster station in Tainan, totaling 180 MW. 5. Obtain land use consent letter for the development of approximately 60 MW of solar photovoltaic power projects. 	In 2027, the cumulative installed capacity of renewable energy will reach more than 315 MW.	<ol style="list-style-type: none"> 1. Accelerated the application progress for solar photovoltaic power (including fishery and electricity symbiosis) and onshore wind power investment projects. Carefully evaluated and pursued new renewable energy investment projects. In 2023, obtained the approval for the establishment of the Phase II contract for the 13.2 MW Wushantou Reservoir floating solar photovoltaic power project and the 37.8 MW onshore wind power project. 2. Integrated internal and external resources to increase the retailing of green electricity. The accumulating sales of renewable energy reached 460 GWh. 3. In 2023, completed the 120 MW Qigu solar photovoltaic power joint booster station in Tainan and connected it to the grid. Additionally, obtained the EPC contracts for the onshore substation of an offshore wind power project in Changhua, the substation for a solar photovoltaic plant in Yunlin, and the waste-to-energy power generation equipment project in Hsinchu. 	<ul style="list-style-type: none"> • Renewable energy investment evaluation and development application: Project Development Dept. • Retailing of renewable energy: TCC Green Energy • Renewable energy project contracting: Star Energy 	<ol style="list-style-type: none"> 1. Establish project organization for significant investment and development projects. 2. Regularly convene project meetings to track the progress of various renewable energy projects. W M
Integrity Management and Legal Compliance GRI 2-23 GRI 2-26 GRI 2-27 GRI 206-1 GRI 415-1 GRI 416-2 GRI 417-2 GRI 418-1	The Company strictly abides by relevant laws and regulations. Based on the concept of integrity, transparency and responsibility, the Company requires its directors and employees to uphold ethics and integrity standards in all business activities, and implement a self-supervision mechanism.	<ol style="list-style-type: none"> 1. Complete the report on the Company's Ethical Corporate Management Principles to the Board of Directors before the end of March. 2. Organize at least two sessions of education and training on integrity management. 3. Organize one session of legal-related education and training for employees. 	Continue to improve and practice the integrity management supervision mechanism to ensure the effectiveness of the mechanism.	<ol style="list-style-type: none"> 1. The implementation status of the Ethical Corporate Management Principles for the previous year was reported to the Board of Directors in March 2023, and Board approval was obtained for the specific actions undertaken to fulfill the Company's integrity management. 2. During the monthly reporting of equity changes by insiders, reminded directors and supervisors of the important regulations outlined in the Legal Compliance Handbook for Insiders. 3. Conducted two sessions of education and training on preventing insider trading and integrity management. 4. Conducted one session of legal-related education and training. 5. All departments completed the 2023 internal control self-assessment, which was reviewed by the Audit Office. 	<ul style="list-style-type: none"> • Dedicated unit for supervising the integrity management of the Company: Legal Affairs Office • Consulting services on laws and regulations: Legal Affairs Office • Organizing integrity management related education and training: Secretariat of the Board • Internal audit: Internal Audit Office (Internal control self-assessment is conducted by each department and reviewed by the Internal Audit Office.) 	<ol style="list-style-type: none"> 1. Report to the Board of Directors on the implementation of integrity management and the results. Y 2. Conduct education and training or awareness campaign on integrity management to directors, managers and employees. Y 3. Carry out internal control self-assessment and regular audit plan and conduct irregular audits on an ad hoc basis. Y 4. During the reporting of equity changes by insiders, remind directors and supervisors of the important regulations outlined in the Legal Compliance Handbook for Insiders. M

Material Topics	Policy	Commitment and Goals		Specific Actions and Achievements in 2023	Responsibilities and Resources	Evaluation and Management Mechanism
		Short-term Quantitative Indicators and Major Milestones for 2024	Medium- and Long-term Commitment and Goals			
Occupational Safety and Health GRI 403 IF-EU-320a.1	The Company values safety and health risk management by enforcing strict compliance with regulations for both the Company and its partners, enhancing safety awareness, and preventing pollution. We continuously improve our environmental, safety, and health policies to maintain a workplace with zero major occupational accidents, thereby creating a better quality of life for employees and the community.	<ol style="list-style-type: none"> 1. Complete ISO 45001:2018 management system renewal audit. 2. Ensure the safety of work environment and equipment: Guan Tian Cogeneration Plant completed more than 5 major environmental, safety, and health improvements. 3. Star Energy has no major occupational safety violation and environmental protection violation resulting in a single fine of more than NT\$50,000. 4. Conduct 2 workplace environment monitoring sessions and various self-inspections at the Taipei office. 5. Complete the identification and risk assessment of workplace unlawful acts and conduct 2 supervisory training sessions on preventing workplace violence. 6. Implement general occupational safety and health education training for new and current employees. 7. Conduct worker health examinations regularly and provide on-site medical services. 	<ol style="list-style-type: none"> 1. Make good use of ISO 45001 Occupational Health and Safety Management System and strengthen the Guan Tian Plant's hazard identification and risk assessment. 2. Run the "HSE APP" for each project of Star Energy. 3. Promote health awareness among employees and address their psychological needs by providing counseling services. 4. Provide employees with a safe, high-quality, and comfortable working environment to enhance work quality. 5. Through the "Plan for Preventing Ergonomic Hazards" and the "Plan for Preventing Abnormal Workload- triggered Disorders" to review and improve safety facilities and management within the workplace and take various preventive measures. Additionally, strengthen traffic safety education. Strive to achieve the goal of zero occupational accidents (excluding commuting accidents, with $FR \leq 0.6$ and $SR \leq 26$). 	<ol style="list-style-type: none"> 1. We served as the core enterprise of Tainan's cogeneration safety and health family, and received the "Outstanding Performance Award" of the safety and health family for four consecutive years. 2. The Guantian Plant completed 8 environmental, safety, and health improvements. It hosted visits and exchanges on environmental, safety, and health achievements with the Repair Squadron of the 1st Tactical Fighter Wings of ROCAF and the Chang Jung Christian University EMBA program. The plant received a certificate of appreciation from the Southern District Health Service Center for contributing to the 2023 Workplace Health Management Case Study Manual. 3. Star Energy conducted the "Hazard Notification and Toolbox Meeting" with contracted workers at each project site before starting work each day. Monthly statistical analysis of risk probability in hazard identification was conducted as the focus for occupational safety and disaster mitigation. 4. Revised the "Human Rights Policy and Management Procedures" and the "Specific Management Plans for Human Rights Concerns" and promoted workplace diversity and gender equality policies. 5. Provided free health examinations exceeding legal requirements and offered on-site medical services at TCC's Taipei office: offering individual consultations and health education guidance to 29 employees. 6. Revised the "Prevention Plan for Avoiding Illicit Acts Against Taipei Office of TCC", published a written statement signed by the highest executive to prevent workplace unlawful acts, and conducted 1 online seminar and 2 in-person seminars for supervisors. 7. Completed hazard identification and risk assessment and conducted 4 training sessions on hazard prevention and communication skills. 8. Organized employee health seminars and health promotion activities, conducted equipment and environmental safety inspections, and set up an employee lounge area at the Taipei office. 9. Implemented occupational safety and health education training for current employees and a 3-hour training session for new employees. 	<ul style="list-style-type: none"> • Occupational safety and health work: Guan Tian Plant-Safety & Environmental Protection Section is responsible for planning and promotion. Each section performs hazard identification and risk assessment according to their powers and responsibilities. • Star Energy: Safety, Health and Environment Management Office • Taipei Office: Administration Dept. 	<ol style="list-style-type: none"> 1. Implement ISO 45001: <ul style="list-style-type: none"> • Track related matters in occupational safety meetings. ^(M) • Regulatory compliance assessments. ^(Q) • Undergo third-party inspections. ^(Y) 2. Star Energy's Safety, Health and Environment Management Office compiles statistics on the number of injury-free days for each project and conducts self-inspections. It also performs on-site safety, health, and environmental inspections and audits for projects as needed. ^(M) 3. Reports on occupational safety, health, and environmental performance are disclosed to the "Occupational Safety and Health and Environmental Protection Committee" to serve as a basis for improving and encouraging occupational safety and health efforts. ^(Q)

Material Topics	Policy	Commitment and Goals		Specific Actions and Achievements in 2023	Responsibilities and Resources	Evaluation and Management Mechanism
		Short-term Quantitative Indicators and Major Milestones for 2024	Medium- and Long-term Commitment and Goals			
Talent Management and Development <div>GRI 2-7</div> <div>GRI 2-8</div> <div>GRI 401</div> <div>GRI 404</div>	<p>With the goal of cultivating international professional talents as an important part of the Company's business strategy, we actively develop different recruitment channels, assist employees in career development planning, offer appropriate job rotation and promotion opportunities and provide diversified training programs, as well as competitive compensation and benefits to build a complete talent cultivation and retention structure.</p>	<ol style="list-style-type: none"> Promote the English proficiency enhancement program, including conversational courses, for a minimum of 150 training hours; additionally, provide business English training courses for managers. Continuously implement the new employee care program. Regularly convene the Talent Cultivation and Development Advisory Committee. Middle and senior management training program: On average, each middle and senior manager (Chief and above) has ≥ 26 hours of training. Employee training hours reach ≥ 36 hours per person. Implement job rotation for employees. 	<ol style="list-style-type: none"> Professional Competency Project: In accordance with the organization's future development goals, we will conduct an inventory of departmental functions and select key professional competencies, then plan talent cultivation and development programs for key personnel in each department. High-level Talent Development: Develop professional talents in management, engineering, and finance and creating a pool of potential successors for senior management positions. Become a benchmark company for professional expertise and talent development, attracting talented individuals to join the Company, and offering the most competitive compensation and benefits in the industry. 	<ol style="list-style-type: none"> Developed a flexible (variable) compensation and benefits program to retain key talents. Implemented a parallel mechanism for rewarding outstanding performance and providing guidance for underperforming employees Implemented a new employee care program. In 2023, a Talent Cultivation and Development Advisory Committee meeting was conducted to report on the effectiveness of the annual plan and to outline the talent development and growth plans for the following year. Carried out rotations for middle-and entry-level supervisors and management, finance, and procurement personnel. The rotation completion rate for 2023 was about 7%, including 3 department-level supervisors and 6 middle-level supervisors. The average learning time of employees reached 51.8 hours/person; the average learning time of mid-to-senior management reached 26.1 hours/person. Conducted a core workforce training program (improving English proficiency), totaling 282 training hours. 	<ul style="list-style-type: none"> Strategies for talent recruitment and cultivation: Administration Dept. 	<p>Regularly convene the Talent Cultivation and Development Advisory Committee. Quantitative goals will be included in annual KPIs, and they will be tracked in supervisor meetings. M</p>
Energy Management and Circular Economy <div>GRI 301-1</div> <div>GRI 301-2</div> <div>GRI 306-2</div> <div>IF-EU-110a.1</div> <div>IF-EU-110a.2</div> <div>IF-EU-110a.3</div> <div>IF-EU-150a.1</div> <div>IF-EU-150a.3</div> <div>IF-EU-420a.3</div>	<p>The Company complies with environmental protection regulations, attaches great importance to sustainable development of the environment, and continuously promotes unit efficiency improvement, environmental protection equipment renewal, waste recycling as well as energy/resource recycling to achieve energy conservation and carbon reduction, fulfilling the idea of circular economy</p>	<ol style="list-style-type: none"> The percentage of alternative fuel use (SRF and scrap tires) $\geq 30\%$. Complete the identification of emission sources and the construction of data collection models for TCC (parent company). Continue to collaborate with suppliers to apply for joint reuse and to recycle coal ash in its entirety. 	<ol style="list-style-type: none"> Achieve an average annual electricity saving rate of $\geq 1\%$. Increase the fuel substitution rate to reduce greenhouse gas emissions. Complete GHG inventory and assurance of subsidiaries in consolidated statements. 	<ol style="list-style-type: none"> In April 2023, obtained the SRF combustion operation permit and signed procurement contracts with two SRF suppliers. In 2023, we burned 24,614 metric tons of scrap tires and 3,620 metric tons of SRF, which reduced the coal consumption by approximately 44,140 metric tons. In 2023, the amount of coal ash generated was 22,465 metric tons, and was 100% recycled and converted into CLSM (Controlled Low-Strength Materials). The average electricity saving rate from 2015 to 2023 was 1.34% (the estimated annual electricity saving rate in 2023 was 1.18%). Completed the implementation of a greenhouse gas inventory system and established an internal greenhouse gas inventory mechanism. 	<ul style="list-style-type: none"> Planning and implementing energy-saving and carbon-reduction projects, coordinating the supply and combustion of scrap tires and SRF, maintaining fuels conveying equipment, as well as reusing coal ash: Guan Tian Plant. GHG inventory and verification planning of the Group: Planning & Investment Management Dept. 	<ol style="list-style-type: none"> The implementation performance is evaluated, while scheduled the implementation projects for the next year. Y Based on the boiler's original design, the heating value ratio of 30% for scrap tires burning is used as the benchmark, and the co-combustion is adjusted according to the boiler's operating conditions.

Communication Channel:



Investor

Electricity Policy Evaluation and Response

Corporate Governance and Sustainability Strategy

Economic Performance

Risk Management/Control

Supply Stability and Reliability

Renewable Energy Development

Energy Management and Circular Economy

- Investor service : 02-87982000 ext.546
- Email : csr@cogen.com.tw






Human Rights Protection

Occupational Safety and Health

Talent Management and Development

- Contact number : 02-87982000 ext.515
- Star Energy : 02-8798-2899 ext.252
- Workplace violence consultation and complaint contact number : 02-8798-2000 ext.529, 523
- Email : hr@cogen.com.tw
- Occupational Safety and Health of the Guan Tian Plant : e163@cogen.com.tw






Integrity Management

Integrity Management and Legal Compliance

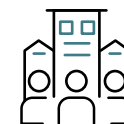
- Contact number : 02-87982000 ext.626
- Email : whistle@cogen.com.tw





CHAPTER 1

Corporate Integrity and Sustainable Development



- 1.1 About TCC
- 1.2 Corporate Governance and Integrity Management
- 1.3 Risk Management



Material Topics

- Corporate Governance and Sustainability Strategy
- Economic Performance
- Integrity Management and Legal Compliance
- Risk Management/Control

✦ EPS NT\$1.82

✦ Received the **Taiwan Corporate Sustainability Awards (TCSA)** and the **“Excellence in Corporate Social Responsibility Award”** from CommonWealth Magazine in 2023

✦ Ranked among the top **6–20%** of listed companies in the corporate governance evaluation

Goals

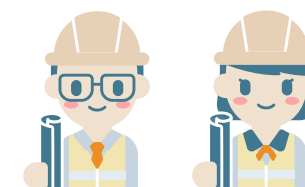
- Rank among the top 5% of listed companies in the corporate governance evaluation
- Strengthen the competencies of the Board of Directors and engagement with stakeholders
- Uphold the spirit of integrity management and regulatory compliance

- Improve the Company's policies and regulations

- Implement risk management

- Enhance operational performance

- Achieve an **85%** success rate in the bidding of ancillary services
- Obtain EPC and O&M works for large-scale renewable energy projects



Performance

- Ranked among the top **6–20%** of listed companies in the corporate governance evaluation
- Board of Directors attendance rate: **86.5%**
- Remuneration Committee attendance rate: **92.9%**
- Audit Committee attendance rate: **100%**
- Nominating Committee attendance rate: **100%**
- Average training hours for directors: **9.96** hours

- Conducted **2** training sessions on preventing insider trading and integrity management related education
- Conducted **1** training session on legal education

- Earnings per share (EPS) reached **NT\$1.82**

- Developed and implemented the 2023 risk profile and related control measures
- No significant internal control deficiencies in 2023**

Taiwan Corporate Sustainability Awards (TCSA)

Sustainability Report Gold Award
Top 100 Sustainability Exemplary Awards

"Excellence in Corporate Social Responsibility Award" of Commonwealth Magazine

Ranked **9th** in the Medium-sized Enterprise category



1.1 About TCC

1.1.1 About TCC Group

TCC, the first listed private electric power company in Taiwan, was established in 1992 and listed on the market in 2003, with a paid-in capital of NT\$7.3 billion.

At the beginning of its establishment, the Company specialized in providing cogeneration technology and assisting industries in building cogeneration systems. In addition to investing in the establishment of Ta-Yuan Cogen Co., Ltd. through joint venture, TCC has successively built several diesel engine cogeneration power plants based on the BOT (Build-Operate-Transfer) model. The Company independently established the Guan Tian Cogeneration Plant, providing regional energy integration services for the Guantian Industrial Park.

To coincide with the government's energy policy, TCC has successively engaged in the investment, construction, and operation of independent gas-fired power plants, including Star Energy Power, Sun Ba Power, and Star Buck Power. It also invested in Kuo Kuang Power through equity acquisition. Currently, the four gas-fired power plants account for about 30% of the total installed capacity of domestic independent power plants and nearly 4.5% of the total installed capacity in Taiwan, playing an important role in domestic power supply*. As for the overseas business, Taiwan Cogeneration International Corporation, a subsidiary of TCC, has invested in Redondo Peninsula Energy, Inc. in the Philippines.

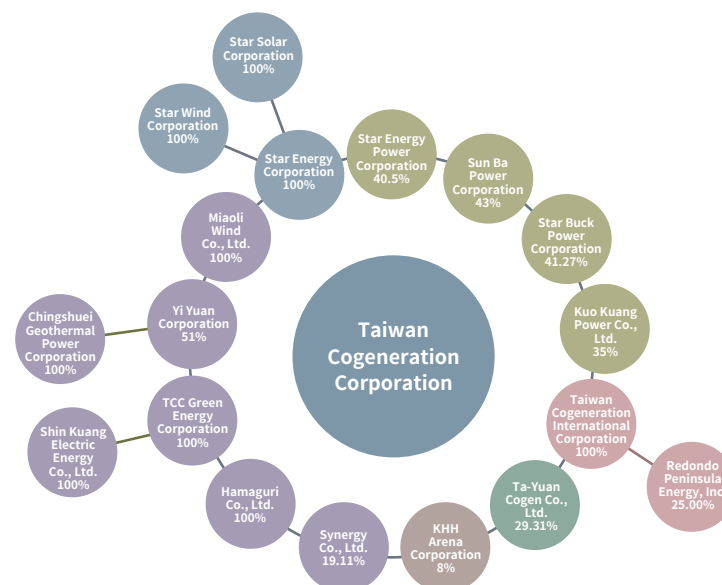
In recent years, in line with energy transition, net-zero carbon emission, and global sustainability trends, TCC has fully committed to developing renewable energy-related businesses. It has become the first company in Taiwan capable of providing comprehensive services in renewable energy, including investment and development, construction, operation and maintenance (O&M), green electricity retailing, and energy storage. The subsidiary, Star Energy, is a well-known professional engineering company in Taiwan. In addition to the acquirement of various solar power, wind power, substations and transmission lines EPC projects, it also invests in the development of its own projects for solar power and onshore wind power. Our subsidiary, TCC Green Energy, is currently the largest green electricity retailer in Taiwan in terms of accumulated wheeling volume for green electricity, demonstrating outstanding performance in green electricity retailing. By actively deploying new business models, including ancillary services, it is expanding its green electricity business market. TCC has been in operation for over 30 years, continuously fostering innovative growth while maintaining stability. In the future, we will continue to enhance our core expertise and competitive advantages, striving to realize our vision of sustainable business operations.

Note: The total installed capacity of four independent power plants invested by TCC is 2,491 MW. As of 2023, the total installed capacity of independent power plants was 8,328 MW, and the total installed capacity of Taipower's systems was 55,439 MW.

Businesses of TCC Group

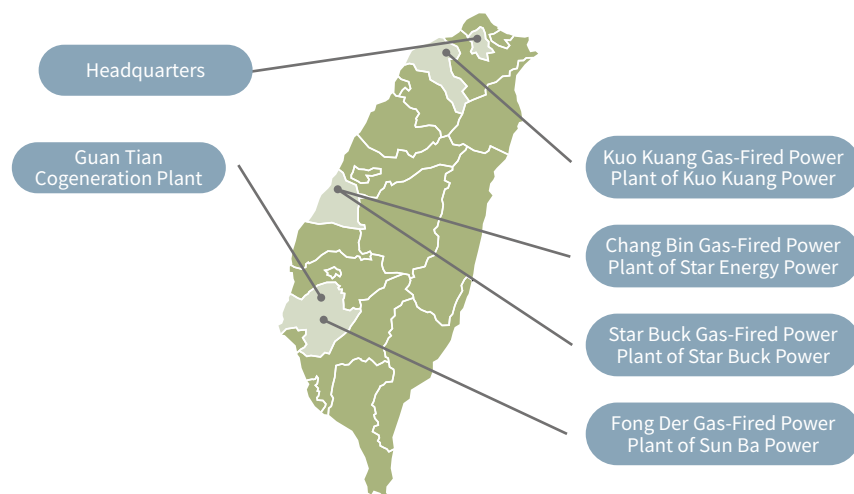
- **Investment and Development:** Invest in cogeneration plants through sole proprietorship, joint venture, or BOT, and sell the steam and electricity produced by the cogeneration plants to partner companies or neighboring users.
- **Vertical Integration:** Investment, construction, and O&M of thermal power plants, cogeneration plants, and renewable energy power plants.
- **Comprehensive Services:** Comprehensive and vertically integrated services including planning, design, procurement, installation, construction management, financial planning, environmental protection, and O&M of thermal power plants, cogeneration plants, renewable energy power plants, transmission lines, substations, and related projects.
- **Engineering, Procurement, and Construction (EPC):** Engineering, procurement, construction, technical support, and consulting services for thermal power plants, cogeneration plants, renewable power plants, transmission lines, substations, and related projects.
- **Renewable Energy O&M:** Renewable Energy O&M Center to carry out O&M for large-scale solar photovoltaic power plants and onshore wind farms, integrating local offshore O&M teams.
- **New Energy Services:** Renewable energy retailing, ancillary services, energy storage system planning and construction.

TCC Invested Companies and Shareholding Percentage (As of December 31, 2023)



Geographical Location of Operating Bases

The head offices of TCC and Star Energy are both located in Taipei City, and their operating bases also include the Guan Tian Cogeneration Plant in Tainan City. The independent power producers (IPPs) invested by TCC are located in Changhua County, Tainan City, and Taoyuan City.



Category	Invested Company	Major Businesses and Characteristics
Gas-Fired Power Plant	Star Energy Power Corporation	Operation of Chang Bin Gas-Fired Power Plant with an installed capacity of 507 MW
	Sun Ba Power Corporation	Operation of Fong Der Gas-Fired Power Plant with an installed capacity of 1,014 MW
	Star Buck Power Corporation	Operation of Star Buck Gas-Fired Power Plant with an installed capacity of 490 MW <ul style="list-style-type: none"> The EPC project built by TCC, which is the first company in Taiwan with the EPC project experience for gas-fired combined cycle power plant
	Kuo Kuang Power Co., Ltd.	Operation of Kuo Kuang Gas-Fired Power Plant with an installed capacity of 480 MW <ul style="list-style-type: none"> Invested by TCC through mergers and acquisitions of overseas equity
	Ta-Yuan Cogen Co., Ltd.	Operation of Ta-Yuan Cogeneration Plant (82 MW) and the plant in the Taoyuan Environmental Science & Technology Park <ul style="list-style-type: none"> A TPEx listed company Dayuan Industrial Park energy and resource integration services

Category	Invested Company	Major Businesses and Characteristics
Construction Engineering (Electricity Professional)	Star Energy Corporation	Design, planning, procurement, contracting, construction, and O&M of power plants, transmission lines, and renewable energy related projects <ul style="list-style-type: none"> Contracted Taipower's 150 MW solar PV project in Tainan Constructed the Qigu joint booster station
Overseas Power Business Investment	Taiwan Cogeneration International Corporation	Overseas investment business
	Redondo Peninsula Energy Inc.	Development of Subic Bay Coal-Fired Power Plant in the Philippines
Renewable Energy Development	Yi Yuan Corporation	The main businesses include geothermal energy technology services, investment management consulting, and international trade <ul style="list-style-type: none"> Collaborated with the Yilan County Government to conduct Chingshuei geothermal development through BOT
	Chingshuei Geothermal Power Corporation	Construction and operation of Chingshuei Geothermal Power Plant with an installed capacity of 4.2 MW <ul style="list-style-type: none"> Taiwan's largest geothermal power plant, which began its commercial operation in 2021
	TCC Green Energy Corporation	Green energy investment and development, renewable energy retailing and ancillary services <ul style="list-style-type: none"> In 2019, it obtained the second renewable energy retailer license in Taiwan The first kWh of renewable electricity was sold in October 2020, and the cumulative electricity sold by the end of 2023 exceeded 460 GWh
	Hamaguri Co., Ltd.	Fishery and electricity symbiosis project investment and development
	Shin Kuang Electric energy Co., Ltd.	Operation of the Shin Kuang Photovoltaic Power Plant <ul style="list-style-type: none"> RC rooftop 5 MW photovoltaic power plant, which began commercial operation in 2019
	Star Wind Corporation	Onshore wind power investment, development, construction, and operation <ul style="list-style-type: none"> Star Wind's 10.35 MW wind farm, which began commercial operation in 2020
	Star Solar Corporation	Solar photovoltaic investment, development, construction, and operation <ul style="list-style-type: none"> Wushantou Reservoir Floating Photovoltaic Power Plant Phase I with an installed capacity of 13.7 MW Wushantou Reservoir Floating Photovoltaic Power Plant Phase II with an installed capacity of 13.2 MW (under construction)
	Miaoli Wind Co., Ltd.	Operation of the Dapeng and Zhunan onshore wind farms, with a total installed capacity of 49.8 MW
Others	Synergy Co., Ltd.	Renewable energy projects development and O&M
	KHH Arena Corporation	Operation and management of Kaohsiung Arena and its ancillary facilities

1.1.2 Economic Performance

Financial Performance

Creating value for investors is an important responsibility of TCC. In recent years, TCC has been steady and well-performing. The consolidated net profit after tax in 2023 was NT\$1,242,385,000, and the total amount of taxes paid accounted for 1.59% of the company's revenue. For more financial information, please refer to the Annual Report.



Unit: NT\$1,000

	Direct Economic Value Generated (Revenue)	Economic Value Distributed (Expenditure)						Economic Value Retained
Year	Operating Revenue	Operating Costs	Employee Salary and Benefits	Interest on Debts/ Loans	Tax	Fee	Community Investments	Net Profit for the Current Period
2021	7,107,172	5,630,497	451,938	66,981	121,012	919	2,323	905,389
2022	5,527,513	4,040,655	480,784	86,457	88,863	12,623	1,557	917,015
2023	6,813,291	4,805,144	657,917	100,595	60,833	7,876	2,937	1,242,385

Major Business Income

Unit: NT\$1,000

Major Business Income	Amount	Percentage (%)
Sales Revenue	1,543,441	29%
Construction, O&M, and Consulting Service Revenue	3,804,961	71%
Total	5,348,402	100%

Net Profit after Tax and EPS

	2021	2022	2023
Net Profit after Tax (Parent company only)	NT\$897,884,000	NT\$906,774,000	NT\$1,252,275,000
EPS	NT\$1.52	NT\$1.44	NT\$1.82

Operating Revenue

Unit: NT\$1,000

	2021	2022	2023	Reasons for Change
Sales Revenue	1,311,137	1,690,298	1,543,441	<ul style="list-style-type: none"> An increase in revenue in 2022 compared to 2021: Mainly due to the higher electricity prices and the increased purchase prices by Taipower for the Guan Tian Plant. In addition, the sales of electricity of Miaoli Wind (subsidiary), Star Wind (sub-subsidiary), and Chingshuei Geothermal Power (sub-subsidiary) also played a significant role in driving revenue growth. A decrease in revenue in 2023 compared to 2022: Mainly due to a reduction in electricity sales revenue from Miaoli Wind (subsidiary) and Chingshuei Geothermal Power (sub-subsidiary).
Construction, O&M, and Consulting Service Revenue	5,095,859	2,978,583	3,804,961	<ul style="list-style-type: none"> A decrease in revenue in 2022 compared to 2021: Mainly due to some construction projects were completed successively, resulting in a decrease in project revenue. An increase in revenue in 2023 compared to 2022: Mainly due to the increased progress of Star Energy's (subsidiary) projects compared to the previous year, resulting in an increase in project revenue.
Total	6,406,996	4,668,881	5,348,402	

Non-Operating Revenue and Expenses

Unit: NT\$1,000

	2021	2022	2023	Reasons for Change
Investment Income	631,227	791,123	1,398,007	<ul style="list-style-type: none"> An increase in income in 2022 compared to 2021: Mainly due to the rise in natural gas prices, which increased dispatch by Taipower for the gas-fired power plants, after deducting the net impact of the recognized fines from the Fair Trade Commission. An increase in income in 2023 compared to 2022: Mainly due to the rise in natural gas prices, which increased dispatch by Taipower for the gas-fired power plants, and the insurance compensation income recognized by Star Buck Gas-fired Power Plant.
Others	(45,051)	(21,110)	(78,408)	<ul style="list-style-type: none"> A decrease in loss in 2022 compared to 2021: Mainly due to an increase in the recognition of foreign currency exchange gains. An increase in loss in 2023 compared to 2022: Mainly due to a decrease in recognition of foreign currency exchange gains, an increase in interest expenses, and the recognition of goodwill impairment losses for Hamaguri Co., Ltd. (subsidiary)
Total	586,176	770,013	1,319,599	

Net Defined Benefit Liabilities

Unit: NT\$1,000

	2021	2022	2023
Net Defined Benefit Liabilities	124,387	112,088	121,842

Note: Net defined benefit liabilities are the employee pension provided in accordance with the Labor Standards Act.

Earning Distribution

The dividend distribution and shareholders' return on investment in the last three years are as follows:

Unit: NT\$1,000 (NT\$ for dividend per share)

	2021	2022	2023
Net Profit after Tax (Parent company only)	897,884	906,774	1,252,275
EPS (Earnings Per Share)	1.52	1.44	1.82
Add: Adjustment Item (Note 1)	0.39	0.38	0.43
Earnings Per Share Available for Distribution	1.91	1.92	2.25
Cash Dividends Per Share (Note 3)	1.75	1.05	1.93
Stock Dividends Per Share (Note 3)	-	0.7	-
Dividend Distribution Ratio (Note 2)	102%	101%	95%

Note 1: The effect of invested power plant IFRS adjustment is added.

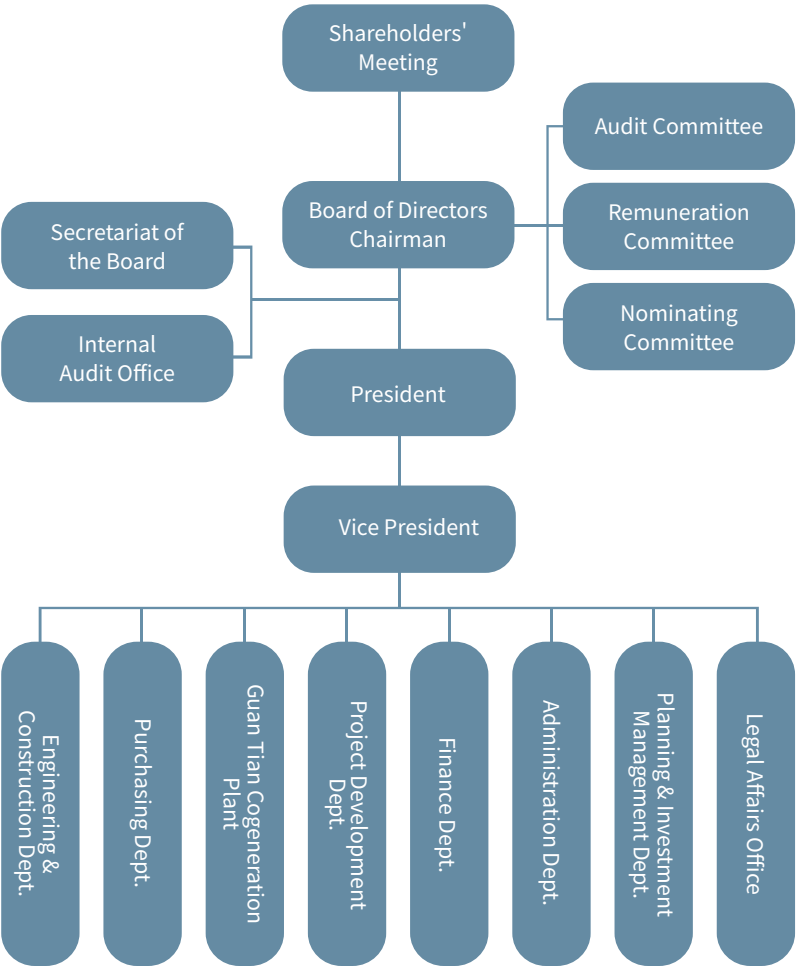
Note 2: The ratio after deducting the legal reserve of 10%.

Note 3: The 2022 earnings distribution was adjusted due to an increase in the number of outstanding shares resulting from a cash capital increase on June 6, 2023. Therefore, the ratios for stock and cash dividends were adjusted. The cash dividend per share was adjusted from NT\$1.05 to NT\$0.90, and the stock dividend per share was adjusted from NT\$0.70 to NT\$0.60.



1.2 Corporate Governance and Integrity Management

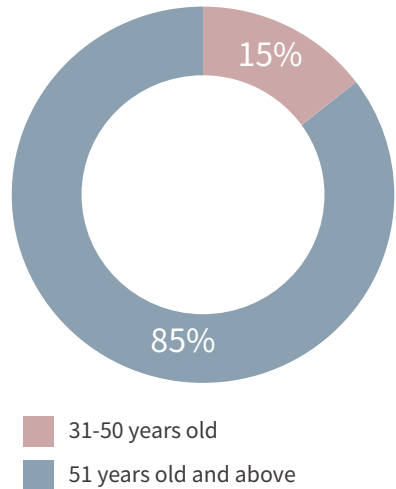
1.2.1 Corporate Governance



Diversification of the Board and Continuing Education Hours

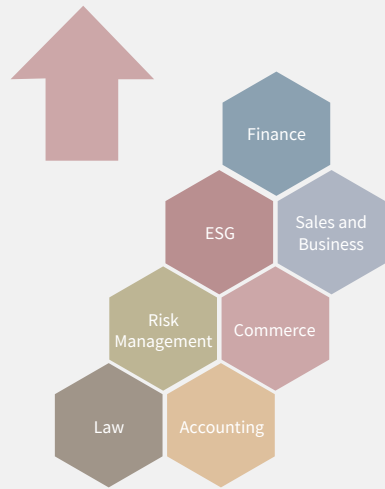
The Shareholders' Meeting of TCC is the highest decision-making body of the Company. Directors are appointed by the Shareholders' Meeting to carry out the Company's operations in accordance with the law. According to the Company's Articles of Incorporation, the election of directors follows a candidates nomination system, where candidates are nominated by shareholders holding more than 1% of the shares and the Board of Directors. The nominations are then reviewed by the Nominating Committee and approved by the Board of Directors. The Board consists of 13 directors, including 3 independent directors, serving a term of 3 years. To improve the structure of the Board of Directors, the basic conditions, such as gender and age of the Board members are diverse. They also have diverse professional backgrounds in academics, work experience, and industries. Efforts will be made to further increase the number of female Board members in the future.

Age composition of the Board of Directors



Director training hours and course content

Average training hours for directors:
9.96 hours



Performance Evaluation of the Board of Directors



TCC's "Regulations for the Performance Evaluation of the Board"

The Internal Audit Office is subordinated to the Board of Directors, which is responsible for the internal audit of various operating activities, ensuring the continuous and effective implementation of the internal control system, and assisting the Audit Committee in fulfilling its supervisory responsibilities. There is also the Secretariat of the Board with a designated chief governance officer is responsible for matters relating to the shareholders' meeting, the Board of Directors, functional committees, and corporate governance. In 2023, several regulations were amended to strengthen corporate governance. Additionally, to avoid conflicts of interest, according to the "Rules of Procedure for Board of Directors Meeting" and the organizational charters of each committee, individuals with vested interests in the agenda items are to refrain from participating in discussions and voting. The composition and diversity of the Board of Directors and functional committee members are shown in the following table. For detailed operations and important resolutions, please refer to the Company's website and [page 29 of the Annual Report](#).

Please see the following table for members of the Board of Directors and functional committees as of December 31, 2023:
☆ : Convener

Title	Name	Diversity						Audit Committee	Remuneration Committee	Nominating Committee
		Gender	Operational Management	Leadership and Decision-Making	Industry Knowledge	Finance and Accounting	Legal Affairs			
Chairman	Shun-I Huang	Male	○	○	○					☆
	Jenn-Yeong Wang	Male	○	○	○	○				○
	Sheng-Jen Hsiao	Male	○	○	○					
	Ming-Teh Chiang	Male	○	○	○					
	Tien-Ho Kuo	Male	○	○	○					
	Ching-Hung Cheng	Male	○	○	○					
	Kuo-Hsiang Chao	Male	○	○						
	Sheng-Chun Wang	Male	○	○	○					
	Sung-Pin Chang	Male	○	○	○					
Director	Gu-Chuan Tsiou	Male	○		○					
	Han-Shen Li	Male	○	○	○	○		☆	○	○
	Ji-Sheng Ye	Male			○		○	○	☆	○
	Jiann-Fuh Chen	Male	○		○			○	○	○
Independent Director										

Note 1: Directors do not hold cross-shareholdings with suppliers or other stakeholders.

Note 2: The Board of Directors maintains independence, with no spousal or familial relationships among directors as stipulated in Paragraphs 3 and 4, Article 26-3 of the Securities and Exchange Act.

Note 3: Other member of the Remuneration Committee: Fan-Jou Hsu.



Audit Committee

A total of **7** meetings were held in 2023, with an attendance rate of **100%**.



Remuneration Committee

A total of **3** meetings were held in 2023, with an attendance rate of **92.86%**.



Nominating Committee

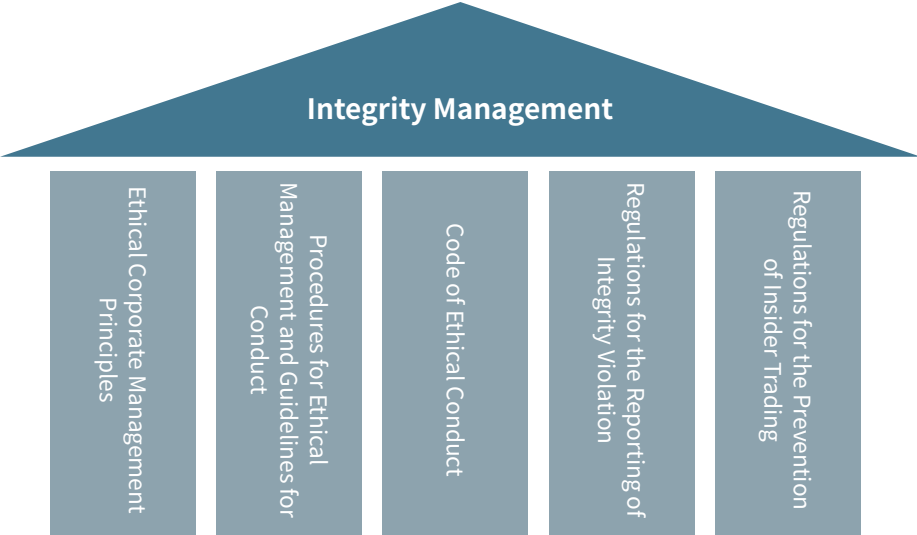
A total of **3** meetings were held in 2023, with an attendance rate of **100%**.

Composition and operations of the functional committees of the Company



1.2.2 Integrity Management and Legal Compliance

TCC established the Ethical Corporate Management Principles based on "integrity, transparency, and accountability". Operating on the foundation of ethics and integrity, it has long adhered to the integrity norms when engaging in all business activities, follows guidelines such as avoidance of interests, confidentiality of information, non-discrimination and non-exclusion, not accepting illegitimate benefits, operating with integrity, and is committed to establish a good corporate culture of integrity.



Responsible unit:
The Legal Affairs Office is responsible for supervising the implementation of integrity management and reporting to the Board of Directors at least once a year.

1. Provide supervision and assistance for incorporating integrity and ethical values into the Company's business strategy, and formulate malpractice prevention measures.
2. Supervise the development of guidelines for conduct.
3. Supervise the planning of organization as well as the related responsibilities, and configure a supervision and checking mechanism for high-risk business activities.
4. Supervise the promotion and coordination of integrity policy awareness campaigns and training.
5. Supervise the planning of reporting systems to ensure the effectiveness of implementation.
6. Report to and assist the Board and managers in reviewing and evaluating the effectiveness of preventive measures on a regular basis.

TCC's integrity management norms

Promotion of Integrity Management in 2023



On March 10, 2023, the Legal Affairs Office reported to the Board of Directors on the promotion of integrity management, including policy implementation, system establishment, training activities, and reporting channels. All policies were operated and implemented in accordance with the Ethical Corporate Management Principles with no discrepancies.



- (1) On October 4, 2023, a course titled "Discussion on Insider Trading Legal Issues" was held, featuring external lecturer attorney Wei-Hang Kuo, a managing partner at Formosan Brothers Attorneys-at-Law. The course had 33 participants and a duration of 3 hours.
- (2) On December 22, 2023, a course titled "Integrity Is Key: Discussing Integrity Management in Listed Companies" was held, featuring external lecturer attorney Tien-Chang Chi from the Taiwan Corporate Governance Association. The course had 42 participants and a duration of 3 hours. Education and training were held to prevent violation of integrity management. Participants included the Company's directors, supervisors, employees, and representatives of subsidiary board members.



The Company's Sustainability Report and website disclose/promote the Company's integrity management policies and related reporting channels. The sustainability report issued in June 2023 received the Sustainability Report Gold Award from the Taiwan Corporate Sustainability Awards (TCSA), showing that the Company has maintained a good communication channel with stakeholders.



In addition to being ranked among the top 6–20% of listed companies in the 10th Corporate Governance Evaluation (2023), the Company also received the "Top 100 Sustainability Exemplary Awards" of the Taiwan Corporate Sustainability Awards (TCSA) and the "Excellence in Corporate Social Responsibility Award" of Commonwealth Magazine in 2023, showing external recognition of the Company's performance in corporate governance and integrity management.



Whistle-blowing Channel

Reporting email: whistle@cogen.com.tw

Reporting hotline: (02)8798-2000 Ext. 626

Regulation Compliance

TCC operates with honesty and integrity, abides by laws and regulations, and implements the required advocacy and management. In 2023, there were no violations and penalties.

Litigation Regarding Fair Trade Commission

In March 2013, the independent power producers TCC invests (including Star Energy Power, Sun Ba Power, Star Buck Power and Kuo Kuang Power, collectively referred to as the "IPP Companies") were fined by the Fair Trade Commission for violating Paragraph 1, Article 14 of the Fair Trade Act. Since they actually did not engage in any concerted actions, the IPP Companies filed litigations of revocation with the administrative court in November 2013. As of the end of 2023, the related details are as follows:

Date	Litigation Status
November, 2013	After discussing with lawyers, TCC was convinced that there were no concerted actions among the IPP Companies, therefore, the IPP Companies filed litigations of revocation with the Taipei High Administrative Court.
October, 2014	The Taipei High Administrative Court ruled in favor of the IPP Companies and revoked the administrative disposition of concerted actions which was made by the Fair Trade Commission.
June, 2015	The Fair Trade Commission filed an appeal with the Supreme Administrative Court. Afterwards, the Supreme Administrative Court remanded for a new trial to the Taipei High Administrative Court.
May, 2017	The Taipei High Administrative Court ruled in favor of the IPP Companies and revoked the administrative disposition of concerted actions which was made by the Fair Trade Commission.
September, 2018	The Fair Trade Commission filed an appeal with the Supreme Administrative Court. Afterwards, the Supreme Administrative Court remanded for another trial to the Taipei High Administrative Court.
May, 2020	The Taipei High Administrative Court ruled in favor of the IPP Companies and revoked the administrative disposition of concerted actions which was made by the Fair Trade Commission.

Date	Litigation Status
June, 2022	After the Fair Trade Commission filed an appeal with the Supreme Administrative Court, the court handed down judgments between June and August 2022 to enter judgment on the litigation on its own after reversing the original judgment.
July, 2022	After the IPP Companies filed applications for retrial with the Supreme Administrative Court between July and September 2022, the Supreme Administrative Court dismissed the retrial application filed by Star Buck Power Corporation on December 14, 2023.
April, 2023	After the Supreme Administrative Court issued a final judgment on the aforementioned concerted action, between June and August, 2022, the Appeals Review Committee of the Executive Yuan dismissed the appeals filed by the IPP Companies regarding the fines imposed for the concerted action.
June, 2023	The IPP Companies filed litigations of revocation with the Taipei High Administrative Court regarding the fines imposed for concerted action and the decision on their appeals.

The fines imposed by the Fair Trade Commission in the aforementioned litigations have been paid in installments. Please refer to the following table for more information:

Company	No. of Cases	Incident	Amount (NT\$100 million)	Basis of Laws and Regulations	Competent Authority
Sun Ba Power	1	The Fair Trade Commission considered that the IPP Companies had violated the Fair Trade Act on account of concerted actions.	4.89	Paragraph 1, Article 14 of the Fair Trade Act	Fair Trade Commission
Star Energy Power	1		3.92		
Star Buck Power	1		1.00		
Kuo Kuang Power	1		3.71		

Additionally, regarding the claim of Taiwan Power Company (Taipower) for damages from IPP Companies due to violations of the Fair Trade Act, Taipower has filed a lawsuit with the Taipei District Court. The current lawsuit involves claims of approximately NT\$1.416 billion against Sun Ba Power, NT\$829 million against Star Energy Power, NT\$829 million against Kuo Kuang Power, and NT\$102 million against Star Buck Power. The cases against Sun Ba Power, Star Energy Power, and Kuo Kuang Power are still under review by the Supreme Court. Regarding Star Buck Power, the Taiwan High Court also dismissed Taipower's appeal and additional claims on December 28, 2022. However, upon review, the Supreme Court found the original judgment to be incomplete in its reasoning and on November 22, 2023, remanded the case back to the Taiwan High Court for retrial.

1.2.3 External Collaboration

TCC actively engages in external organizations, participating in mutual exchanges with related industries. It also actively participates in events organized by various associations to gain insights into industry developments and future trends. These efforts help the Company seek potential cooperation opportunities and contribute to its stable development. In addition, TCC actively participates in activities organized by the Taiwan Cogeneration Association. Apart from having senior managers serving as past presidents or secretaries of the association, the Company also assists in organizing academic and technical seminars, publishing the "Cogeneration Journal," and arranging visits for domestic power plants, cogeneration plants, and related energy facilities. These activities facilitate the exchange of operational and technical experiences.

Participating Units	Participated Associations	Method of Participation
TCC	Taiwan Cogeneration Association	Chairman/Group Leader
	Chinese Association for Energy Economics (CAEE)	Director/Member
	Taiwan Institute for Sustainable Energy (TAISE) / Center for Corporate Sustainability (CCS)	Director/Member
	Taiwan Electric Power Association (TEPA)	Director/Member
	The Taiwan Electrical Contractors Association (TTECA)	Member
	Taiwan Association of Energy Service Companies	Member
	Taiwan Wind Energy Association	Member
	Taiwan Photovoltaic Industry Association (TPVIA)	Member
	Chinese Petroleum Institute	Member
	Taipei Neihu Technology Park Development Association	Member
	Taiwan Power and Energy Engineering Association	Member
	Solar PV Generation System Association (PVGSA)	Member
	Taiwan Association for Climate Change and Energy Sustainability	Member
	Taiwan Industry-Academia Technology Alliance for Energy Digital Transformation (TAEDT)	Member

1.3 Risk Management

1.3.1 Risk Management Policy and System

TCC's risk management mechanism is driven by the attention and commitment of top management, employing a top-down approach to enhance employees' risk awareness. By integrating risk identification, analysis, assessment, managing and monitoring into strategic planning, business execution, and daily management, TCC incorporates risk management into its operations. Additionally, through education and training, TCC develops risk management knowledge and tools, fostering a risk management culture to ensure sustainable business operations and improve corporate performance.

In response to the rapid changes in internal and external business environments and to ensure the comprehensive implementation of the Company's risk management system, TCC has formulated the "Risk Management Policy and Procedures" and the "Risk Management Implementation Plan". These documents incorporate risks associated with investment, operations, management, climate change, and dishonest behavior into the scope of control system. Review and revision of the risk management plan are conducted annually to effectively reduce the likelihood of risks and their impact on the Company.

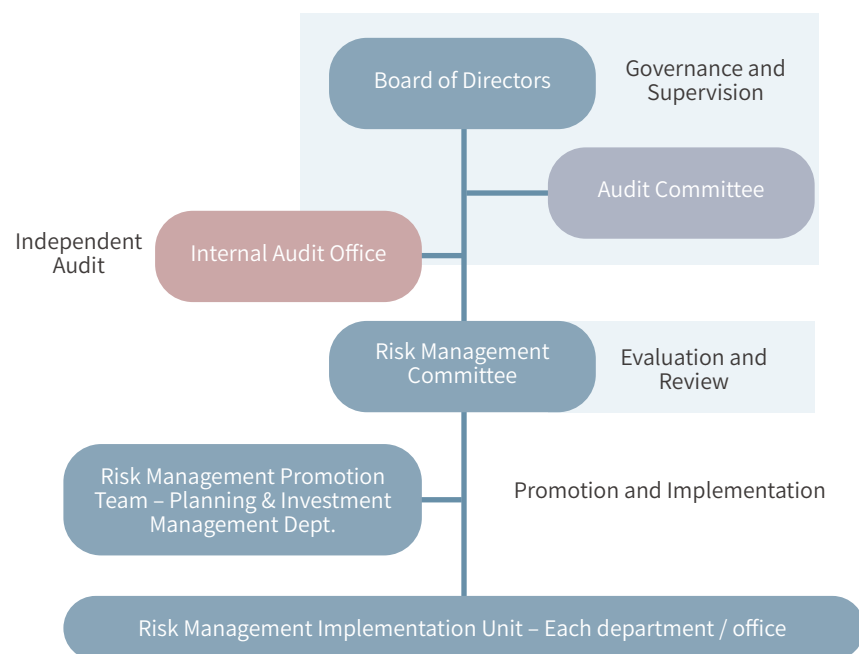
Organizational Structure of Risk Management

The Company has established a comprehensive risk governance and management framework that includes the Board of Directors, Audit Committee, and senior management. This ensures the alignment of risk management with the Company's strategies and objectives. By doing so, we identify and prioritize major risk areas, enhance the comprehensiveness, foresight, and integrity of our risk identification process. We then develop corresponding risk control measures and response strategies to ensure the achievement of the Company's strategic objectives.

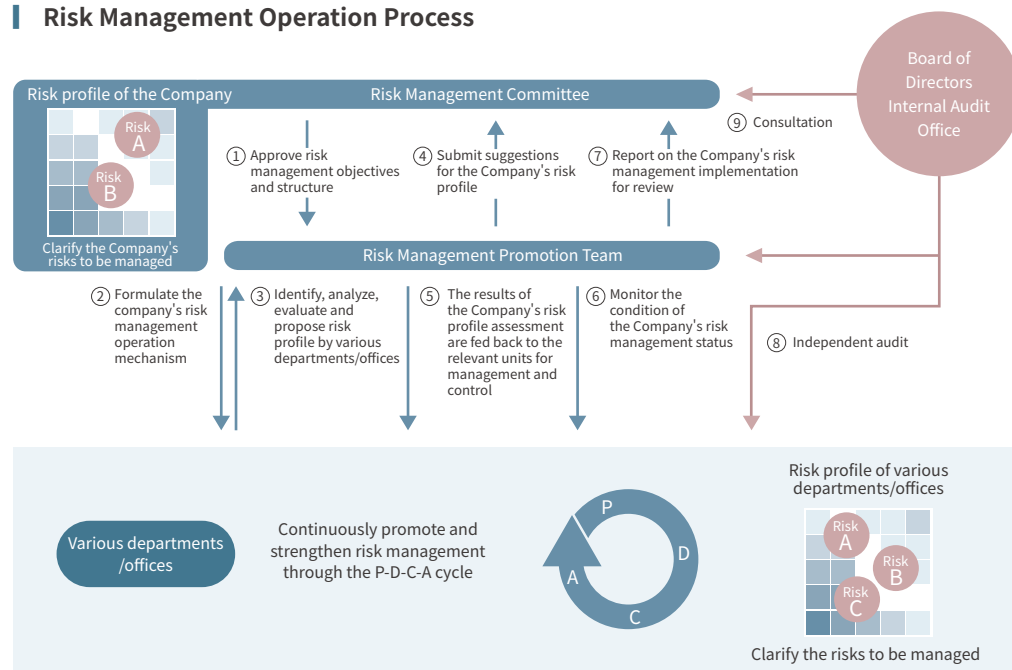
The Board of Directors is the highest governing body for risk management at the Company. The Board of Directors and the Audit Committee are responsible for overseeing the operation of the risk management mechanism and ensuring its effectiveness. The Risk Management Committee is chaired by the Chairman, with the President and Vice President serving as committee members. The committee is responsible for reviewing the Company's risk management mechanisms, risk management plans, and the effectiveness of these plans. The committee reports to the Board and the Audit Committee on the implementation and operation status of risk management at least once a year.

Participating Units	Participated Associations	Method of Participation
TCC	Taiwan Electric Power Development Association (TEPDA)	Member
	The Institute of Internal Auditors, R.O.C.	Member
	The Illuminating Engineering Society of Taiwan (IEST)	Member
	CommonWealth Sustainability (CWS)	Member
Star Energy	Taiwan Cogeneration Association	Member
	Taiwan Wind Energy Association	Member
	Taiwan Electric Power Association (TEPA)	Member
	The Illuminating Engineering Society of Taiwan (IEST)	Member
	The Taiwan Electrical Contractors Association (TTECA)	Member
	Solar PV Generation System Association (PVGSA)	Member
	Taiwan Regional Engineering Contractors Association (TRECA)	Member
	Taiwan Water Pipe Engineering Association (Taipei Office)	Member
	Taiwan Wind Industry Association (TWIA)	Member
	Taiwan Electrical and Electronic Manufacturers' Association (TEEMA)	Sponsor Member
	Taiwan Photovoltaic Industry System Association (TPiSA)	Member
	Water Industry Development & Promotion Association (WIDPA)	Member

A Risk Management Promotion Team is set up under the Risk Management Committee, which involves departments in conducting risk assessment and control activities. The Planning & Investment Management Dept. acts as the promoting and reporting unit to ensure the effectiveness of the risk management mechanisms and procedures. To enhance information security, an Information Security Promotion Team is established within the Risk Management Promotion Team. This team is responsible for controlling risks related to information security, reviewing the implementation of information security risk management measures regularly, and reporting the effectiveness of information security risk management to the Board of Directors. Additionally, the Internal Audit Office formulates audit plans and conducts independent audits of risk management matters, while reporting to the Board of Directors at least once a year.



Risk Management Operation Process



Risk Management Implementation Status

Date	Work Item	Results
2023/01	Risk management meeting	Compiled the risk profiles of various departments to create the company-level risk profile.
2023/02	Risk Management Committee	Examined the company-level risk profile and confirmed that both the risk management plan and the risk management operational mechanism for 2022 are effective.
2023/03	Completed the risk management plan	1.The risk management plan for 2023 was completed, and control measures were implemented according to the plan. 2.Reported on the implementation status of risk management for the entire year at the Board meeting on March 10, 2023.

Date	Work Item	Results
2023/07	Review the implementation of risk management measures	Reviewed the implementation of risk management measures for the first half of 2023.
2024/01	Risk management meeting	Confirmed that all risk management measures in 2023 were implemented in accordance with the management plan.
	Risk Management Committee	Examined the implementation status of risk control measures for the year 2023 and confirmed that both the risk management plan and the risk management operational mechanism of the Company are effective.

Risk Items and Countermeasures

Category	Item	Countermeasures/Controls
Investment	1. Project Development Investment	<p>Formulate countermeasures for project risks related to renewable energy, invested power plants, overseas investments, and green electricity:</p> <ul style="list-style-type: none"> Gather information on government policies and legislation development schedules, while maintaining continuous communication and negotiation with government agencies to update any changes or developments. Strengthen communication and coordination with environmental groups and local communities to minimize ecological impact and gain local acceptance. Stay updated on external environmental changes and assess investment benefits in a timely manner. Develop measures for damage mitigation or exit strategies to reduce financial impact. Meet the green energy demands of energy-heavy industries through diverse approaches. Utilize simulation software, data analysis, and experiences to reduce investment uncertainty of power market.

Category	Item	Countermeasures/Controls
Operation	2. Engineering Project Contracting	<p>Formulate countermeasures for the risk of delay in the contracting of power engineering projects:</p> <ul style="list-style-type: none"> Ensure that the construction timeline is on schedule and hold regular meetings to track and review project progress. Strengthen the implementation of occupational safety and health regulations, including daily safety equipment inspections and ensuring rigorous safety management, along with strict enforcement of penalties for violations. Supervise the workforce planning of contractors and track their employ attendance.
	3. Operation of the Guan Tian Plant	<p>Formulate countermeasures for the risks of operation, skill sharing, environmental protection laws, and material sources that may arise in the operation of the Guan Tian Cogeneration Plant:</p> <ul style="list-style-type: none"> Strengthen operational approaches and environmental quality management standardization systems and improve pollution prevention equipment. Recruit new employees and pass on technical expertise and experience through the Group's KM (knowledge management) platform, mentorship programs, and core technical training programs. Continuously monitor changes in the coal and alternative fuel markets and maximize the use of scrap tires and SRF within regulatory and safety guidelines to reduce fuel costs. Evaluate equipment upgrades to reduce coal usage and lower carbon emissions.
Management	4. Management of Investment Business	<p>Formulate countermeasures for the risks that may be encountered in the investment business:</p> <ul style="list-style-type: none"> Establish KPIs for invested companies to ensure operational performance. Assist with litigation strategies for lawsuits related to invested gas-fired power plants by consulting with external lawyers. Continuously track the progress of engineering projects and wind turbine repairs at invested power plants. Conduct well-cleaning and evaluate drilling new wells for Chingshuei Geothermal Power Plant to improve generation capacity.

Note: TCC also identified related risks in response to climate change. For details, please refer to 3.1 Climate Change and Energy Management.

1.3.2 Strengthening Information Security

The Company places great importance on information security management. In addition to including information security risks in risk control system and conducting reviews and revision annually, the Company has established an Information Security Promotion Team. The team regularly reports to the Risk Management Committee and the Board of Directors on the effectiveness of risk management to reduce and control the risks of information security threats to the Company's information assets.

Information Security Policy

The use of information technology in corporate operations and management is becoming increasingly widespread. To ensure the confidentiality, integrity, availability, and legality of information assets and critical information infrastructure, it is necessary to conduct risk assessments and appropriate protective measures. The Information Security Promotion Team is responsible for security management to meet specific objectives and adhere to policies.

Information Security Policy and Information Security Management Mechanism of TCC 



Information Security Management Plan

Formulate an internal information audit plan and information security audit items within the Company. The Information Security Promotion Team will conduct self-assessments of information security internal controls and other related improvement measures.

In 2023, assign members of the Information Security Promotion Team to serve as dedicated information security officers and personnel which complied with regulatory authorities.

Conduct annual information security inspection on information equipment, penetration testing, and vulnerability scanning operations. Oversee the implementation of information security monitoring service mechanisms at invested power plants. In 2023, Star Buck Power and Star Energy Power completed information security inspection, penetration testing, and system vulnerability scanning services.

Develop an Information Security Education and Training Plan annually. In 2023, we provided education and training on "Social Engineering and Email Security" and "Personal Information Security Protection and Secure Use of Mobile Devices".

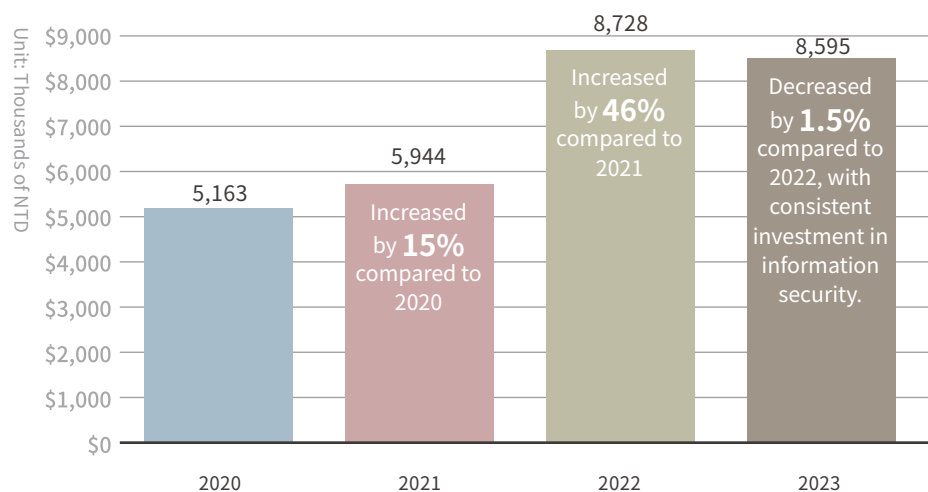
Conduct two company-wide email social engineering security test drills annually at irregular intervals. After the drills, conduct educational sessions to enhance employees' awareness of social engineering and information security.

Outsource the SOC (Security Operations Center) and establish endpoint detection and response services to strengthen information security protection.

Investment in Information Security

Since 2020, the Company has begun updating and upgrading information security management equipment. The resources invested have remained steady, demonstrating the support and commitment of the management team to information security management.

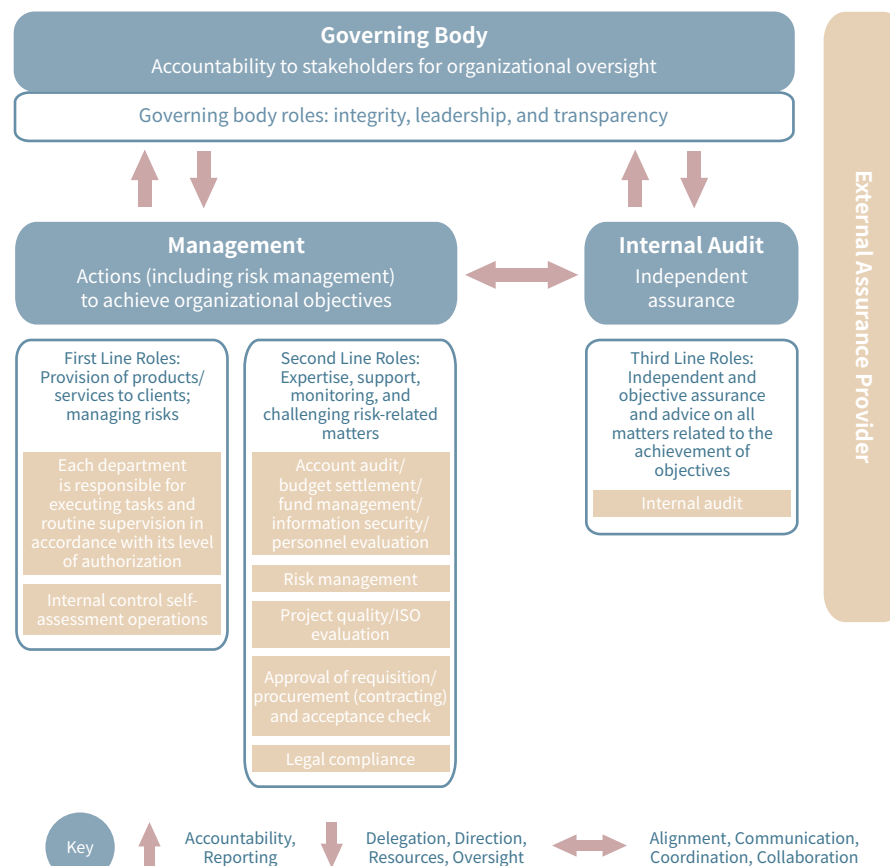
Information Security-related expenditure in the Past Three Years



1.3.3 Risk Control

The Three Lines Model of Internal Control

To effectively leverage the risk management functions of the internal control system, the Company has adopted the "Three Lines Model" released by the Institute of Internal Auditors (IIA) in July 2020. The new internal control model is structured with the governing body, management, and internal audit, each performing their respective duties. Through collaboration, coordination, and communication, they work together to achieve the Company's goals.



Design and Implement Internal Control System

To promote the integrity of the Company's operation, the management department has completed the establishment of an internal control system suitable for the Company, in accordance with the "Regulations Governing Establishment of Internal Control Systems by Public Companies" and TCC's industrial characteristics, covering the five major elements such as control environment, risk assessment, control activities, information and communication, as well as monitoring activities. In addition, internal audit implementation rules and internal control self-assessment procedures are incorporated to ensure that the following three goals are achieved:



Effectiveness and efficiency of operation



Reliability, timeliness, transparency, and regulatory compliance of reporting



Compliance with applicable laws, regulations, and bylaws

Regularly Revise the Internal Control System of the Company and Its Subsidiaries

To implement a mechanism of self-supervision and promptly respond to environmental changes, the Internal Audit Office of the Company initiated the revision of the internal control system in the middle of the year. The management department revised the control operation items based on the necessary modifications identified in the previous year's internal control self-assessment report and made additions or modifications to relevant regulations and rules. They also accounted for new directives issued by the competent authorities, thereby achieving a comprehensive review and revision of the internal control system. By internalizing corporate governance and incorporating social responsibility into our culture through the internal control system, we aim to achieve sustainable management.

In 2023, the subsidiaries, including Star Energy, Miaoli Wind, TCC Green Energy, Star Wind, Star Solar, and Shin Kuang Electric Energy have established their comprehensive internal control systems that contain the five key elements. They also completed the internal control self-assessment activities by the end of 2023.

Implement Internal Control Self-Assessment

Every year, the Company initiates the annual self-assessment of internal control system in November. Each department will evaluate the effectiveness of the system's design and implementation according to each of its operating procedures. The status of the operation would be recorded, with required supporting materials attached. The result of the self-assessment and the department-level internal control declarations are then submitted to the Internal Auditing Office for review. Each department could review current processes through the self-assessment results and revise the internal control system accordingly. Based on the result of the Company's internal control self-assessment for 2023, no significant deficiencies were found.

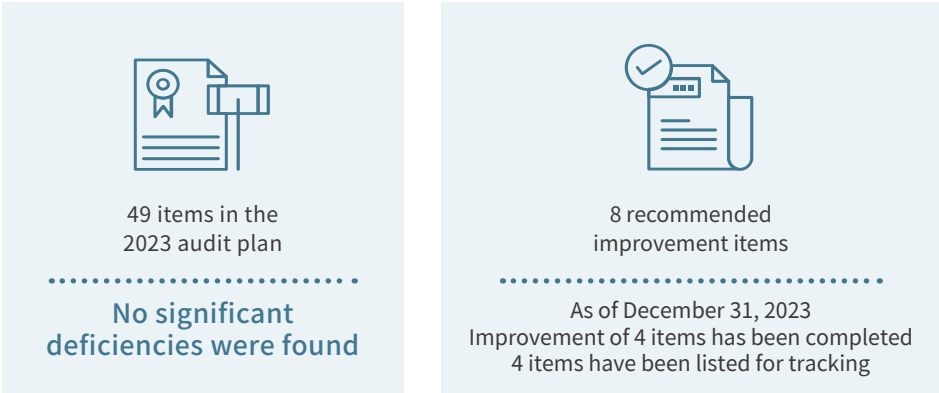
Since 2019, in order to motivate all departments to continuously improve and internalize their internal control self-assessment, the department with the best results would be selected and given substantial rewards. Currently, the evaluation indicators include "detailed description (including data, improvement of faults, etc.)", "data supporting materials", "whether there is division of work within the department", and "supervisor's score", encouraging employees to put forward the benefits of implementing and executing internal controls, as well as to self-identify shortcomings and provide improvement suggestions.

Perform Internal Audits

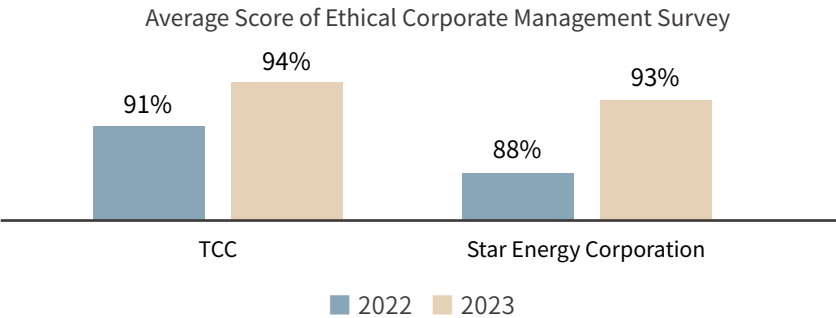
The Internal Audit Office of the Company carries out regular and special audits to assist the Board of Directors and Managers in inspecting and reviewing defects in the internal control systems, as well as measuring operational effectiveness and efficiency. The Internal Audit Office shall also make timely recommendations to improve and sustain the effectiveness of the systems, providing an important basis for review and correction.

The Internal Audit Office conducts a comprehensive risk assessment with reference to the Company's annual risk management plan, items of concern by the regulatory authorities, directors, and senior management, the feedback from audit operations, and items that have not been audited for a long period of time. The Office formulates an audit plan for the following year, which is then submitted to the Audit Committee for review. After the approval from the Board of Directors, regular audits are then carried out, and project-based audits are also conducted according to actual needs.

Each audit report throughout the year has been submitted for review by the independent directors of the Audit Committee as required. No significant deficiencies were found this year. Recommendations for improvements are tracked by the Internal Audit Office until they have been addressed by the responsible departments. These recommendations are summarized and submitted to the Audit Committee and the Board of Directors for review in May and November of each year, after which the tracking is concluded.



Approved by the Board of Directors, the integrity and ethical values audits for the Company and its subsidiaries are conducted anonymously via a questionnaire survey that contains important provisions such as the Company's "Ethical Corporate Management Principles", "Regulations for the Reporting of Integrity Violation", and "Procedures for Ethical Management and Guidelines for Conduct". The average scores for TCC and Star Energy both improved.



CHAPTER 2

Stable and Reliable Green Electricity Partner



2.1 A New Direction for Energy Transition

2.2 Reliable Green Electricity Expert

2.3 High Quality Customer Service

2.4 Sustainable Supply Chain



Material Topics

- Electricity Policy Evaluation and Response
- Renewable Energy Development
- Supply Stability and Reliability

✦ The cumulative renewable energy sold exceeded **460 GWh**

✦ Three invested gas-fired power plants sold **11,120 GWh** of electricity

✦ Green procurement reached **NT\$450 million**

Goals



Formulate Strategy for Corporate Operation

- Adjust operation strategies in response to international energy trends and government policies

Expand into Diverse Electricity Markets

Develop Renewable Energy

2027

- Cumulative investment in renewable energy installed capacity reaches **315 MW**

2024

- Renewable energy electricity retailing reaches **192 GWh**
- Obtain construction permit for a **33.6 MW** onshore wind power project
- Obtain establishment permit for a **45.95 MW** solar photovoltaic power electricity enterprise

Performance

Guan Tian Cogeneration Plant

- customer satisfaction score: **95.6**
- Annual operational reliability: **96.07%**

Solar Photovoltaic Power

- Power generation in 2023 exceeded **41.31 GWh**
- Secured the bid for the **13.2 MW** Wushantou Reservoir Floating Solar Photovoltaic Power Phase II project
- Integrated **120 MW** from Tainan Qigu Photovoltaic Power Plant's joint booster station into the grid



Renewable Energy Electricity Retailing

- Cumulative renewable energy electricity retailing reached **460 GWh**

Wind Power

- Power generation exceeded **118.21 GWh** in 2023
- Carried out O&M for **116** wind turbines
- Obtained establishment permit for a **37.8 MW** onshore wind power electricity enterprise

Sustainable Supply Chain

- Received the 2023 **Green Procurement Award**
- Green procurement reached **NT\$450 million**
- Corporate Social Responsibility Commitment signing rate: **95%**
- Self-assessment questionnaire response rate: **91.3%**



2.1 A New Direction for Energy Transition

Domestic Policies and Markets

The principles of Taiwan's energy transition planning are based on "reducing coal-fired, increasing natural gas, promoting green energy, and achieving nuclear-free". In the short term, the goal is to achieve "low carbon", which includes increasing the share of natural gas and reducing the use of coal, while also strengthening the research and development (R&D) of renewable technology. The target is for renewable energy to reach 20% of electricity generation by 2025, with solar photovoltaics already capable of meeting peak daytime load demands, leading to a steady increase in the share of renewable energy. In the long term, the focus will be on high-efficiency photovoltaic and wind power technology to alleviate the pressure on thermal power plants. This will be complemented with emergence of energy storage, carbon capture, utilization, and storage (CCUS), and hydrogen power generation. Aligned with the Climate Change Response Act, these actions will drive the domestic energy industry toward the goal of "zero carbon", achieving the long-term reduction target of net-zero emissions by 2050.

In response to the energy transition policies, independent gas-fired power plants continue to play an important role in the electricity market. Taiwan Power Company (Taipower) has announced its power procurement plan for commercial operation of gas-fired units from 2025 to 2028, and the estimated total procurement capacity limit is 7.7 GW. It is expected that potential opportunities will be available for both the renewal and expansion of existing independent gas-fired power plants, as well as the investment and development of new power plants in the future.

In terms of renewable energy, the government has not only ensured a stable 20-year return for investors through feed-in tariffs, but also opened the green electricity trading market following the amendment of the Electricity Act in 2017. In 2020, the Renewable Energy Development Act was revised to mandate that energy-heavy industries must install renewable energy, energy storage facilities or use green electricity. Driven by global sustainability issues and net-zero targets, corporate demand for renewable energy has significantly increased, leading to the flourishing development of related businesses, including investment and development, engineering project contracting, operation and maintenance (O&M), and renewable energy retailing. As of the end of 2023, the installed capacity of renewable energy in Taiwan has reached 17,085.5 MW, accounting for 30.8% of the nation's total installed capacity.

Due to the intermittency and uncertainty of renewable energy, as the amount of renewable energy connected to the grid gradually increases, traditional gas-fired units will need to be dispatched along with renewable energy. This will also require more energy storage equipment to balance the differences between peak and off-peak electricity generation and consumption. In the electricity market, the Energy Trading Platform (ETP) will open up more trading items according to dispatch needs, and the demand for ancillary services will gradually increase. There will be more opportunities for application and business development in resources such as self-use power generation equipment, energy storage, demand response, and virtual power plants (VPP).

Advantages/Disadvantages of TCC's Development and Responses

Advantages

- ▶ The policies of reducing coal-fired and increasing natural gas, along with air pollution improvement in winter, increase the dispatch opportunities for the invested gas-fired power plants.
- ▶ The government's green energy policies and global carbon reduction trends support the development of the Company's renewable energy business.
- ▶ The high technical difficulty of developing large-scale projects gives the Company a competitive advantage due to its expertise in electricity.
- ▶ The increasing activity of the ETP for ancillary services and the number of products will benefit the Company's resource investment and participation.
- ▶ The increasing demand for offshore wind power O&M, and the government's policy to promote the localization of the domestic wind industry will benefit the development of O&M business.
- ▶ Combining AI technology with professional O&M techniques will enhance the efficiency of renewable energy O&M work and reduce costs.
- ▶ The business scope includes power industry investment and development, engineering and construction, O&M, green electricity retailing, and ETP trading, providing comprehensive services.

Disadvantages

- ▶ The gradual increase in the amount of renewable energy connected to the grid affects the dispatch mode of the invested gas-fired power plants, resulting in changes in the number of start-ups and shutdowns or the percentage of full load, which impacts power generation efficiency.
- ▶ The future direction of the invested gas-fired power plants is uncertain due to the lack of confirmed extension plans for Power Purchase Agreements (PPAs) after their expiration.
- ▶ Large fluctuations in international fuel prices increase the operational risks for the invested gas-fired power plants and cogeneration plants.
- ▶ Stricter environmental regulations and the additional costs of carbon fees increase the investment required for environmental protection equipment, which impacts the operation of cogeneration plants.
- ▶ Domestic and international companies continue to enter the electric power sector through renewable energy investment, green electricity retailing, and energy storage systems, leading to intensified competition.

Responses:

- 1  Continuously assess the supply and demand potential of the energy storage market and carefully choose the timing to enter the market.
- 2  Integrate the Group's renewable energy resources and electric power expertise to provide customers with diverse and reliable green electricity services.
- 3  Actively seek multiple communication channels to encourage relevant authorities to support and advance the establishment of power plants.
- 4  Analyze potential scenarios for future decommissioning of power plants in advance to ensure timely responses to changes in government policies.
- 5  Closely monitor fluctuations in foreign exchange and energy markets, to minimize potential risks.
- 6  Keep track of Taipower's grid capacity and maintain close communication with Taipower, while actively manage risks with a solid financial foundation.
- 7  Increase the revenue of the Guan Tian Cogeneration Plant by actively search for new steam users, comprehensively evaluate the cost-effectiveness of surplus electricity retailing and participate in the electric power market. Additionally, we upgrade environmental protection and power plant equipment to meet environmental regulations and emission standards, improve unit efficiency, and evaluate cogeneration plants' potential of low-carbon transition or integration of energy and resources.

2.2 Reliable Green Electricity Expert

With the global emphasis on "net zero" and "sustainability", renewable energy has become a focal point for energy development worldwide. To achieve net-zero emissions, the demand for green electricity across industries has been growing continuously. In response, Taiwan is expanding its deployment of renewable energy through government promotion. TCC is fully committed to the development of renewable energy, with focusing on environmental protection, sustainability, and energy conservation, and becoming the first company in Taiwan to offer comprehensive services that include renewable energy investment and development, engineering project contracting, O&M, and electricity retailing. In terms of investment and development, TCC is fully engaged in the development of solar photovoltaic power, wind power, and geothermal power projects. With regard to construction, TCC's subsidiary Star Energy is actively involved in solar photovoltaic and wind power EPC projects and strives to secure the EPC projects of offshore wind power transmission & transformation, as well as solar photovoltaic ultra-high-voltage booster stations. As to O&M, TCC continues to cultivate its expertise in renewable energy O&M through extensive O&M experiences from Star Energy. Furthermore, TCC Green Energy, another subsidiary which began the renewable energy retailing in 2020, has sold over 460 GWh of green energy as of the end of 2023, resulting in a carbon reduction of over 200,000 metric tons. Regarding ancillary services, the Company achieved a 100% bid success rate in 2023, securing 1,982 hours of awarded time.



Digital Transformation of Green Electricity Services

With the development of emerging technologies, the application of digital tools to improve existing business processes can significantly enhance operational efficiency, saving both time and labor. In our photovoltaic projects, we use drone technology for O&M tasks. Drones equipped with visible light cameras and infrared thermal imaging devices can perform aerial inspections of photovoltaic modules, allowing for early detection of damaged modules or thermal anomalies. O&M personnel can then review the images, determine the cause of any abnormalities, and carry out subsequent repairs in time. This approach can greatly reduce the time cost on manual visual inspections and lower the risk of workplace safety incidents. RTK systems (Real-Time Kinematic positioning technology) are introduced into various photovoltaic projects, along with automated trajectory navigation systems; this allows for precise identification of abnormal module locations, which significantly reduces the time and labor required for inspections. In wind power projects, drones equipped with high-resolution cameras are used to monitor equipment inaccessible to personnel, such as blades and nacelles. By monitoring the status of equipment and determining if maintenance work is needed, preventive maintenance can be conducted to ensure the consistent operation of the units.

In addition to the aforementioned application in O&M tasks, a real-time monitoring system is to be implemented. When alerted, the system will provide detailed information on potential issues and damaged parts, and assess the components that may need replacement. This approach aims to reduce the risk of human error in judgment and minimize the chances of bringing incorrect materials. The data accessed by the monitoring center can also be combined with environmental and meteorological information as an important reference for predicting power generation and dispatching electricity in the future. This will be complemented by an upgrade on the renewable energy retailing simulation matching model and the integration of an electronic billing system for green electricity users, digitally optimize the development of renewable energy generation and retailing information. Additionally, augmented reality (AR) technology will be introduced and integrated into substation O&M work, transitioning from the old manual paper-based meter reading method to digital imaging and automatic logging. This system will simultaneously display potential abnormalities and the corresponding solutions, enhancing operational efficiency and performance.

2.2.1 Solar Photovoltaic Power

With regard to the investment and development of solar photovoltaic power, TCC possess the professional capability to perform vertical integration, from organization, construction and installation to O&M. We have engaged in various types of solar photovoltaic projects, including rooftop photovoltaic, floating photovoltaic, and ground-mounted photovoltaic projects. The TCC Group developed and constructed the Wushantou Reservoir floating photovoltaic power plant with an installed capacity of 13.7 MW. Completed in May 2022, the total electricity generation has exceeded 18.5 GWh by 2023. In addition to regular monitoring and maintenance of the photovoltaic system, to ensure water quality safety, a third-party organization has been commissioned to conduct water sampling and testing in both internal and external water areas of the project site. All test results have met quality standards. In February 2023, we obtained the development permit for the Wushantou Reservoir Floating Photovoltaic Power Phase II project. The planned total installed capacity is approximately 13.2 MW, which is expected to increase electricity generation by 18 GWh annually. Following grid integration of the Wushantou Reservoir Photovoltaic Power Plant, onsite maintenance has been carried out by the O&M personnel of Star Energy. Through real-time monitoring systems and operational analysis, a comprehensive inspection and patrol mechanism was established. Additionally, preventive maintenance was implemented to prevent unexpected power loss. These measures ensure the overall stable and safe operation of the plant, and thus enhance the system's power generation efficiency.

Aerial view of the completed Phase I project





Aerial view of the module assembly area



Main Transformer



161kV GIS

The development of solar photovoltaics requires extensive land, often located in remote areas with low grid density. This necessitates the construction of transmission lines that can span tens of kilometers to connect to the grid system, resulting in high costs for developers. To address the issue of insufficient feeder capacity in solar photovoltaic grid-connected hot zones, TCC Group has aligned with national policies by investing in and establishing joint booster stations for solar photovoltaic power. In Qigu District, Tainan City, TCC is promoting the installation of a joint booster station with a grid connection capacity of 240 MW, of which 120 MW was connected to the grid and began commercial operation in November 2023. This effectively resolve the grid connection issues in photovoltaic hot zones, continuously supporting the Taiwan's renewable energy development goals.

In addition to ensuring the operation of the grid-connected photovoltaic projects through professional O&M, the Company is also actively expanding into new solar photovoltaic projects, such as aquavoltaic (fishery and electricity symbiosis) and agrivoltaic (agriculture and electricity symbiosis) projects that better utilize land value. TCC's subsidiary, Hamaguri Co., Ltd., responded to the government's aquavoltaic policy, and has been promoting the development of fishery and electricity symbiosis in fishponds within the designated area in Changhua County. In December 2022, Hamaguri Co., Ltd. was selected and obtained development permits for a land area of 39.8 hectares, with a planned installed capacity of approximately 32 MW. With 30 years of expertise in the power industry, the Company collaborates with professional aquaculture teams and integrated local aquaculture practices to create a win-win situation that balances local development, green electricity, aquaculture, and ecological conservation. Moving forward with solar photovoltaic development, the Company will adhere to the principles of dual land use, local co-prosperity, and ecological coexistence, taking a step toward sustainable energy and sustainable communities.



Aerial view of the fishponds

2.2.2 Wind Power

In terms of onshore wind power, the Company has invested in Miaoli Wind, which includes Zhunan Wind Farm and Dapeng Wind Farm. The total installed capacity of the onshore wind turbines is 49.8 MW, and the power generation was approximately 100 GWh in 2023. Considering that the turbines have been in operation for over 17 years, we have initiated the procedures for a wind turbine renovation and reconstruction project to improve operational efficiency and continue utilizing the excellent wind resources in Miaoli. Currently, four turbines have passed the environmental impact assessment, with a planned installed capacity of approximately 16.8 MW and an annual generation of approximately 42 GWh. Star Wind has set up onshore wind turbines with a total installed capacity of 10.35 MW in Fangyuan, Changhua. Through TCC Green Energy, a long-term renewable energy purchase and sale agreement was signed with domestic companies to sell approximately 28.5 GWh of green electricity annually. Considering how well the wind conditions are in the area, we are planning to build 8 new turbines with a total capacity of approximately 33.6 MW and an annual green electricity generation of about 84 GWh, providing clean electricity for the domestic market. Additionally, in collaboration with local enterprises in Changhua, Star Wind is planning to develop onshore wind power at Yongxing tidal flat in Fangyuan, further expanding the domestic green electricity supply.

Taiwan is densely populated with limited areas, special attention to environmental impacts is required when developing onshore wind power. The Company is committed to promote renewable energy while also protecting the local environment. During the development and environmental impact assessment process, we examine the impacts on various aspects such as the environment, ecology, landscape, socioeconomics, traffic as well as culture, and propose relevant environmental protection measures. For ecological aspects, we formulate avoidance, minimization, mitigation, and compensation measures, including reducing the scope and number of turbines, increasing monitoring frequency combined with mitigation mechanisms, and conducting conservation of nearby habitats to protect the local ecological environment. Additionally, for all levels of plans and major construction projects related to wind power, we conduct impact risk assessments on surrounding areas, carefully planning in the early stages to minimize local impacts as much as possible.

Moreover, Star Energy had an outstanding performance in wind power O&M projects in 2023. Aside from securing a 5-year O&M contract for 86 wind turbines from Taipower, Star Energy continued to undertake warranty O&M work for 2 onshore wind turbines (7.2 MW) of Taiwan Cement Corporation Green Energy. Including the wind turbines at the Group's own project sites, Star Energy is responsible for the O&M of a total of 116 wind turbines domestically. This makes Star Energy the most experienced and professional wind turbine O&M company in Taiwan, and its expertise and enthusiastic service are widely recognized by customers.

In addition, to align itself with the government's promotion of renewable energy policies and to participate in the future O&M of offshore wind farms, the Company has undertaken the construction of the onshore substation for the Ørsted Offshore Wind Farm CHW 2204 project, and established a Renewable Energy O&M Center in the Changhua Coastal Industrial Park as well. The center can provide more comprehensive renewable energy O&M services, ensuring the localization of O&M technologies and expanding business opportunities in this sector.



Wind turbines of Star Wind



Wind turbines of Miaoli Wind

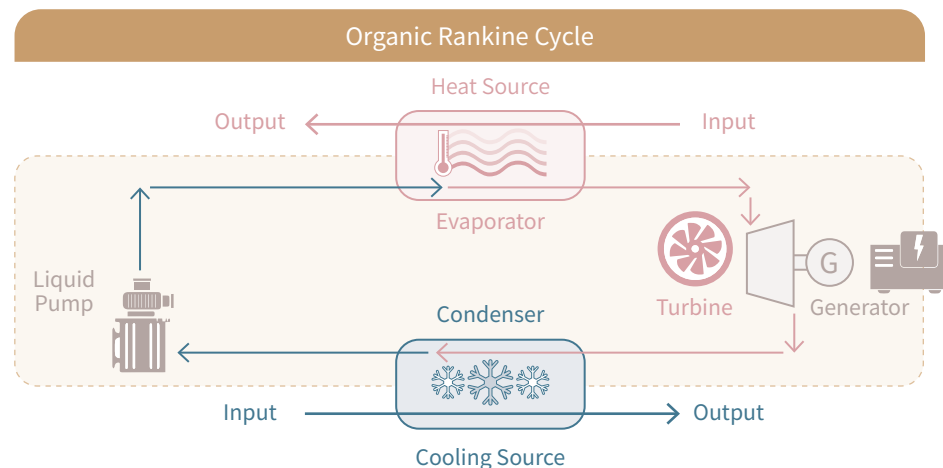
2.2.3 Geothermal Power

The Company signed a Build-Operate-Transfer (BOT) contract with the Yilan County Government in 2017 through its subsidiary, Yi Yuan, for the establishment of the Chingshuei Geothermal Power Plant, with a total installed capacity of 4.2 MW. The power plant began to operate at a commercial level in October 2021. It is the first independent geothermal power plant in Taiwan, as well as the first domestic geothermal power plant with a capacity over 1 MW.



Chingshuei Geothermal Power Plant

The Chingshuei Geothermal Power Plant utilizes high-temperature geothermal fluids extracted from deep underground, ranging from 900 meters to 3,000 meters. The power generation is based on the principle of Organic Rankine Cycle heat exchange. After the power generation process, the geothermal brine (tail water) is transported through pipelines to reinjection wells and pumped back underground. The entire power generation process operates with a "heat extraction without water extraction" approach, resulting in minimal water consumption during the operation. The Chingshuei Geothermal Power Plant effectively utilizes local non-polluting geothermal resources to generate electricity, which can be directly supplied to the Sanxing and Datong areas. By July 2023, the total electricity generation had exceeded 38.25 GWh. Since its commissioning, the plant has provided stable and reliable power, achieving an availability rate of 95.5%. In June 2023, the plant completed its second annual maintenance, during which scale removal operations were conducted on the inner walls of the two geothermal wells at the site. This work aimed to revitalize the geothermal wells' productivity, maintaining the efficiency of the heat source supply and the power generation capacity.



Awarded the 2023 Excellence in City Governance Award - Economic Growth Category.

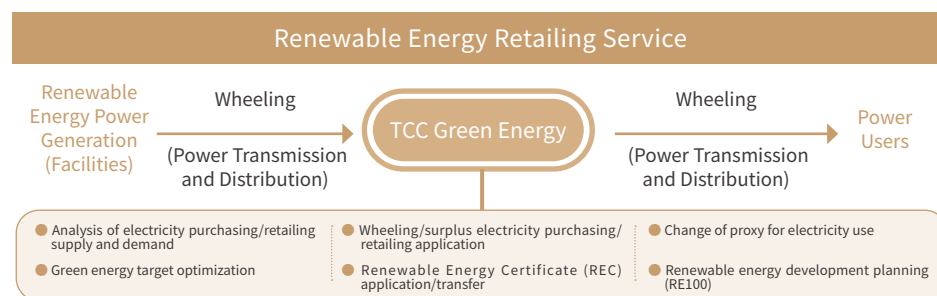


The Chingshuei Geothermal Power Plant - BOT Pioneer Project, a collaboration between the power plant and the Yilan County Government, successfully revitalized the Chingshuei Geothermal Power Plant through a public-private partnership. This project became the first successful geothermal power plant developed through the BOT contract. It was also awarded the "Excellence in City Governance Award - Economic Growth Category" by Commonwealth Magazine in 2023.



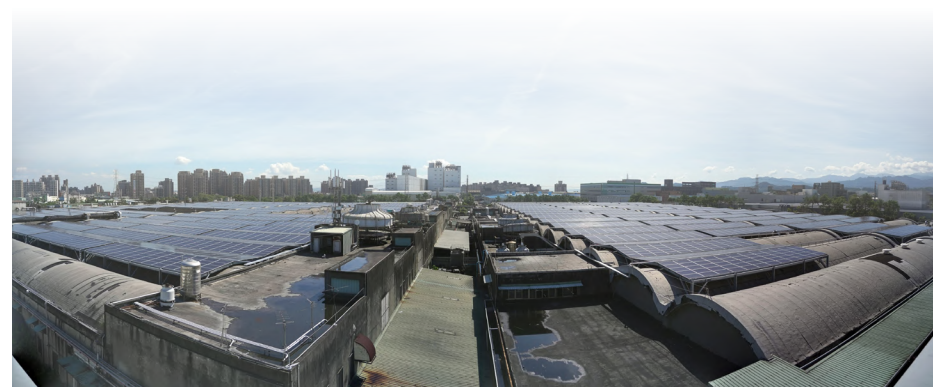
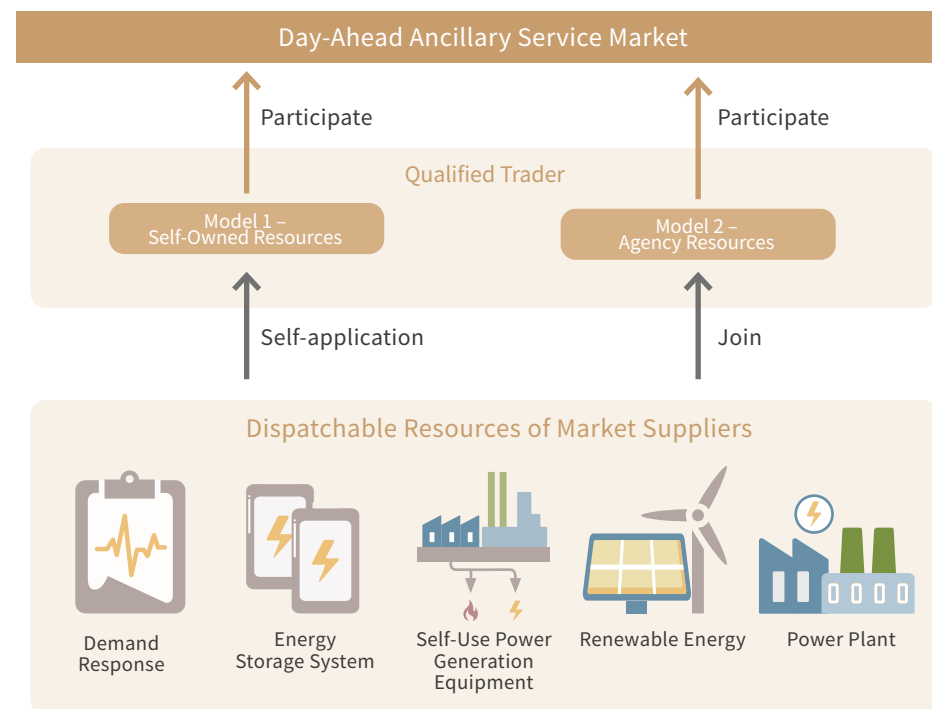
2.2.4 Integration of Renewable Energy Value Chain

Combining the Group's expertise in electricity and the insights that we have developed through long-term experience in the energy market, TCC analyzes the energy consumption patterns of different customers, and provides the most appropriate green electricity plan to maximize profits. Our customers range from foundations to industries in semiconductor, financial, communication, consulting service, electronics, retail in clothing, steel manufacturing, medical supplies manufacturing and plastic products manufacturing. As of the end of 2023, cumulative electricity retailing has exceeded 460 GWh.



In recent years, in order to maintain the safe and stable operation of the power system, or to restore the system to normal after an accident, Taipower has actively encouraged various electricity enterprises and independent power plants to participate in ancillary services, as private enterprises are able to bid openly on the ETP. In view of this, TCC has obtained 10 ETP Expertise Certificates. In April 2022, TCC utilized its Guan Tian Plant as an operating resource and officially participated in the ancillary service market for supplementary reserve bidding. TCC reviewed pricing strategies with its consultant team on a regular basis, to improve the bidding success rate and dispatch execution rate. In August 2022, the Guan Tian Plant suspended bidding on the ETP due to its participation in the "Qualified Cogeneration Power Purchase Program", but resumed participation in mid-July 2023. In 2023, the actual bidding success rate was 100%, with a total of 1,982 awarded hours.

In addition, to utilize internal resources and facilities within the Group, we are also working on the introduction of external resources (e.g. self-use power generation equipment, qualified cogeneration plants, energy storage systems, and more). This initiative aims to strengthen the expansion of the Group's future renewable energy value chain.



2.3 High Quality Customer Service

Attentiveness, Diligence, Professional Team, Enthusiastic Service

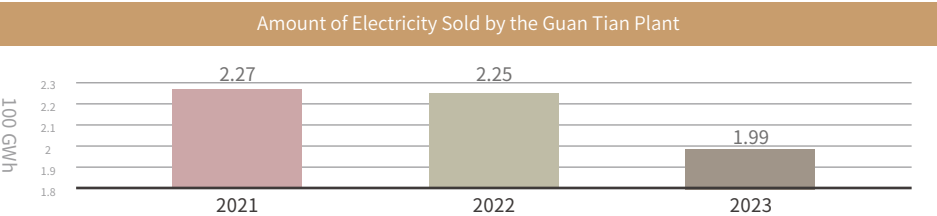
Since its establishment, TCC has adhered to its quality policy of "Attentiveness, Diligence, Professional Team, and Enthusiastic Service", and strictly requires its employees to follow the quality management system, improves the quality of products and project services, as well constantly strives for excellence. Externally, the Company strengthens its communication with customers and makes customer needs its guiding principle, achieving the highest quality customer service.

TCC's main products and services are steam and electricity from cogeneration plants, as well as vertically integrated services related to the power industry, including gas-fired power plants, renewable energy, and transmission and transformation projects. These services cover investment and development, engineering project construction, and O&M, all of which follow the P-D-C-A (Plan-Do-Check-Act) cycle. TCC's headquarters, the Guan Tian Plant, and Star Energy have all obtained ISO 9001:2015 quality management system certification, ensuring highly reliable products and engineering service quality for customers, and demonstrating our commitment to product and service quality.

2.3.1 Stable Power Supply

Considering the growing demands from the semiconductor industry, despite the impact of international situations and the slowdown of economic growth, the peak load over the next 5 years is estimated to grow by approximately 2.04%. In addition, due to the highly intermittent nature of power generation from renewable energy sources, gas-fired power plants and cogeneration plants will continue to play a crucial role in maintaining grid stability.

TCC's Guan Tian Plant was invested, constructed and maintained by TCC. It underwent commercial operation in 2000 and has been providing stable power supply for over 20 years. The plant serves eight customers in the Guantian Industrial Park and continues to develop new customers. In addition to improving energy efficiency in the area, the plant also helps alleviate regional power supply loads.

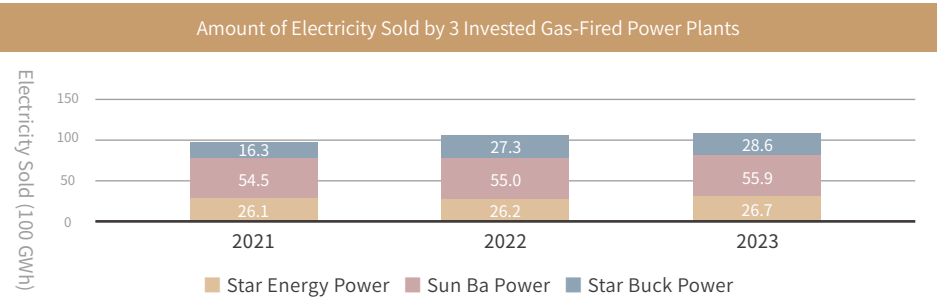


Note: In 2023, due to the high prices of coal, low delivery volumes of alternative fuels, and low electricity purchase prices, the power plant primarily operated at a low loading. As a result, the annual electricity sales were lower compared to previous years.

Utilizing high-efficiency and low-pollution power generation methods to provide stable power supply and serve electricity users has been TCC's mission since its establishment. The following list shows the cogeneration plants and gas-fired power plants invested by TCC, or with TCC as its largest shareholder.

Name	Installed Capacity	Type
Guan Tian Cogeneration Plant	48 MW	Coal-fired circulating fluidized bed boiler and steam turbine generator unit
Chang Bin Gas-Fired Power Plant of Star Energy Power	506.9 MW	1 unit of gas-fired multi-shaft combined cycle generator
Fong Der Gas-Fired Power Plant of Sun Ba Power	1,013.7 MW	2 units of gas-fired multi-shaft combined cycle generator
Star Buck Gas-Fired Power Plant of Star Buck Power	490 MW	1 unit of gas-fired multi-shaft combined cycle generator

In 2023, three gas-fired power plants invested by TCC sold a total of approximately 11,120 GWh of electricity to Taipower. The amount of electricity sold has increased and reached new heights every year. The partial replacement of some coal-fired power generation units by gas-fired power generation units could reduce total domestic air pollution emissions, demonstrating the efforts and achievements of TCC Group to stabilize domestic power supply and provide low-carbon energy.



Operational Reliability

Stable operation is the primary concern of power plants. Reported incidents of power supply shortage in the past were often caused by failures of boiler tube or unit malfunctions in the power plant that led to emergency stop, resulting in the reduction of estimated percent operating reserve by 2–3%. The power supply signal would change from yellow to red light alert, symbolizing the warning of power limitation. This indicated that under the condition of a tight power supply, the operation status of any unit may affect the overall power supply in Taiwan.

To maintain stable power and steam supply for customers, the Guan Tian Plant has a management mechanism based on the following three aspects: maintenance, emergency response, as well as operation and system design. All aspects have detailed work procedures and standardized quality manuals. Employee education, training, drills and other activities are carried out regularly to ensure that all personnel in the plant are familiar with and follow relevant procedures.

Guan Tian Plant Operation Reliability Management Mechanism

Management Mechanism	
Equipment Maintenance	Daily Maintenance
	Annual Overhaul
Equipment Failure Emergency Response	Equipment Failure Emergency Response
	Accident Emergency Response
Operation and System Reliability	Daily Operation
	Dual Loop Power Supply Design

In 2023, the operational reliability management mechanism of TCC's Guan Tian Plant was highly effective, demonstrating excellent operational technology and unit stability.

2023		From December 2000 to the end of 2023		
Operational Reliability: 96.07%	Actual Operating Hours in 2023: 7,946.97 hours	Cumulative Operating Hours: 189,000 hours	Average Annual Normal Operating Hours: 8,200+ hours (minus about 20 days of annual overhaul)	No Equipment Failure Over the Past Several Years

Average Duration of Power Outage

A power supplier must be able to provide continuous and uninterrupted power upon demand. If a trip or failure does occur, it should be able to deal with the problem quickly and restore the power supply. The average duration of power outage in the form refers to the average duration of service outage experienced by users of each power plant.

	2023				
	TCC (Guan Tian Plant)	Star Energy Power	Sun Ba Power	Star Buck Power	Total
Number of Users	4	1	1	1	7
Total Duration of Power Outage from All Users (minutes)	0	1,112	0	2,328	3,440
Average Duration of Power Outage per User (minutes)	0	1,112	0	2,328	491

	2022				
	TCC (Guan Tian Plant)	Star Energy Power	Sun Ba Power	Star Buck Power	Total
Number of Users	4	1	1	1	7
Total Duration of Power Outage from All Users (minutes)	0	0	19	127,201	127,220
Average Duration of Power Outage per User (minutes)	0	0	19	127,201	18,174

	2021				
	TCC (Guan Tian Plant)	Star Energy Power	Sun Ba Power	Star Buck Power	Total
Number of Users	4	1	1	1	7
Total Duration of Power Outage from All Users (minutes)	27	0	105	315,508	315,640
Average Duration of Power Outage per User (minutes)	6.75	0	105	315,508	45,091

Frequency of Power Outage

The average power outage frequency refers to the average number of service outages experienced by users of each power plant.

	2021				
	TCC (Guan Tian Plant)	Star Energy Power	Sun Ba Power	Star Buck Power	Total
Number of Users	4	1	1	1	7
Total Number of Power Outage Events from All Users (No. of times)	0	4	0	3	7
Average Power Outage Frequency per User (No. of times/user)	0	4	0	3	1
	2022				
	TCC (Guan Tian Plant)	Star Energy Power	Sun Ba Power	Star Buck Power	Total
Number of Users	4	1	1	1	7
Total Number of Power Outage Events from All Users (No. of times)	0	0	4	5	9
Average Power Outage Frequency per User (No. of times/user)	0	0	4	5	1
	2021				
	TCC (Guan Tian Plant)	Star Energy Power	Sun Ba Power	Star Buck Power	Total
Number of Users	4	1	1	1	7
Total Number of Power Outage Events from All Users (No. of times)	3	0	1	3	7
Average Power Outage Frequency per User (No. of times/user)	1	0	1	3	1

Note: The average power outage frequency per user is the total number of power outage events from all users divided by the number of users, rounded to the nearest whole number.

	2023			
	TCC (Guan Tian Plant)	Star Energy Power	Sun Ba Power	Star Buck Power
System Average Interruption Duration Index (SAIDI)	0	1,112	0	2,328
System Average Interruption Frequency Index (SAIFI)	0	1	0	1
Customer Average Interruption Duration Index (CAIDI)	-	1,112	-	2,328

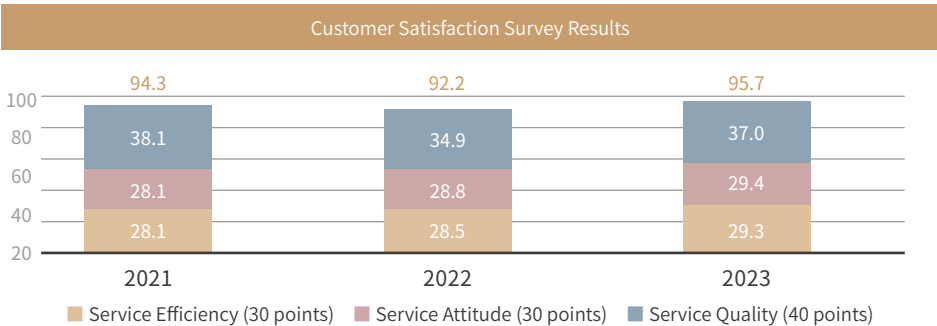
2.3.2 Meeting Customer Needs

Meeting customer needs and continuous improvement have always been the core values of TCC's operations. The Company's operational objective is to create maximum customer value, making customer demands and satisfaction the key performance indicators that we monitor actively.

Customer Satisfaction

TCC has formulated an operating procedure for its customer satisfaction survey, which includes an annual "satisfaction survey". This survey serves multiple purposes. First, it allows for the review and improvement of customer feedback, providing valuable insights for the Company's operational guidelines. Second, it helps understand customers' actual needs while facilitating the enhancement and elevation of service quality effectively. Based on the results in the past few years, our customers' satisfaction always meets the benchmark we set for ourselves.

The results of Guan Tian Plant's customer satisfaction survey for the past three years are shown in graph:



Note: The data above shows the average score of customer satisfaction surveys from eight customers.

In 2023, Star Energy demonstrated outstanding performance in engineering and technical services such as photovoltaic power generation system construction, electromechanical equipment installation, and wind farm O&M. The quality of the engineering, communication, coordination, and service attitude were highly praised by customers. Star Energy strives to maintain trust and commitments with customers, and we strictly adhere to contract regulations regarding customer data and privacy. The results of Star Energy's customer satisfaction survey for the past three years are shown in the following table:

	2021	2022	2023
Communication and Coordination (10 points)	9	9	9
Project Progress (30 points)	25	25	26
Project Quality (30 points)	26	26	27
Environment, Health and Safety (30 points)	25	26	27
Total (100 points)	85	86	89

Note: The data above represents the average score of customer satisfaction surveys from 6 customers in 2021, the average score of customer satisfaction surveys from 9 customers in 2022, and the average score of customer satisfaction surveys from 20 customers in 2023.

Looking forward, the installation of large-scale ground-mounted and floating solar photovoltaic systems, the construction and maintenance of onshore wind turbines, as well as the onshore substations for offshore wind farms will begin one after another. With a strong management team and a positive, diligent service attitude, TCC is committed to providing customers with the highest standard of engineering quality, achieving our 3 objectives: customer satisfaction, environmental protection, and corporate sustainability.

Customer Privacy and Complaint Handling

TCC values customers' opinions and conducts satisfaction survey every year. It has established a "Customer Complaint Handling Procedure", which outlines detailed procedures of receiving and analyzing customer complaints, devising strategies, and providing customers with feedback by the designated department. This ensures that customer opinions are effectively communicated and properly addressed, ultimately enhancing customer satisfaction.

As we enhance our customer services, we also attach great importance to intellectual property rights and the privacy of customer information. All personnel of related businesses should follow the rules of confidentiality. As a result, there was no violation of customer privacy rights, damages to customer rights due to data loss, nor customer complaints in 2023.

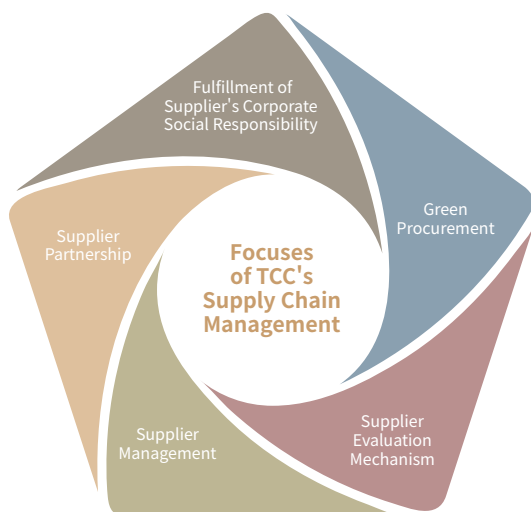


2.4 Sustainable Supply Chain

To build a sustainable supply chain, TCC maintains close relationships with its suppliers, aiming for mutual growth and creating win-win situations. Since 2016, the Company has updated its management practices annually, leveraging its influence to encourage suppliers to prioritize corporate social responsibility (CSR), implement green procurement initiatives, align with international sustainability trends, and drive a virtuous cycle within the supply chain to create a green supply chain ecosystem. Furthermore, TCC adopts a supply chain management approach that emphasizes quality and risk control. We carefully select partners, uphold the principles of integrity, honesty, commitment and responsibility, and establish a comprehensive "Supplier Management Evaluation Mechanism".

New Achievements in 2023

- 1.The amount of green procurement in 2023 reached NT\$450 million.
- 2.Continuously improve the Group's procurement management and material management systems, effectively simplifying processes and enhancing operational efficiency.
- 3.Ethical Corporate Management Principles were sent via email to promote compliance with ethical corporate management among all suppliers.

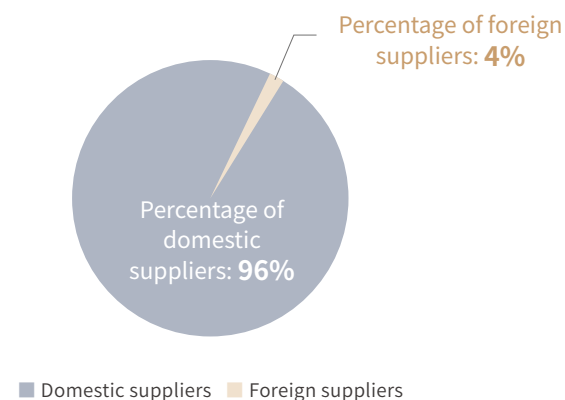


2.4.1 Good Supply Chain Partnership

TCC is well-aware that establishing partnerships with suppliers is an important basis to reduce operation costs, improve power generation efficiency and ensure a stable supply of fuel. Such partnership is essential to TCC's sustainable development; therefore, TCC continues its effort to establish a sustainable and competitive supply chain ecosystem, and is committed to maintaining long-term, good partnerships with high-quality suppliers around the globe, jointly creating a stable supply chain.

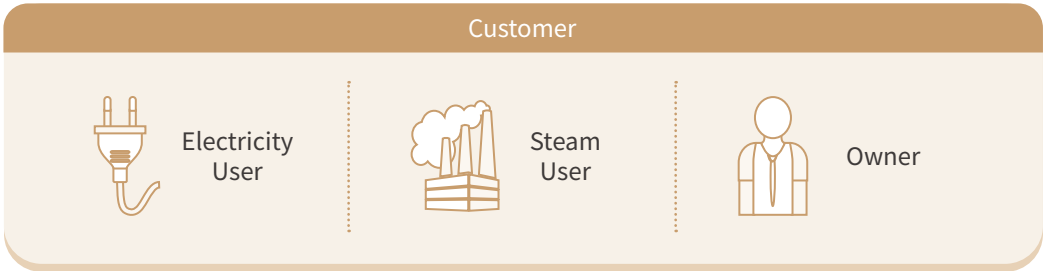
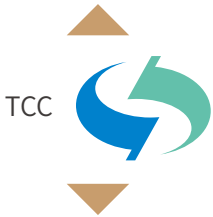
As of 2023, there were 2,903 suppliers registered in TCC Group's supplier database, of which 2,779 (accounting for 96%) were domestic suppliers, with an increase of 81 compared to that of 2022. There were 124 international suppliers in 2023 (accounting for 4%), most of whom provided maintenance and spare parts for foreign equipment. In recent years, renewable energy has developed rapidly in Taiwan, leading to an increasing number of domestic suppliers and businesses in the industry. TCC recognizes its responsibility to stimulate the industrial economy in Taiwan and actively contributes to this endeavor.

Percentage of Foreign/Domestic Suppliers in 2023

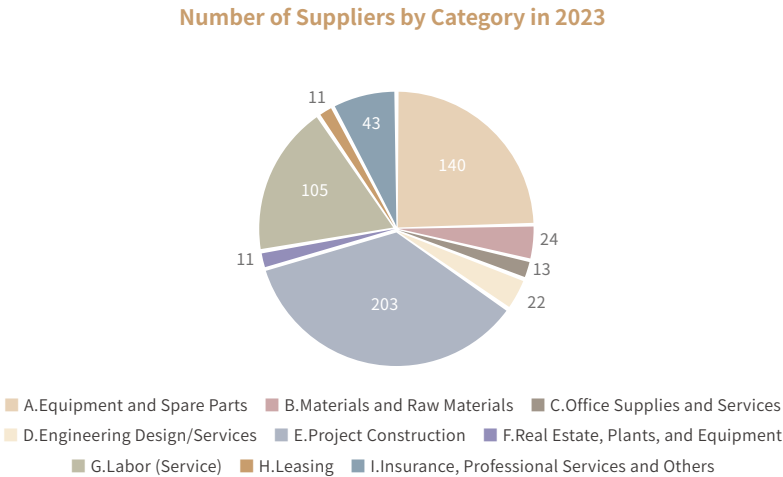
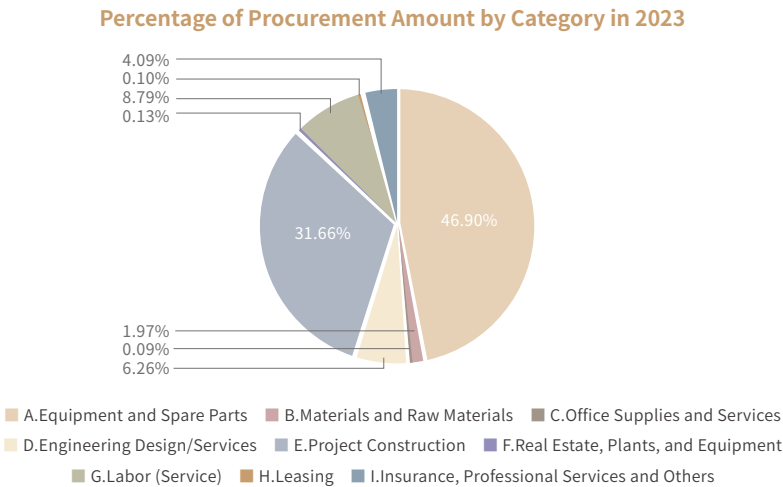


The Company's suppliers can be divided into nine categories as shown in the following figure.

Supplier	
Equipment and Spare Parts	Equipment, spare parts, components, and related hardware and software systems for company operations, project contracting, and power plant operations
Materials and Raw Materials	Raw materials, fuel, and related materials required for company operations, project contracting, and power plant operations
Office Supplies and Services	Office supplies, services, and miscellaneous purchases
Engineering Design/Services	Various types of design services
Project Construction	Various professional design tasks, feasibility studies, environmental impact assessments, and system impact analyses
Real Estate, Plants, and Equipment	Procurement of information equipment, transportation vehicles, office equipment, etc.
Labor (Service) Work	Labor-intensive work such as temp work, security, cleaning, technician services, etc.
Leasing	Leasing of offices, transportation vehicles, and multi-function printers
Insurance and Professional Services and Others	Insurance and professional services (such as accountants, lawyers), etc.

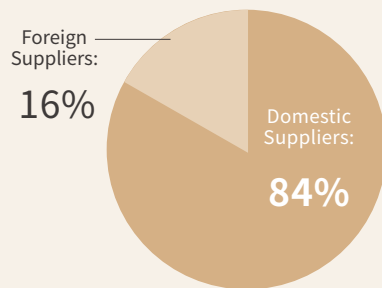


Number of suppliers by category and the corresponding percentage of procurement amount in 2023 are as follows:

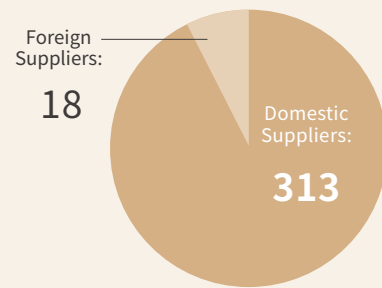


Number of domestic/foreign suppliers and the corresponding percentage of procurement amount in 2023 are as follows:

Percentage of Procurement Amount from
Domestic/Foreign Suppliers In 2023



Number of Domestic/Foreign Suppliers of
Procurement in 2023



2.4.2 Systematic Procurement Management and Material Management

The Group has implemented an electronic system for procurement, payment, and material management. This system integrates functions such as purchase requisition, procurement, acceptance check, payment requisition/payment, and material management, facilitating real-time information transmission and data consolidation. Through electronic connectivity, it streamlines various operational processes and incorporates electronic approval procedures based on authorized levels. The introduction of this system further deepens and enhances traditional management practices, reducing manual processes, optimizing workflow, and integrating various data elements. As a result, it lowers operating costs, enhances the internal data utilization value, and promotes transparency in management systems. This contributes to the improvement of overall efficiency within the Group.

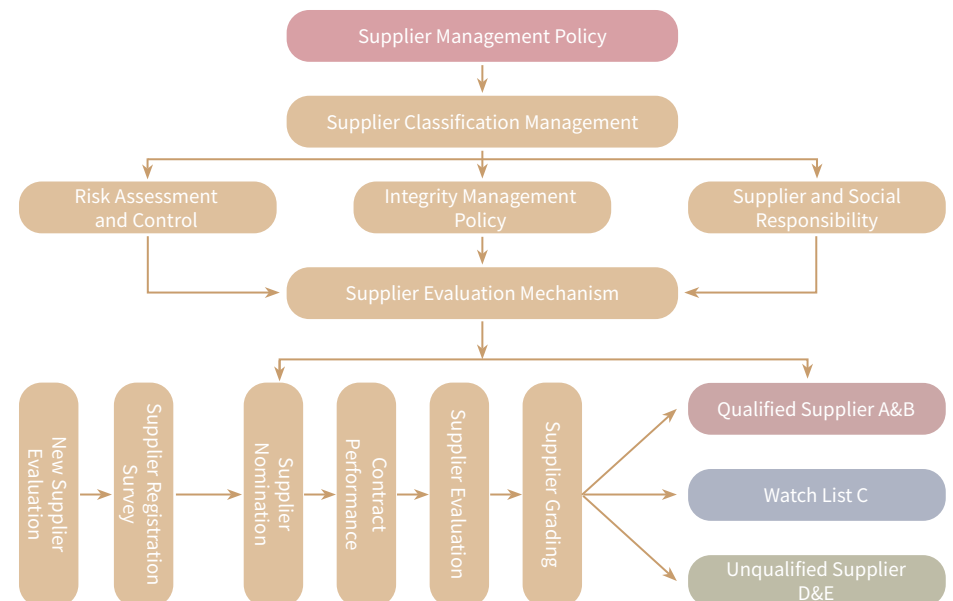


2.4.3 Comprehensive Supplier Management

For the procurement of equipment and materials, as well as the outsourcing of various projects, TCC carefully selects suppliers who demonstrate excellent performance in terms of cooperation, product quality, environmental considerations, workplace safety and cost-effectiveness. This ensures a stable supply for each power plant and meets operational requirements. All procurement-related processes are conducted in accordance with the relevant procurement procedures and authorization regulations stipulated by ISO 9001. These processes undergo verification by third-party organizations and internal audits. The Company upholds the principles of fairness and reasonableness in making procurement decisions.

TCC establishes clear provisions and terms within the procurement and engineering contracts with its suppliers, covering aspects such as product quality, delivery schedules, payment methods, penalties for delays, performance, and warranty responsibilities. The Company aims to establish a win-win model by fostering mutual assistance and growth with its suppliers.

Supplier Management Structure



To ensure that suppliers are well qualified, capable of completing projects on time and fulfilling their CSR, the purchasing unit issues a "New Supplier Review and Evaluation Form" and evaluates on suppliers who are participating in the procurement or outsourcing for the first time. The items of evaluation include financial status, contract performance capability, project (delivery) experience, corporate integrity, professional skills, "ISO 9001, 14001, 45001 verification", CSR commitment, environmental protection, as well as occupational safety and health. Only those with a score of 70 and above can participate in the procurement and outsourcing of TCC. In addition, to implement the human rights protection for migrant workers, the Company has added management regulations and evaluation for migrant workers to "New Supplier Review and Evaluation" and "Corporate Social Responsibility Commitment".

Implement Integrity Management Policy

In order to establish and implement integrity as a part of our corporate culture, and to prevent dishonesty, improper conduct or acceptance of improper benefits, TCC has established the following terms in the contract:

- 1.In the event of dishonest behavior, the contract may be terminated or rescinded unconditionally.
- 2.If one has received commissions, rebates, or other illegitimate benefits, he/she should immediately and truthfully report the action, provide relevant evidence, and cooperate with related parties for investigation.
- 3.If the Company suffers damage from such improper action, it may request compensation for damages.
- 4.Grievance Mechanism - whistleblowing procedure and channels are available.

Continuously Enhancing Supply Chain Sustainability Value

The Company adheres to the principle of integrity management and is committed to the sustainability value of the entire supply chain. Starting in 2023, we began sending an electronic version of the Ethical Corporate Management Principles to potential suppliers during the inquiry stage, along with a whistleblowing hotline and contact email. This ensures that all suppliers who interact with the Company understand our beliefs, and achieves comprehensive promotion of the Ethical Corporate Management Principles.

Supplier Evaluation Mechanism

To ensure quality and effective management, the purchasing unit and the procurement application unit conduct supplier evaluations after the completion of projects and services, and complete a "Supplier Evaluation Form" or "Construction Contractor Evaluation Form", which contains evaluation on reliability, price, quality and delivery. Each Supplier should also complete a CSR Commitment as a reference.

Based on the score of the supplier evaluation, suppliers are graded with A, B, C, D, or E. The criteria for the grading are described as follows:

Grade A	Grade B	Grade C	Grade D	Grade E
Score of 85 or above	Score of 70–84	Score of 60–69	Score of 51–59	Score of 50 or below
Regarded as qualified suppliers; given priority to participate in price negotiation	Regarded as qualified suppliers	On the watch list and will be re-evaluated after improvement; the period for evaluation is one year	Regarded as unqualified suppliers; not allowed to participate in the Company's procurement and contracting for three years	Regarded as unqualified suppliers; not allowed to participate in the Company's procurement and contracting for five years

The evaluation results for 2023 are as follows:

There are 418 qualified suppliers and 2 unqualified suppliers. As of 2023, 11 suppliers were suspended due to dishonesty and breach of contract.

Name	Number of Qualified Suppliers	Number of Unqualified Suppliers	Number of Suspended Suppliers as of the End of 2023
TCC (including the Guan Tian Plant and Miaoli Wind)	82	0	11
Star Energy	47	1	
Chang Bin Gas-Fired Power Plant of Star Energy Power	108	0	
Star Buck Gas-Fired Power Plant of Star Buck Power	68	0	
Fong Der Gas-Fired Power Plant of Sun Ba Power	113	1	

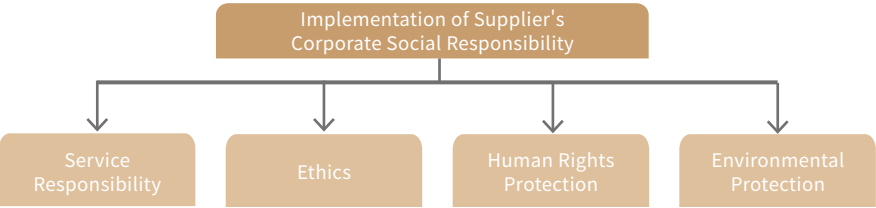
The supplier evaluation of TCC focuses on the constant strengthening of supplier management. There is still a relatively small number of suppliers that are listed as unqualified suppliers. If faults are found during the performance of the contract, suppliers are immediately required to carry out remediation, propose appropriate solutions, and provide clear goals and schedule for the improvement. If suppliers are unwilling to cooperate, the breach of contract mechanism will be activated immediately. Deduction of progress payment, balance payment, performance bond or the suspension of rights will be carried out to protect the Company's greatest rights and interests.

Key Items of Supplier Social Responsibility Assessment

- ▶ Material and raw material suppliers (coal and scrap tires)
 - To commit to the practice of sustainable development, suppliers of coal and scrap tires must sign relevant specifications including compliance with ethics, environmental protection, labor practices and social perspective.
 - In addition, suppliers of scrap tires are required to comply with the scrap tire recycling policy of the Ministry of Environment.
- ▶ Suppliers for equipment and spare parts, office supplies and services, engineering design/services, project construction, (real estate, plants and equipment), labor (services), leasing, insurance, professional services, and others
 - Suppliers shall comply with relevant specifications of ethics, environmental protection, labor practices and social aspects in accordance with the provisions of procurement specifications, bidding instructions, engineering specifications, drawings, technical documents, business terms or contractors' work safety and health management rules.
 - Procurement or project contracts clearly state that the supplier's employment of workers must comply with relevant government laws and regulations, including the "Labor Standards Act", "Occupational Safety and Health Act", "Labor Inspection Act", "Hazardous Work Place Review and Inspection Regulations", and their corresponding enforcements. The "Regulations on Safety and Health Requirements for Commencing Operations of Contracted Projects" stipulate that contractors must submit relevant insurance documents and information for employer's liability insurance with a minimum coverage of NT\$8 million for on-site operators during the contracting period before they can commence operations on-site.

Supplier's Corporate Social Responsibility Commitment

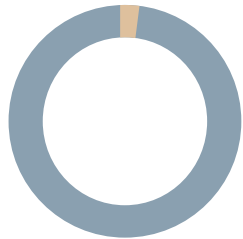
TCC is committed to protecting the environment and prioritizing social responsibility, labor rights, workplace safety and health, and promoting sustainable development in the supply chain. When implementing supplier management, the Company not only complies with relevant laws and regulations but also urges its suppliers to adhere to related codes of conduct. For example, strict measures are in place to prohibit the employment of child labor or any violation of human rights by the suppliers.



Since 2017, TCC has requested contracted suppliers to sign the "Corporate Social Responsibility Commitment". As of 2023, the signing rate reached 95%, meeting the set target. Looking into 2024, TCC aims to achieve a signing rate of over 95% for the supplier's CSR Commitment. We will adopt a more proactive approach and work collaboratively with our suppliers to contribute to environmental sustainability.

Percentage of Suppliers Signing CSR Commitment in 2023

42 Suppliers have not signed the CSR Commitment: 5%



793 Suppliers have signed the CSR Commitment: 95%

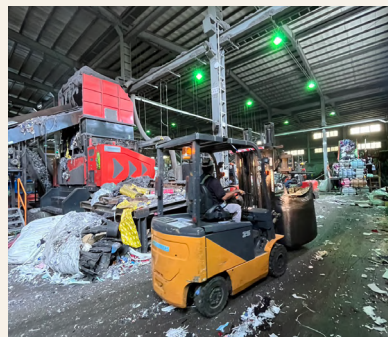
Summary of "Corporate Social Responsibility Commitment"

Service Responsibility	<ul style="list-style-type: none">• The procurement, project contracting business and services provided by suppliers shall comply with laws and international standards.• If there is any violation, TCC has the right to request for improvements or terminate the contract in accordance with the contract requirements.
Human Rights Protection	<ul style="list-style-type: none">• Suppliers must comply with labor laws and protect the human rights as well as the rights of their employees, including temporary workers, migrant workers, part-time employees, contract workers, and any other type of workers.• Suppliers shall comply with international labor rights, such as guaranteeing freedom of association and the rights of collective bargaining, caring for vulnerable groups, prohibiting child labor, ending all forms of forced labor, and eliminating employment discrimination, etc., and ensure that human resources policy does not create differential treatment in gender, race, socioeconomic class, age, marital and family status, etc.• Suppliers shall provide a safe and healthy working environment in accordance with local laws and regulations.
Ethics	<ul style="list-style-type: none">• Suppliers shall abide by the principle of business integrity and shall not request, promise, deliver or accept any form of gifts, entertainment, kickbacks, bribes or other improper benefits for profit.• Suppliers shall ensure that they do not disclose any confidential information of TCC and its affiliated companies.
Environmental Protection	<ul style="list-style-type: none">• To protect public health and safety and environmental sustainability, suppliers shall comply with relevant laws and international standards, and operate in an environmentally trustworthy manner.

Supplier Sustainability Performance Self-Assessment

Since 2019, TCC has required suppliers to provide self-assessment questionnaires regarding their CSR commitments. The purpose is to gain in-depth understanding of the suppliers' implementation of commitments in various aspects such as economy, society, human rights, and environment. The results of the self-assessment questionnaires serve as the basis for strengthening supplier management in the future. In 2023, the response rate for the self-assessment questionnaires reached a high of 91.3%. Moving forward, the Company will take a more proactive approach to fulfill CSR in collaboration with suppliers, aiming to enhance the effectiveness of sustainable supply chain management.

On-Site Audit of Supplier Sustainability Performance



On-Site Audit of Supplier Sustainability Performance

Since 2019, TCC has been conducting on-site visits from time to time to important suppliers to verify the implementation status of their ESG (Environmental, Social, and Governance) practices. The assessment criteria are divided into four levels: "Compliance Items", "Items Requiring Observation", "Minor Non-compliance Items", and "Serious Non-compliance Items". A score of 70 or above in the on-site audit is considered qualified. If there are "Items Requiring Observation" or "Minor Non-compliance Items", follow-up monitoring of the improvement results is conducted regularly. In the case of "Serious Non-compliance Items", the supplier is required to develop an improvement plan to address the deficiencies. TCC not only sets deadlines for suppliers to make improvements and submit improvement reports, but also conducts periodic audits on suppliers with non-compliance items to mitigate operational risks. In 2023, all seven audited suppliers met the requirements of the CSR Commitment.

2.4.4 Actively Promote Green Procurement

With the beliefs of saving resources, reducing pollution, promoting recyclability and implementing corporate sustainable development, TCC Group is paying attention to issues such as global warming, environmental pollution and climate change. The Company is an active promoter of "green procurement", aiming to establish the image as an outstanding corporation to gain competitive advantages.

The total amount of green procurement in 2022 exceeded NT\$300 million, reaching the award amount set by the Ministry of Environment. On December 13th, 2023, the Ministry of Environment held an award ceremony to recognize outstanding units in "Green Procurement and Green Consumption Promotion for 2022". The Group also reported NT\$450 million in green procurement for 2023 at the beginning of 2024, meeting the award criteria set by the Department of Environmental Protection of Taipei City Government and the Ministry of Environment. Since 2018, TCC has continuously increased the amount of green procurement.

We adhere to the belief of loving the Earth and prioritizing environmental protection, striving to reduce resource waste, mitigate environmental impacts, and improve environmental quality through the creation of a green supply chain.



Environmental Protection Administration's
Awards and Certificates of Appreciation

CHAPTER 3

Environmental Sustainability and Climate Governance



3.1 Climate Change and Energy Management

3.2 Environmental Protection



Material Topics

• Energy Management and Circular Economy

✦ Fly ash and bottom ash in Guan Tian Plant were **100%** recycled

✦ The electricity-saving rate of Guan Tian Plant in 2023 reached **0.85%**

✦ The energy-saving and carbon-reduction plans have reduced **4,676.2** metric tons of CO₂e

Goals

- Fuel substitution rate (SRF and scrap tires) $\geq 30\%$
- Annual electricity-saving rate $\geq 1\%$

Strengthen greenhouse gas management

- Complete greenhouse gas inventory and verification for TCC
- Increase fuel substitution rate to reduce greenhouse gas emissions



Performance

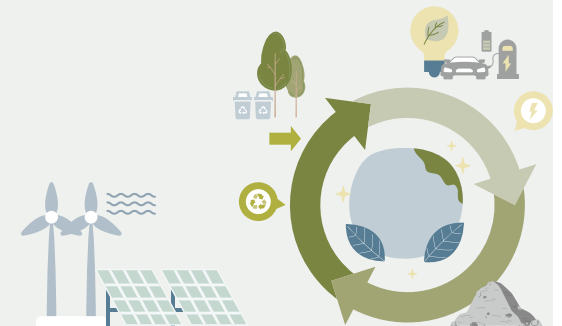
Energy management

- In 2023, the Guan Tian Plant achieved an electricity-saving rate of **0.85%**
- Reduced annual carbon emissions by approximately **1.3 million** metric tons of CO₂e (equivalent to the carbon absorption of approximately **3,340** Da'an Parks) by the three invested gas-fired power plants



Circular Economy

- **24,614** metric tons of scrap tires/ **3,620** metric tons of SRF were used
- Achieved fuel substitution rate of **25.74%**
- Reduced coal consumption by **44,140** metric tons
- Recycled **100%** of 22,465 metric tons coal ash into CLSM



3.1 Climate Change and Energy Management

3.1.1 Response Strategy and Environmental Management

Global warming and extreme weather are becoming more severe, making the mitigation of climate change impacts a critical issue of our time. At COP28 in 2023, the UAE Consensus was adopted, proposing a 43% reduction in global greenhouse gas emissions by 2030 compared to 2019 levels, with a commitment to achieve net-zero emissions by 2050. This involves accelerating the deployment of renewable energy, improving energy efficiency, and promoting industrial low-carbon transformation through hydrogen and CCUS (carbon capture, utilization, and storage). On February 15, 2023, the government of Taiwan announced the amendment of the original "Greenhouse Gas Reduction and Management Act", changing the name to the "Climate Change Response Act" and codifying the 2050 Net-Zero Emissions target into law, thereby implementing and promoting sustainable development and net-zero goals.

TCC pays close attention to global climate change as well as the market flow. To mitigate the direct or indirect impact of climate change and respond to government policies, we followed the four pillars of the Task Force on Climate-related Financial Disclosures (TCFD) framework: "governance", "strategy", "risk management", and "metrics and targets". Furthermore, we have identified potential climate-related risks and opportunities, and developed response measures based on the TCFD's 11 recommended disclosures.

Aspect	Management Action	Corresponding Section
Governance	<ul style="list-style-type: none"> The Board of Directors is the highest governance body for risk management, responsible for overseeing the operation of the risk management mechanism and ensuring its effectiveness. We established the Risk Management Committee, consisting of the Chairman, the President, and the Vice President of the Company. The committee is responsible for reviewing the Company's annual risk management plan and assessing the implementation of risk management measures. It ensures that the risk management mechanism adequately addresses the risks faced by the Company and integrates it into daily operations. The committee reports annually to the Board of Directors and the Audit Committee on the operations and implementation status. 	1.3 Risk Management
Strategy	<ul style="list-style-type: none"> We studied global trends, policies, regulations and norms, and formulated response strategies for short, medium and long-term climate-related risks and opportunities, reducing the impact on operations and seizing potential opportunities. We adopted an approach that includes "mitigation" to reduce greenhouse gas emissions and minimize potential impacts of climate change, and "adaptation" to adjust and adapt to climate change impacts. Through this dual approach of "mitigation" and "adaptation", we reference various scenarios from the IPCC and NGFS to evaluate potential climate-related risks and opportunities and take corresponding measures. <ol style="list-style-type: none"> Transition Risks: This mainly involves assessing the impact of regulations and technologies such as renewable energy, fuel and energy taxes, and carbon fees on TCC and developing response measures. Physical Risks: This primarily addresses risks related to the increased frequency of extreme weather events including storms and floods, resulting in risks such as project delays. Opportunities: Corporations continue to focus on low/zero-carbon energy topics such as renewable energy due to the trend of sustainability both domestically and internationally, which would increase TCC's opportunities for related operations and business expansion. 	3.1 Climate Change and Energy Management
Risk Management	<ul style="list-style-type: none"> After researching on relevant topics, we compiled those that might impact the Company and formulated corresponding strategies for further management. The Company continues to adopt ISO 14001 and 14064 Standards, plan emission reduction measures, and check environmental impact and greenhouse gas emissions annually. Implement transition risk management along with suppliers, reducing the impact of climate change on the supply chain through measures such as the supplier corporate sustainability commitment, and the on-site audit of sustainability performance. Incorporate climate-related risks and opportunities into scopes of risk management policies and processes, as well as risk management plans, review and update on a rolling basis, and hold task force meetings and Risk Management Committee meetings to discuss and identify relevant risks across departments. 	2.4 Sustainable Supply Chain 3.2 Environmental Protection
Metrics and Targets	<ul style="list-style-type: none"> According to topics associated with the impact of climate change risks and opportunities on the Company, KPIs related to alternative fuels, energy conservation, carbon reduction, and water management, as well as short, medium, and long-term goals are set to reduce the impact of climate change. Conduct inventory and disclose Scope 1 and 2 greenhouse gas emission data periodically and assess relevant transition risks and measures to promote the Group's greenhouse gas inventory and verification plan. Continue to carry out energy saving and carbon reduction-related measures to improve business performance and reduce energy consumption, including process improvement, power saving, etc. 	Material Topic Management Approach 3.1 Climate Change and Energy Management

Climate-related Risk/ Opportunity	Category	Item	Management Impact/Financial Impact	Response Strategy
Climate-related Risk: Transition Risk	Policies and Legal	Renewable Energy, Fuel/ Energy Tax and Regulations	<ul style="list-style-type: none"> Loss of investment due to changes in policies or regulations Change of regulations leads to increased operation costs of existing power plants 	<ul style="list-style-type: none"> Promptly gather information on government policies and legislation implementation schedules, and carry out assessment on impact and response measures in advance Provide suggestions to regulatory authorities in a timely manner, and carry out external engagement
		<ul style="list-style-type: none"> Climate Change Response Act Cap and Trade Carbon Tax/Fee 	<ul style="list-style-type: none"> The cap on total GHG emissions and stricter air pollution standards increase equipment upgrade costs and operation costs Government legislation to levy carbon fees leads to increased operational costs 	<ul style="list-style-type: none"> Reduce internal energy consumption and carbon emissions Greenhouse gas inventory management and power plant energy audit system Conduct maintenance regularly, replace old equipment to reduce energy consumption and carbon emissions Increase the ratio of alternative fuels in cogeneration plants to reduce coal usage Continuously monitor regulatory revisions related to carbon fee
	Technology	Low-carbon Transition	In response to the net-zero emissions trend, traditional coal/gas power plants need to assess unit upgrades, which may lead to increased operational costs	<ul style="list-style-type: none"> Promote unit upgrades and evaluate the feasibility of co-firing hydrogen and ammonia Assess the implementation of CCUS (Carbon Capture Utilization and Storage) technology
	Market	Energy Supply and Demand	Changes in the supply and demand structure of the energy market and the emergence of new business models in the power market will impact operational costs	<ul style="list-style-type: none"> In response to the energy transition, assess the feasibility of upgrading and replacing existing power plant units Expand renewable energy-related business to increase green electricity capacity
	Reputation	Company Reputation	Climate issues have a significant impact on the energy industry, with power plant accidents and carbon emission issues affecting reputational risk	<ul style="list-style-type: none"> Strengthen power plant operation management to reduce the likelihood of accidents Establish a greenhouse gas management mechanism, promote regular inventory and verification, and formulate carbon reduction strategies and targets
Climate-related Risk: Physical Risk	Acute	Extreme Weather Events	The occurrence of extreme weather events such as typhoon, rainfall or flooding, heatwave and drought have increased, resulting in project delays or operation losses	<ul style="list-style-type: none"> Purchase relevant insurance to avoid huge losses from natural disaster Review the project schedules weekly, and provide immediate responses to emergencies Establish an emergency response system for disasters and conduct drills periodically Develop management plans and response measures for risks related to extreme weather events
	Chronic	Changes of Climate Patterns	Long-term changes in temperature and rainfall patterns may lead to an increase in drought periods, which would affect operations and reduce revenue	

Climate-related Risk/ Opportunity	Category	Item	Management Impact/Financial Impact	Response Strategy
Climate-related Opportunity	Markets	Domestic and International Trends	<ul style="list-style-type: none"> The rise of international environmental initiatives such as RE100, SBTi and green supply chain promote trades in the green energy market The regulations for energy-heavy industries have increased the demands for renewable energy purchase and installation 	<ul style="list-style-type: none"> Actively expand renewable energy retailing business Seek collaboration with renewable energy power plants outside of the Group
	Resource Efficiency	Energy and Resource Integration	Expand regional energy integration, improve energy efficiency, and reduce environmental impact	Consolidate electricity and steam demand in the region to improve energy and resource utilization efficiency
	Renewable Energy	Development of Renewable Energy	In response to the renewable energy promotion policies, domestic services related to renewable energy have increased	<ul style="list-style-type: none"> Expand the development of renewable energy and energy storage business Undertake domestic, large-scale renewable energy projects Establish various types of renewable energy O&M teams

In addition, TCC adopted two major strategies, "mitigation" and "adaptation", reducing the impact of climate change on the Company's operations. "Mitigation" refers to improving the efficiency of existing fossil fuel power plants, reducing usage of fossil fuels, implementing energy resource reduction plans, and developing renewable energy to achieve energy saving and carbon reduction. On the other hand, "adaptation" strategies include setting up a disaster emergency response system and using a response command system to take appropriate measures against natural disasters (such as floods, droughts, typhoons, earthquakes, etc.) due to climate change. Furthermore, a greenhouse gas management mechanism has been established to conduct annual greenhouse gas inventory and verification, formulate reduction strategies and targets, and effectively promote net-zero emissions.



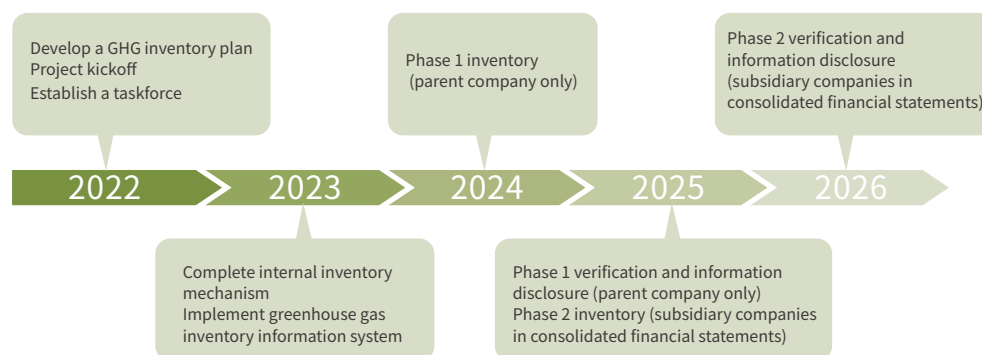
Response to Climate Change	
Mitigation	Adaptation
<ul style="list-style-type: none"> Strengthen the operation and maintenance of existing power plants, improve equipment efficiency, and reduce emissions. Use alternative fuels such as scrap tires and SRF (Solid Recovered Fuel) to reduce coal usage. Develop renewable energy-related businesses, including wind power, solar photovoltaic power, geothermal power, and other clean energy. 	<ul style="list-style-type: none"> Establish an emergency response system for disasters, which is composed of a notification team, rescue team, medical team, etc., and conduct regular drills to respond to incidents and climate disasters. Set up a greenhouse gas management mechanism to conduct annual greenhouse gas inventories and verifications, and formulate reduction strategies and targets. Develop management plans for risks related to extreme weather, assess potential impacts on operations, and establish response measures.

3.1.2 Energy Saving and Carbon Reduction Measures and Results

Greenhouse Gas Management

Due to excessive emission of greenhouse gases, global warming and climate change are now environmental topics faced by the international community. It is necessary to take economical and proactive measures to effectively reduce greenhouse gas emissions and minimize their impact on the environment.

To implement corporate carbon reduction measures, the Financial Supervisory Commission released the Sustainable Development Roadmap for TWSE/TPEX Listed Companies in March 2022, promoting the phased completion of greenhouse gas inventory and verification by listed companies. The greenhouse gas inventory and verification plan for the Company is as follows:



TCC's operating locations include the headquarters office in Taipei and Guan Tian Cogeneration Plant in Tainan. The headquarters office conducts its own assessment of Scope 2 indirect greenhouse gas emissions, as shown in the table below.

Region	Scope	Carbon Dioxide Equivalent (metric tons of CO ₂ e)		
		2021	2022	2023
Taipei Office	Scope 2	428	359	390

Note: 1.The national electricity emission factor was 0.509 kgCO₂e/kWh for 2021, 0.495 kgCO₂e/kWh for 2022, and 0.494 kgCO₂e/kWh for 2023.

2.The types of gases for Scope 2 mentioned above include: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride.

3.The basic data for 2022 has been corrected to 359. The reason is that instead of using the national electricity emission factor from 2021, the emission factor from 2022 was used.

As a member of global citizens, the Guan Tian Plant has received guidance and begun voluntary inventory since 2005 to conduct greenhouse gas inventory and registration annually. Since 2014, third-party verification has been conducted to ensure data accuracy and to keep track of the emission status, as we continue to promote effective control based on the results of the inventory. In the future, the Company will continue to carry out related work such as unit efficiency improvement, environmental protection equipment upgrades and waste recycling, fulfilling our energy-saving and carbon-reduction plans.

The direct greenhouse gas emissions (Scope 1) of Guan Tian Plant mainly originate from the boiler during the power generation process, while the rest comes from septic tanks, refrigerant leakage, maintenance operation and transportation vehicles such as company cars and stackers.

Region	Scope	Carbon Dioxide Equivalent (metric tons of CO ₂ e)		
		2021	2022	2023
Guan Tian Plant	Scope 1	378,803.47	326,786.00	337,191.66
	Scope 2	3,151.76	6,181.30	3,812.89
	Total	381,955.22	332,967.29	341,004.55
	Emission Intensity (Steam) (metric ton/metric ton)	0.341	0.362	0.350
	Emission Intensity (Electricity) (metric ton/kWh)	0.000989	0.001050	0.001017

Note: 1. The calculation of greenhouse gas emissions for Guan Tian Plant is mainly based on the global warming potential value announced in the Second Assessment Report in 1995, adopting the "emission factor approach". While others have adopted the mass balance approach for calculation. The emission factor approach is mainly based on the Greenhouse Gas Emission Factor Table and the electricity emission factor announced by the Bureau of Energy, Ministry of Economic Affairs.

2. The data for 2023 comes from the preliminary internal inventory, with carbon emissions calculated using the national electricity emission factor of 0.494 kgCO₂e/kWh for 2023.

3. The Scope 1, total, and emission intensity (steam) for 2021 were erroneously reported the preliminary inventory data. This has been corrected to data verified by a third-party audit. Additionally, the greenhouse gas emissions for 2022 have been updated to reflect data that has been verified.

4. The types of gases for Scope 1 and Scope 2 mentioned above include: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride.

The greenhouse gas emissions and emission intensity of the three gas-fired power plants invested by the Company are shown in the table below. The average emission intensity of the three gas-fired power plants in 2023 was 0.378 kgCO₂e/kWh, which is 0.117 kgCO₂e/kWh lower than the national electricity emission factor (2022). If the calculation was based on the amount of electricity sold by the three gas-fired power plants in 2023 (compared to the national average carbon emission factor), the annual carbon emission reduction is approximately 1.3 million metric tons of CO₂e, which is equivalent to the carbon absorbed by 3,340 Da'an Parks. (Note: assuming one Da'an Park can absorb approximately 389 metric tons of CO₂e per year)

		Carbon Dioxide Equivalent (metric tons of CO ₂ e)		
Region	Scope	2021	2022	2023
3 Gas-Fired Power Plants	Scope 1	3,740,451.23	4,177,165.10	4,296,421.91
	Scope 2	9,482.27	7,812.69	7,228.65
	Total	3,749,933.50	4,184,977.79	4,303,650.56
	Emission Intensity (metric ton/kWh)	0.000378	0.000377	0.000378

Note: 1. The data for 2023 comes from the preliminary internal inventory.

2. The types of gases for Scope 1 and Scope 2 mentioned above include: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride.

3. After the external audit performed by a third-party verification body, the Scope 1, total, and emission intensity for 2022 were revised.

Verification Criteria and Data Quality

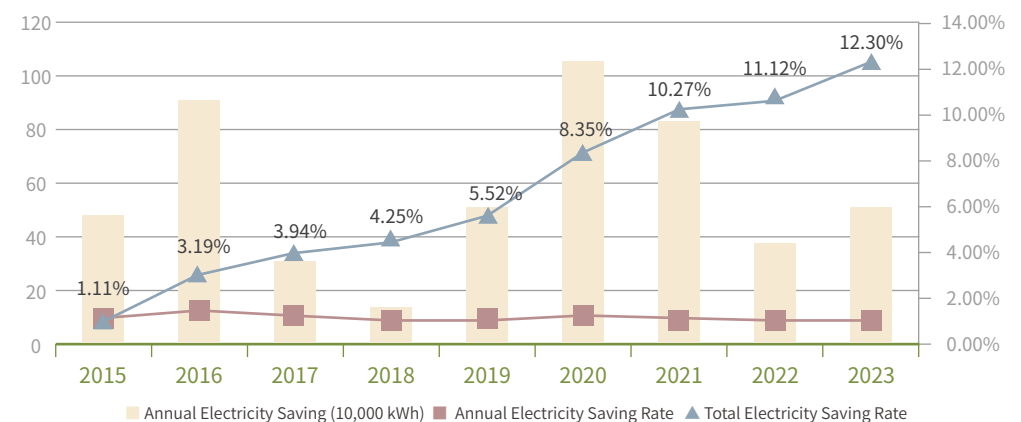
From 2005 to 2014, Guan Tian Plant conducted greenhouse gas inventory voluntarily. Since Guan Tian Plant was under (the first group) the Management Regulations of Greenhouse Gas Emission Reporting stipulated by the Environmental Protection Administration, Executive Yuan, its reporting has been done in accordance with governmental regulations since 2014.

To ensure the quality and reliability of Guan Tian Plant's greenhouse gas inventory information and reports, as well as those of the 3 invested gas-fired power plants, the results of these facilities are audited by an external third-party verification body in accordance with ISO 14064-1.

Energy Consumption within the Organization

TCC's headquarters office, Guan Tian Plant and the invested gas-fired power plants continue to conduct investigation and analysis, implementing measures to reduce energy consumption. Hoping to make a contribution to the environment, Guan Tian Plant has formulated various measures and is committed to energy saving and carbon reduction. The estimated electricity saving rate in 2023 was 1.18%. From 2015 to 2023, the total electricity saving rate was approximately 12.3%, and the average annual electricity saving rate was approximately 1.34%, which met the requirement of the government's energy saving policy, in which the average annual electricity saving rate must be greater than 1%.

In response to the draft amendment announced by the Bureau of Energy, Ministry of Economic Affairs on October 30, 2019 (Ching-Shou-Neng-Tzu No. 10805015880), which extended the period of the energy-saving target from "2015–2019" to "2015–2024", Guan Tian Plant will continue to make improvement in energy conservation in order to meet regulatory requirements.



In 2023, the electricity purchased by TCC's headquarters office slightly increased compared to 2022 due to the resumption of in-person work after the pandemic. Additionally, the energy intensity of TCC's Guan Tian Plant and the three invested power plants is disclosed in the tables below.

Headquarters Office Energy Consumption(All non-renewable energy sources)

	2021	2022	2023
Purchased Electricity (GWh)	0.84	0.73	0.79

Note: The purchased electricity was calculated based on the electricity bill of Taipower and the share of public electricity of the building.

In 2023, due to the high costs of international coal and an increase in the number of companies using scrap tires as an alternative fuel, Guan Tian Plant significantly reduced its procurement of scrap tires compared to 2022. Additionally, starting in 2023, the summer peak electricity usage period was extended by 1 month, leading to adjustments in the annual operation mode, resulting in a decrease in total energy consumed within the organization when compared to 2022.

	Unit: GJ		2021	2022	2023
Guan Tian Plant	Energy Consumption (Non- Renewable Energy)	Purchased Electricity	22,585	43,736	27,804
		Coal	3,170,470	2,793,662	2,806,708
		Low Sulfur Fuel Oil	5,117	11,086	6,994
		Scrap Tire	998,584	909,325	792,007
		SRF	-	9,310	73,481
		Gasoline	82	101	92
		Diesel	15	99	82
		Liquefied Petroleum Gas (LPG)	6	6	2
	Energy Sold	Electricity	816,653	808,492	714,978
		Steam	1,003,493	477,787	827,055
	Total Energy Consumption within the Organization		2,144,671	2,458,519	2,165,136
	Steam Energy Intensity (GJ/metric ton)		3.74	4.07	3.81
	Electricity Energy Intensity (MJ/kWh)		10.86	11.81	11.06

Note: 1. The calculation for the purchased electricity:

(In-plant electricity consumption + electricity sold) – amount of energy generated by Guan Tian Plant. Therefore, in addition to in-plant electricity consumption, electricity sold will also affect the energy consumption of purchased electricity.

2. The heating value conversion coefficients of various fuels:

Coal represents actual data, the conversion coefficient of scrap tires is based on value from the US EPA's 2013 Climate Leaders GHG Inventory Protocol (7,685 Kcal/kg), and the rest is based on the coefficients announced by the Bureau of Energy (version 6.0.3), while SRF is based on data provided by suppliers.

	Unit: GJ		2021	2022	2023
3 Invested Gas-Fired Power Plants	Energy Consumption (Non- Renewable Energy)	Purchased Electricity	64,886	58,133	52,229
		Natural Gas	60,435,309	67,698,476	69,398,793
		Gasoline	684	670	662
		Diesel	137	176	223
		Liquefied Petroleum Gas (LPG)	166	155	244
	Energy Consumption (Renewable Energy)	Purchased Green Electricity	0	0	0
	Energy Sold	Electricity	34,894,502	39,071,040	40,048,062
	Total Energy Consumption within the Organization		25,606,681	28,686,570	29,404,088
	Gross Power Generation Energy Intensity (MJ/kWh)		6.09	6.10	6.10


Note: The heating value conversion coefficients of various fuels are based on the coefficients announced by the Bureau of Energy (version 6.0.3).

Energy Saving and Carbon Reduction Measures and Results


With the mission of achieving environmental sustainability, TCC continues to enhance business performance by carrying out measures related to energy saving and carbon reduction, including process improvement and power conservation.

Guan Tian Cogeneration Plant is based on a cogeneration system, which is an energy integration system that produces electricity, steam, and heat simultaneously. Generally, the energy efficiency of the system could be greater than 50%, which is much higher than that of the conventional power generation.


The major benefits are as follows:




It is a distributed power supply. In addition to providing a balanced power supply for the region, it effectively reduces the loss of power transmission and distribution while providing dual power supply protection for regional users, which is of great help to the stability of the power supply system.



It effectively consolidates the electrical and thermal energy demand in the region, reduces the usage of small boilers, improves energy efficiency, and minimizes air pollution caused by small boilers with inadequate air pollution control equipment, serving as an important tool in promoting regional energy integration.



Reducing the risk of power shortage: it can reduce peak loads for Taipower's system during peak hours. In addition, the surplus electricity can be sold to Taipower, which improves Taipower systems' peak-hour power supply capacity, and thereby reduces the power generation cost of Taipower for operating high-cost units.



It has high energy efficiency, which can effectively save energy and reduce the emission of polluting gases, especially the emission of CO₂.

Guan Tian Plant has been operating for more than 20 years. Over the years, it continues to upgrade its equipment for higher operating efficiency. It is expected that the degree of improvement in the future will be relatively small; however, Guan Tian Plant will adhere to the attitude and spirit of continuous improvement, offering strategies and plans as follows:

Strategy	Specific Plans	Description
Increase the Volume of Steam Sold and Expand Regional Energy Consolidation	<ul style="list-style-type: none"> Continue to visit potential customers in the industrial park and search for new customers proactively 	<ul style="list-style-type: none"> Increase the volume of steam sold, which can greatly improve the overall thermal efficiency
Conduct Monitoring and Adjustment to Maintain Unit Efficiency	<ul style="list-style-type: none"> Carry out efficiency review through monthly plant management meetings and technical meetings. Through analysis and discussion, adjust combustion conditions to improve unit efficiency 	<ul style="list-style-type: none"> Analyze the unburned coal, and monitor/adjust combustion air volume constantly to maintain unit efficiency Analyze and review the rationality of various data
Conserve In-plant Electricity	<ul style="list-style-type: none"> Check whether the electricity consumption of various systems in the plant is normal through the energy audit system Implement annual overhaul to reduce energy consumption Perform evaluation to appropriately replace outdated equipment, and purchase high-efficiency equipment 	<ul style="list-style-type: none"> Replace HP Blower Unit-A with a new one Perform overhaul maintenance for the main air compressor, auxiliary air compressor, and steam turbines Conduct external maintenance and repair for the induced draft fan (IDF), primary air fan (PAF), and two cooling water pump (CWP) motors Conduct air conditioning system upgrade project for the electrostatic precipitator (EP) control room

In terms of actual plans as well as benefits of energy saving and carbon reduction, Guan Tian Plant has implemented related projects in 2023, saving 291,000 kWh of electricity and 1,372 metric tons of coal, with a carbon reduction of 2,965.44 metric tons of CO₂e. The list of the energy-saving measures is as follows:

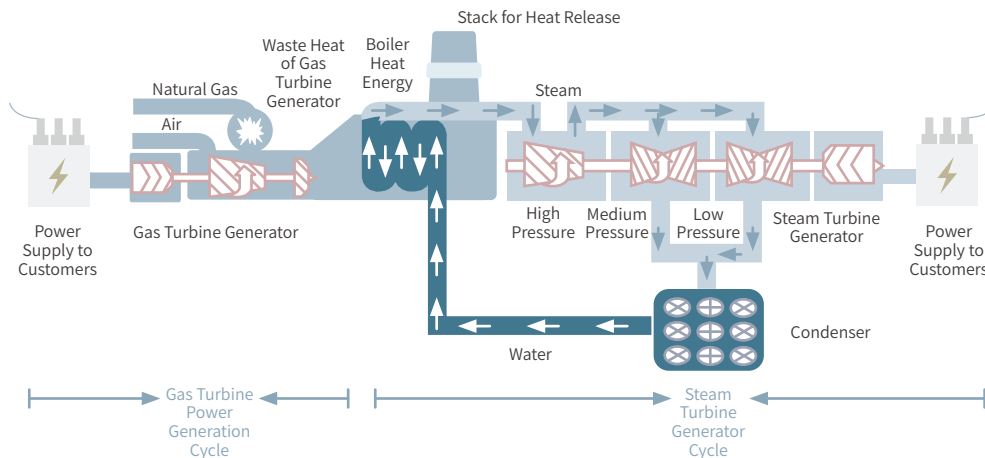
Plant	Energy-Saving/Carbon-Reduction Plan	Energy Type	Energy Saved (kWh)	Carbon Reduction (metric tons of CO ₂ e)	Period
Guan Tian Plant	Replacement of HP Blower Unit-A with a new one	Electricity	1,928	0.95	Jan.–Feb.
	Overhaul maintenance for the main air compressor	Electricity	9,936	4.91	Jan.–Feb.
	Overhaul maintenance for the auxiliary air compressor	Electricity	6,623	3.27	Jan.–Feb.
	Inspection and maintenance of steam turbines	Coal	1,372 (metric tons)	2,821.47	Jan.–Feb.

Plant	Energy-Saving/Carbon-Reduction Plan	Energy Type	Energy Saved (kWh)	Carbon Reduction (metric tons of CO ₂ e)	Period
Guan Tian Plant	External maintenance and repair for the induced draft fan (IDF), primary air fan (PAF), and two cooling water pump (CWP) motors	Electricity	267,218	132.01	Mar.-Dec.
	Air conditioning system upgrade project for the electrostatic precipitator (EP) control room	Electricity	5,740	2.84	Apr.-Dec.
	Total	Electricity	291,444	2,965.44	
		Coal	1,372 (metric tons)		

Note: 1. The electric energy saving estimation is based on the 2023 Energy-Conservation Measures and Energy-Saving Amount reported to the Bureau of Energy.

2. The carbon reduction from electricity saving (Scope 2) is calculated by using the national electricity emission factor of 0.494 kgCO₂e/kWh in 2023. The types of gases include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride.

In terms of the power plants invested by TCC, Star Energy Power, Sun Ba Power, and Star Buck Power are all gas-fired combined cycle plants. A combined cycle plant uses gas turbines to generate power and recovers waste heat from the turbine exhaust to generate steam, driving a steam turbine generator to provide supplementary electricity. Combining the two thermodynamic cycles can improve the overall power generation efficiency.



The power generation efficiency of gas-fired combined cycle plant is over 50%, which is much higher than that of conventional coal-fired power plant (typically less than 40%). Therefore, less fuel energy consumption for each kilowatt-hour of electricity generated, resulting in less greenhouse gas emissions and environmental impact. Under the circumstance that most renewable energy power generation are relatively unstable, gas-fired combined recycle plant will offer an option that takes into account both greenhouse gas emission reduction and power supply stability. In terms of energy-saving and carbon-reduction initiatives, Star Energy Power, Sun Ba Power, and Star Buck Power continued to carry out process improvement and electricity conservation measures. Several energy-saving projects were conducted in 2023, which saved an additional 3.46 GWh of electricity that is equivalent to a reduction of 1,710.8 metric tons of CO₂e. Major energy-saving projects conducted in 2023 are as follows:

Plant	Energy-Saving/Carbon-Reduction Plan	Energy Type	Energy Saved(kWh)	Carbon Reduction (metric tons of CO ₂ e)	Period
Chang Bin Gas-Fired Power Plant of Star Energy Power	Replacing fluorescent lamps in the power plant with LED lamps	Electricity	11,000	5.43	Jan.-Dec.
	Overhauling and upgrading motors within the plant to reduce operational energy consumption	Electricity	717,200	354.30	Jan.-Dec.
	Replacing heat elements in the gas turbine (including compressor blades, turbine blades, combustion chamber, and burners) to improve the unit's gas consumption efficiency	Natural Gas	90,910(m ³)	187.99	Jan.-Dec.
Star Buck Gas-Fired Power Plant of Star Buck Power	Upgrading a total of 90 lighting fixtures on the chimney platform of Heat Recovery Boiler No.1	Electricity	36,135	17.85	Feb.-Dec.
	Installing new first-stage blade for the GT-1	Electricity	107,442	53.08	Jan.-Apr.
	Replacing 50 lighting fixtures on the 24-meter walkway platform of the ACC fan, each 150W fixture was replaced with 50W LED floodlights	Electricity	20,075	9.92	Feb.-Dec.

Plant	Energy-Saving/Carbon-Reduction Plan	Energy Type	Energy Saved(kWh)	Carbon Reduction (metric tons of CO ₂ e)	Period
Fong Der Gas-Fired Power Plant of Sun Ba Power	Replacing the old constant frequency air conditioning unit in the MV Room (north side)	Electricity	19,763	9.76	Jan.-Dec.
	Replacing the constant frequency air compressor with a variable frequency air compressor	Electricity	269,574	133.17	Apr.-Dec.
	Replacing old lighting fixtures in NGC factory buildings	Electricity	35,040	17.31	Jan.-Feb.
	Replacing office lighting fixtures	Electricity	9,111	4.50	Jan.-Apr.
	Replacing the air conditioning systems in the BLK-2 sampling room and GIS RELAY/MCC ROOM	Electricity	57,185	28.25	Jan.-Aug.
	Improving vacuum efficiency by cleaning the fins of the ACC in BLK-1 to reduce power generation losses below the rated capacity	Electricity	1,800,000	889.20	Jan.-Nov.
Total		Electricity	3,082,525	1,710.76	
		Natural Gas	90,910(m ³)		

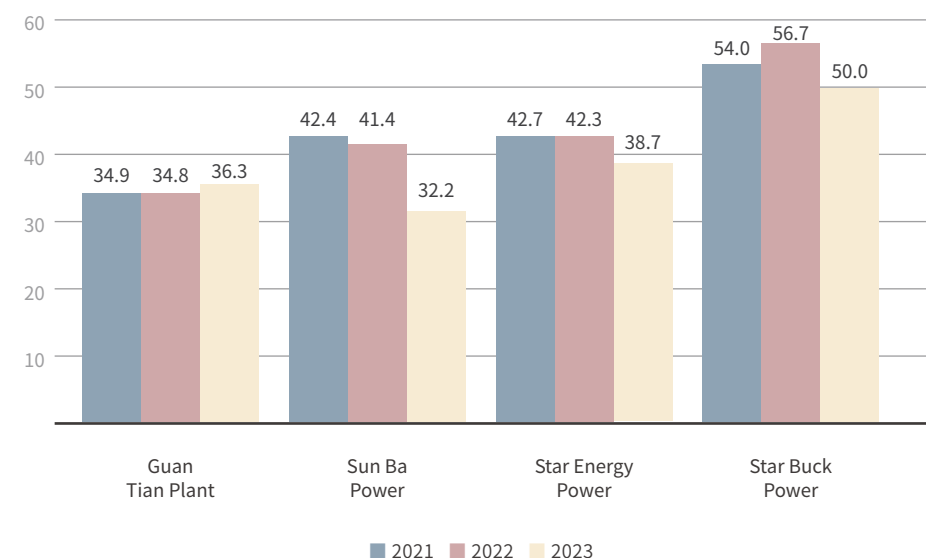
Note: 1.The electric energy saving is estimated based on the 2023 Energy-Conservation Measures and Energy-Saving Amount reported to the Bureau of Energy.
 2.The energy saving calculated above is an estimation.
 3.The carbon reduction from electricity (Scope 2) saving is calculated by using the national electricity emission factor of 0.494 kgCO₂e/kWh in 2023. The types of gases include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride.

Solar Photovoltaic Facilities of Power Plants

TCC Group's current strategy is focusing on the development and construction of renewable energy projects to directly promote the use of renewable energy. In 2020, TCC started to sell green electricity. In the future, it will gradually develop its renewable energy retailing business to maximize the utilization efficiency of renewable energy.

Currently, TCC's Guan Tian Plant has a rooftop PV system with an installed capacity of 304 kW, which is sold to Taipower. The business is operated and maintained by Star Energy. In addition, Fong Der Gas-Fired Power Plant of Sun Ba Power has a rooftop PV system with an installed capacity of 335 kW. Chang Bin Gas-Fired Power Plant of Star Energy Power has a ground-mounted PV system with an installed capacity of 3.97 kW, and a rooftop PV system with an installed capacity of 304.7 kW. Star Buck Gas-Fired Power Plant of Star Buck Power has a rooftop PV system with an installed capacity of 435.84 kW. All the electricity generated has been sold to Taipower with FIT. The total power generation for 2023 is shown in the table below.

Electricity Generated by Solar PV Systems of power Plants Owned/Invested by TCC (10,000 kWh)

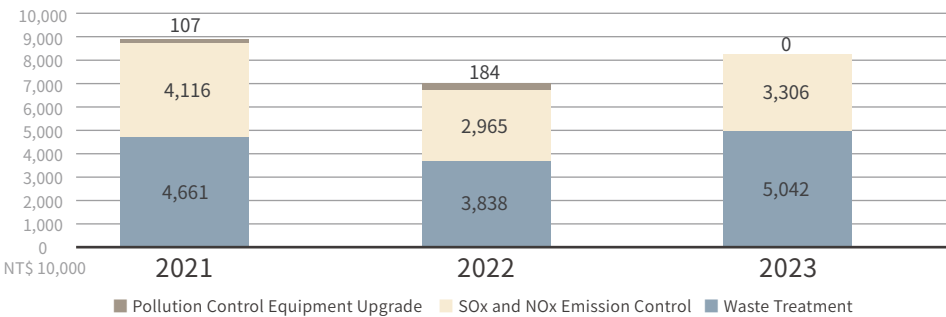


3.2 Environmental Protection

At the beginning of its establishment, TCC mainly provided cogeneration technology services and assistance in the consolidation of regional energy resources to effectively improve energy efficiency and reduce environmental impact. In 2000, the self-built Guan Tian Cogeneration Plant began providing high-efficiency and low-pollution steam and electricity to users in the Guantian Industrial Park.

To fulfill TCC Group's corporate social responsibility and commitment to environmental sustainability, while reducing waste and improving the efficiency of resource usage in power plants, Guan Tian Plant obtained ISO 14001 Environmental Management System certification in 2017, followed by Star Energy in 2018, expanding the application of environmental management system to construction engineering. Through this system, identification of environmental aspects is conducted throughout the product life cycle, such as production, construction and waste disposal. TCC Group is then able to identify potential environmental problems, make amendments, and reduce its environmental impact, fulfilling its goals for environmental conservation and sustainable operation.

To fulfill the Company's commitment to environmental protection, Guan Tian Plant invests annually in pollution control equipment and waste reduction/treatment. From 2021 to 2023, the total investment in environmental protection was approximately NT\$240 million, with an average annual investment of NT\$80 million, accounting for approximately 10% of Guan Tian Plant's production cost.



Environmental Policy



Compliance with Laws and Regulations

Abide by environmental protection laws and regulations, attach importance to international conventions.



Pollution Prevention

Reduce the impact that pollutants have on the environment.



Full Participation of Employees

Implement environmental awareness in the work.



Continuous Improvement

Ensure sustainable operation.

3.2.1 Circular Economy of Waste Resources

I Ideas, Goals and Measures of Resource Recycling

To achieve our commitment to environmental sustainability, Guan Tian Plant uses a circulating fluidized bed (CFB) boiler that accepts a wide range of auxiliary fuels. In consideration of economic efficiency, corporate social responsibility, and the government's coal reduction policy, treated scrap tires are used as an alternative fuel. In 2022, the plant further increased its use of solid recovered fuel (SRF) as a boiler alternative fuel to effectively improve the utilization of resources while contributing as much as possible to society and the environment. To cope with high prices of coal and the government's coal reduction policy, Guan Tian Plant increased the use of SRF in 2022. Currently, the main types of SRF in the market are made from waste plastics, waste textiles, and waste wood. Guan Tian Plant obtained the combustion permit in April 2023, and the burning of SRF began afterward. In 2023, Guan Tian Plant used 24,614 metric tons of scrap tires and 3,620 metric tons of SRF, achieving an overall alternative fuel (scrap tires + SRF) heating value substitution rate of 25.74%.

The list of major raw materials used by Guan Tian Plant is as follows (all are non-renewable raw materials):

Unit: metric tons, except fuel oil is in kilolitres (kL)

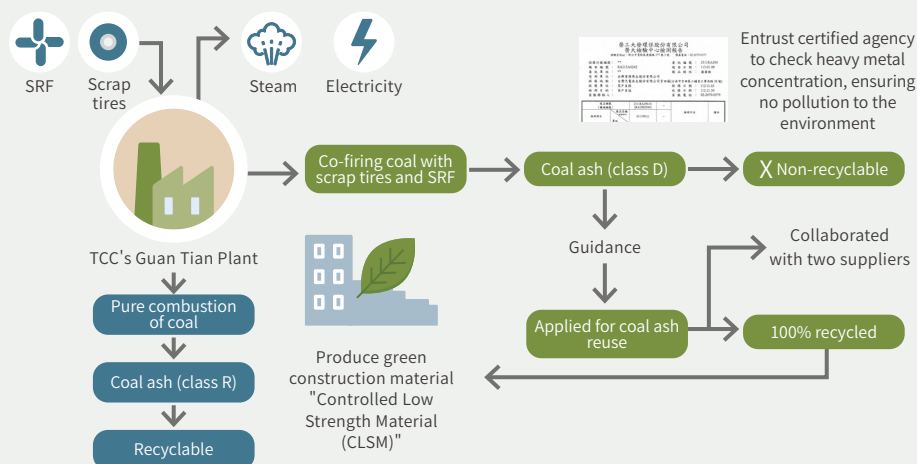
Plant	Name of Raw Material	2021	2022	2023
Guan Tian Plant	Coal	135,895	119,744	120,217
	Scrap Tires	31,034	28,260	24,614
	SRF	-	459	3,620
	Fuel Oil	127	276	174
	Silica Sand	177.72	176.44	228.96
	Limestone	23,734.2	16,142.7	16,933.0

Recycling of Energy and Resources - 100% Recycling of SRF and Scrap Tire Ashes

Apart from compliance with regulations, TCC consistently strives to be an environmentally friendly company. Guan Tian Plant's use of scrap tires as an alternative fuel helps reduce environmental pollution caused by the disposal of tires and prevent the spread of dengue fever. In 2022, the plant further used solid recovered fuel (SRF) as an alternative fuel, co-firing it with scrap tires and coal. The application of SRF in the high-energy-efficiency boilers of the cogeneration plant reduces fossil fuel use, lowers the load on existing incinerators, and effectively addresses the problem of disposing of large quantities of waste by converting waste into energy.

In addition, Guan Tian Plant has collaborated with its suppliers to submit an application for the reuse of coal ash. All coal ash produced during the combustion process is transported to the concrete plant. Coal ash is then mixed with raw materials from cement in a certain ratio to create Controlled Low Strength Materials (CLSM). Since CLSM is a self-leveling and self-compacting material, it does not require compressing. It is an alternative replacement for soil backfill and is suitable for small or inaccessible places, such as the backfill for large pipeline openings, narrow trenches, and holes under pavement or buildings.

Guan Tian Plant entrusts an agency approved by the Ministry of Environment to test the concentration of leaching heavy metals in coal ash every year in accordance with regulations, ensuring that it will not cause environmental pollution. In addition, with no waste being derived from the recycling process, we fulfill our commitment to protect the environment.



Circular Economy and Environmentally Sustainable Production Model - Bottom Ash Recycling System

Guan Tian Plant has been operating for more than 20 years. The unit equipment and operation technology have been constantly tested and upgraded. On the premise of ensuring stable operation, TCC has implemented circular economy with an efficient and eco-friendly production process.

Guan Tian Plant uses CFB boiler with silica sand as its medium for fluidization in the boiler, as its main function is to effectively control the boiler bed temperature and reduce the high erosion rate of the hearth caused by bed materials' high impurity. In recent years, due to the increase in the price of silica sand and the cost of treatment for bottom ash, the boiler manufacturer has suggested for the recovery of the existing bottom ash. After particle size screening, the recycled bottom ash not only reduces the amount of unusable ash as well as the need to purchase new silica sand, the recycled bottom ash has a smoother surface and can reduce the boiler erosion caused by the relatively uneven surface of new silica sand. Guan Tian Plant had planned to build a bottom ash recovery system in 2017, which was officially put into operation in 2018. In 2020, during a major overhaul, the bottom ash transportation system was replaced, and it has been functioning well since then.

Taking the amount of silica sand used as an example, the annual usage was 590.56 metric tons before the installation of the bottom ash recovery system in 2017. By 2023, it has been reduced to 229 metric tons, achieving the goal of reducing the amount of silica sand used.

The quantity of bottom ash from Guan Tian Plant is mainly related to the composition and sulfur content of coal. When there are more impurities in coal, it is necessary to increase the discharge of silica sand to maintain the quality of bed materials as well as the temperature of the hearth. Consequently, more bottom ash will be produced. The treatment volume of bottom ash in 2023 was 3,992 metric tons. All the bottom ash collected was 100% recycled to make Controlled Low Strength Materials (CLSM).

Amount of coal ash produced by Guan Tian Plan in the past three years:

Unit: metric tons

Coal Ash Output		Remark
2023	22,465	All the ash collected was 100% recycled and made into Controlled Low Strength Materials (CLSM).
2022	21,551	
2021	26,501	

Major raw materials of the three invested gas-fired power plants are as follows:

Unit: 1,000 m³

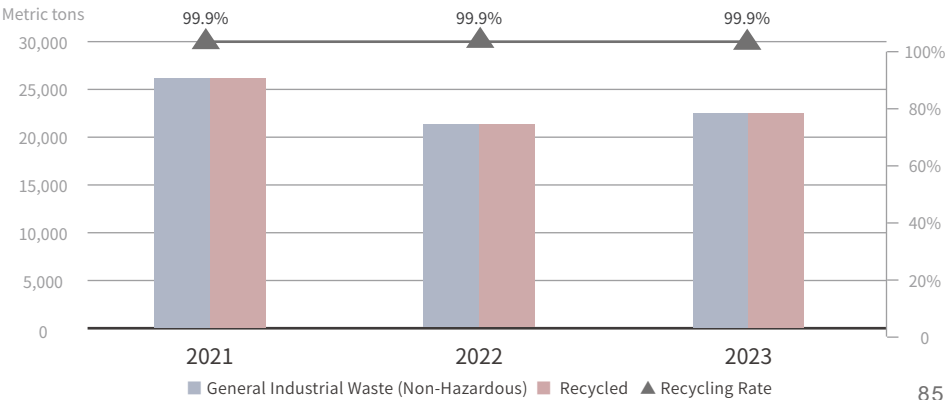
Plant	Raw Material	2021	2022	2023
3 Invested Gas-Fired Power Plants	Natural gas	1,804,255	2,021,091	2,071,853

Methods of Waste Disposal

Wastes produced by Guan Tian Plant are non-hazardous wastes, including inorganic sludge, domestic waste, coal ash, wasted thermal insulation materials and wasted refractory materials. Guan Tian Plant recycles any recyclable waste such as coal ash, with a recycling rate exceeding 99.8%, while the unrecyclable waste is handled by qualified operators in accordance with relevant regulations of the Waste Disposal Act.

The list of waste treatment methods adopted by Guan Tian Plant in 2023 is as follows (all are non-hazardous waste):

Waste	Weight (metric tons)		
	2021	2022	2023
Recycling for Reuse (Class R, Class D fly ash and bottom ash)	26,501.02	21,550.54	22,465.24
Incineration - Massive Combustion (Domestic waste)	3.5	1.5	1.2
Other - Landfill + Thermal Treatment (Sludge)	19.46	17.67	19.96
Other - Thermal Treatment (Wasted thermal insulation and refractory materials)	6.9	7.16	6.06
Total Weight	26,530.88	21,576.87	22,492.46



3.2.2 Water Resource Management

Taiwan's water resources are scarce, but water is also an essential resource for steam turbines during the power generation process. Thus, TCC attaches great importance to the use of water resources and enhances the efficiency of water usage through effective management, reducing consumption and unnecessary wasting of water resources.

Raw Water Source

The main source of water for Guan Tian Plant is tap water from the Taiwan Water Corporation. Tap water accounts for approximately 60–70% of the total water used, while the water from the Wushantou Reservoir accounts for approximately 22–30%. The remaining portion of the water comes from the recycled water within the plant, as well as the condensed water after selling steam to customers. The total intake water of Guan Tian Plant in 2023 was 761,321 m³.

Unit: m³

Plant	Water Source	2021	2022	2023	Calculation Method
Guan Tian Plant	Raw Water (Reservoir)	305,977	290,094	210,455	Meter data recorded daily by the Operation Department
	Tap Water	546,934	471,279	550,866	Meter data recorded daily by the Operation Department
	Total Water Intake	852,911	761,373	761,321	Raw water (reservoir)+Tap water
	Wastewater from Other Organizations	97,616	41,206	80,351	Meter data recorded daily by the Operation Department
	Process Wastewater Recycled	11,725	7,458	10,738	Meter data recorded daily by the Operation Department
	Other Recycled Water	1,128	1,411	1,900	Water meter (Wastewater recycled)
	Total Water Used	963,380	811,448	854,310	Total water intake + Recycled wastewater (other organizations/process water) + Other recycled water
	Water Discharge	66,921	64,132	59,399	Wastewater discharged + Water purchased by customers
	Water Consumption	785,990	697,241	701,922	Total water intake – Total water discharge

Unit: m³

Plant	Water Source	2021	2022	2023	Calculation Method
Guan Tian Plant	Recycled Water	12,853	8,869	12,638	
	Percentage of Recycled Water to Water Used	1.33%	1.09%	1.48%	This percentage does not include internal recycling of boiler water and cooling water.

Note: 1. There is no independent water meter in the headquarters office of TCC, and the water bill is only apportioned by the area. Hence, there is no exact water consumption data for reference.

2. The water sources of the Company's main operating bases are tap water and/or raw water (reservoir). In the case of Guan Tian Plant, its raw water is taken from Wushantou Reservoir, which is not a biodiversity or national protected area, and the amount of water used is much less than 5% of the actual water supply of the reservoir (0.16–0.2%). Hence, there is no significant impact on local water sources.

3. Guan Tian Plant is not located in a high/extremely high water stress area.

Water resource data of the three power plants invested by the Company, Star Energy Power, Sun Ba Power and Star Buck Power, is shown in the following table.

Unit: m³

Plant	Water Source	2021	2022	2023	Calculation Method
3 IPPs	Tap Water	146,830	168,464	162,439	According to water bill or water meter data
	Total Water Intake	146,830	168,464	162,439	
	Process Wastewater Recycled	11,592	12,112	11,985	Process wastewater recycled is estimated annually based on on-site measurement.
	Other Recycled Water	93,377	106,392	105,208	Recycled irrigation flow meter
	Total Water Used	251,799	286,968	279,632	
	Water Discharge	25,417	27,823	25,636	Sewage bill
	Water Consumption	121,413	140,641	136,803	Total water intake - Total water discharge
	Recycled Water	104,969	118,504	117,193	
	Percentage of Recycled Water to Water Used	41.69%	41.30%	41.91%	

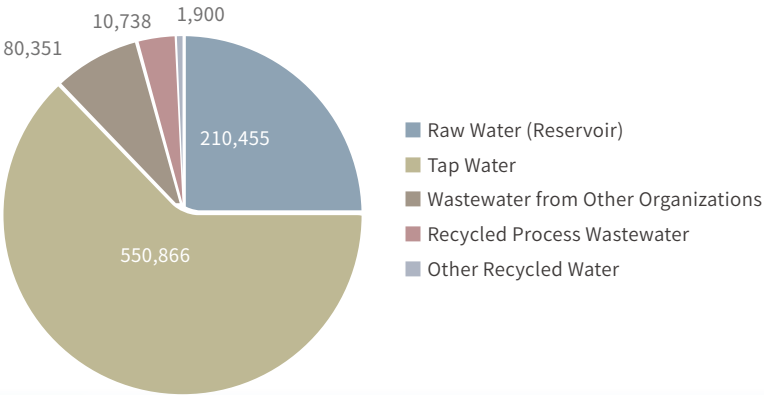
Water Resource Utilization Cycle in Cogeneration Plant

For regular boilers in cogeneration plant, the high-pressure steam created by the boilers will first generate electricity through the power generation process. The remaining steam is then re-heated and divided into high-pressure, medium-pressure, and low-pressure steam according to the in-plant process and users' demands. Subsequently, it is supplied to high-pressure feedwater heaters, low-pressure feedwater heaters, deaerators, heavy oil heaters, and sold to customers in industrial areas for higher energy efficiency. The steam consumption of equipment in the plant is approximately 25% of the steam produced by the boiler. Except for some losses through fugitive emission, the remaining steam can be condensed and recycled.

TCC attaches great importance to the management of water resources, adhering to the principle of no waste policy, while strengthening the recycling of water resources. Under the circumstance of no sales, nearly 99% of the steam in Guan Tian Plant can be fully condensed and recycled without wasting any water resources. When selling steam to customers, depending on the process conditions of the steam customer and the water quality of the condensation, the condensed water after the process is recycled and used in the cooling water tower. Since the quality of condensate is better than that of raw water, it not only improves the cooling tower's water quality, but also reduces the usage of raw water. In 2023, approximately 80,000 metric tons of condensate were recycled. Additionally, about 10,000 metric tons of wastewater from continuous boiler blowdown was used. The heat energy is recovered by the heat exchanger and then discharged into the cooling water tower, which can also improve the water quality of the cooling tower and reduce the discharge of wastewater indirectly.

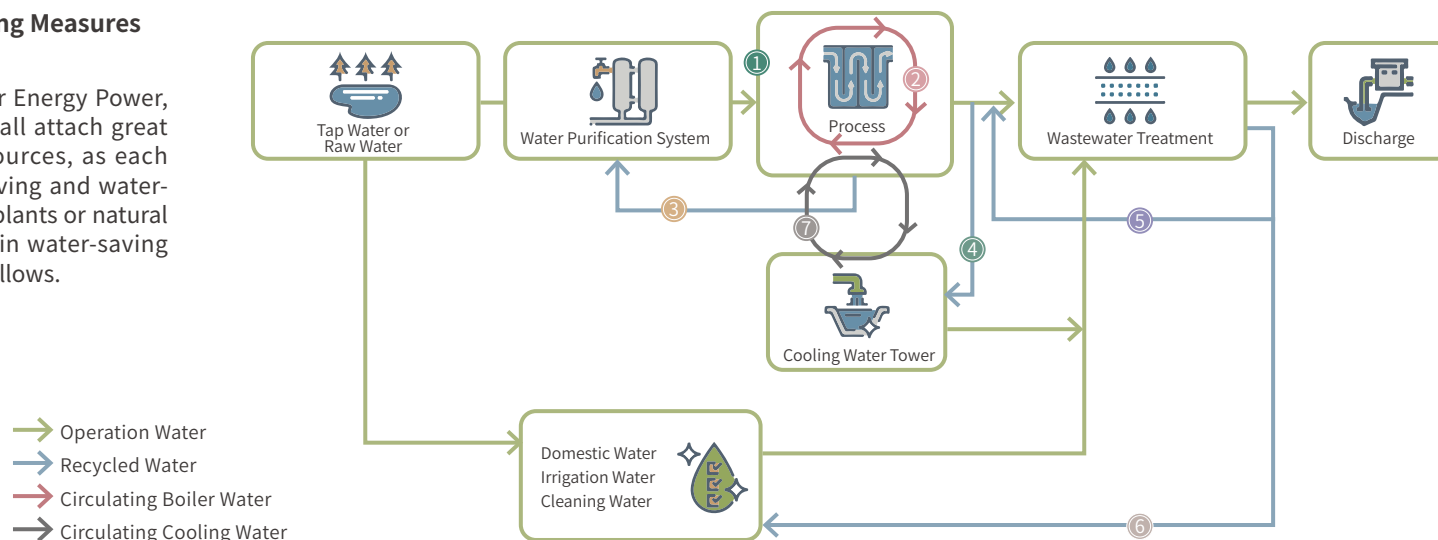
Since Guan Tian Plant is located in the Guantian Industrial Park and its production process is power generation, according to regulations, all wastewater generated must be discharged to the Wastewater Treatment Plant in the Guantian Industrial Park for centralized treatment. The wastewater generated by Guan Tian Plant can easily meet the Effluent Standards by using simple pretreatment process. Therefore, in 2017, a recycling water pipeline was added to the discharge pipeline, and the amount of wastewater recycled has gradually increased each year.

In 2023, approximately 58% of the water in Guan Tian Plant was used as cooling water, 35% was sold as uncondensed steam, and only 6% was treated and discharged to the Wastewater Treatment Plant in the Industrial Park, bringing every single drop of water to its fullest potential.



Water-Saving and Water-Recycling Measures

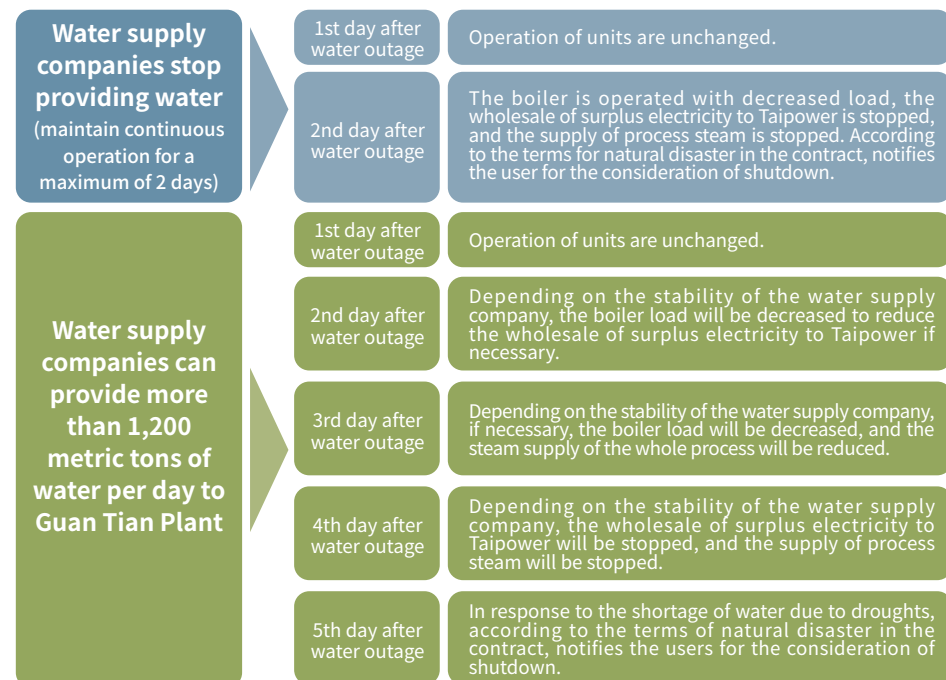
Guan Tian Plant and the invested Star Energy Power, Sun Ba Power, and Star Buck Power all attach great importance to the use of water resources, as each plant continues to invest in water-saving and water-recycling measures. For cogeneration plants or natural gas combined recycle plants, the main water-saving and water-recycling measures are as follows.



- 1 Saving Process Water**
 Reduce process water consumption through unit adjustment, such as modifying the flushing/draining water tank discharge piping system of heat recovery boiler and add shut-off valves and control systems to prevent steam from accidentally entering the water tank, resulting higher cooling water consumption.
- 2 Increasing Boiler Water Circulation**
 Pure water in the boiler is continuously circulated and boiled, which is prone to scaling due to high temperature. It is necessary to replace the circulating water through continuous discharge to maintain the water quality in the boiler. Chemicals can also be added to maintain boiler water quality, increase the number of cycles and remove sludge, increasing boiler efficiency and reducing boiler water discharge.
- 3 Recycling Sampling Water**
 A boiler sampling water recycling system is added to recover the sampling water of the boiler water and the pure water used for flushing the instruments in the sampling room. The recycled sampling water is used as boiler water after being filtered by the ion exchange resin in the water purification system.
- 4 Recycling Continuous Discharge Water**
 Since the quality of boiler condensation and continuous discharge water is better than that of raw water, they are directed into the cooling water tower for reuse once their heat energy has been recovered by the heat exchanger. This can improve the water quality of the cooling water tower and reduce the discharge of wastewater.
- 5 Recycling Wastewater for Flushing Cooling**
 Changed the water source of flush cooling for the auxiliary boiler and the waste heat boiler. The cooling water originally supplied by raw water tank is replaced by the recycled water from the wastewater system, reducing the consumption of raw water for flush cooling.
- 6 Recycling Wastewater After Treatment**
 Part of the effluent in the wastewater treatment facility is recycled after its treatment, serving as irrigation for green spaces within the plant, cleaning coal yard/suppressing dust, etc.
- 7 Increasing Cooling Water Circulation**
 When the cooling water tower is in operation, the water will reduce due to evaporation and scattering. Moreover, impurities in the water will accumulate, resulting in scaling that affects the operation. Therefore, it is necessary to drain the water frequently to maintain the water quality. Chemicals can be added to adjust the water quality, minimize the scaling, increase the concentration ratio, and reduce the discharge of cooling water.

Water Risk Management and Measures

The water source of Guan Tian Plant is mainly from the Taiwan Water Corporation, partly from the Wushantou Reservoir which is provided by other water supply companies. According to the Water Risk Assessment Tool of the World Resources Institute (WRI), Guan Tian Plant is located in low water risk area. However, considering the changes in global climate and rainfall patterns, Guan Tian Plant designs measures to cope with potential water risks in advance. Currently, the maximum effective water storage capacity in Guan Tian Plant is approximately 5,500 metric tons (all tanks, pools and cooling towers). Guan Tian Plant's maximum water consumption under normal operation and steam supply is approximately 2,500 metric tons per day. In the event of water restrictions, the water supply company can only provide 1,200 metric tons of water per day, and based on the maximum water storage and water consumption of Guan Tian Plant, the units can operate normally for approximately 4 days. If the water supply companies stop providing raw water, Guan Tian Plant could maintain normal operation for 2 days. When the Taiwan Water Corporation implements water rationing measures for industrial-use water, the responses of Guan Tian Plant are as follows.



In addition to saving and recycling water during the process of power generation, Guan Tian Plant and the three invested gas-fired power plants also implement various water-saving measures for domestic water usage. The results of water-saving and water-recycling measures implemented by each plant are as follows.



Water
Saving



Recycling

Guan Tian Plant	Star Energy Power	Sun Ba Power	Star Buck Power
Add chemical to control water quality <ul style="list-style-type: none"> ◆ Cooling water reduced by 1,100 metric tons/day ◆ Boiler water discharge reduced by 1% 	Unit adjustment/ recycle sampling water <ul style="list-style-type: none"> ◆ Process water saving: 19 metric tons/day 	Modify the boiler flushing and draining pipe system <ul style="list-style-type: none"> ◆ Process cooling water saving: 110 metric tons/day 	Unit adjustment/ recycle sampling water <ul style="list-style-type: none"> ◆ Process water saving: 25-30 metric tons/day
Change for water pollution prevention <ul style="list-style-type: none"> ◆ Boiler wastewater recycling: 25 metric tons/day ◆ Effluent recycling: 5 metric tons/day ◆ Wheel-washing pool wastewater recycling: 3 metric tons/day 	Recycling flushing cooling water from wastewater treatment facility/ hot wastewater <ul style="list-style-type: none"> ◆ Wastewater recycling: 90-120 metric tons/day 	Recycling discharged wastewater from treatment facility <ul style="list-style-type: none"> ◆ Wastewater recycling: 100 metric tons/day 	Recycling flushing cooling wastewater from treatment facility/ hot wastewater <ul style="list-style-type: none"> ◆ Wastewater recycling: 80-100 metric tons/day

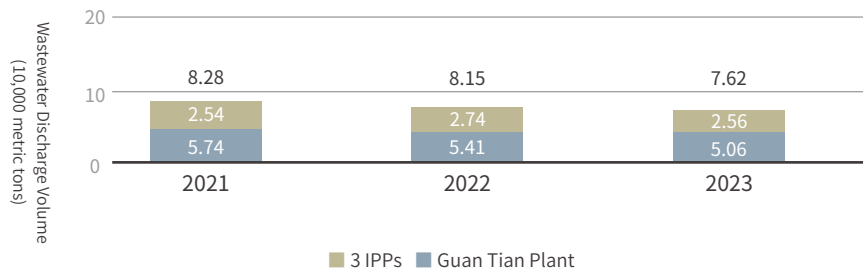
Wastewater Treatment

Since wastewater from Guan Tian Plant is mainly used during power generation, it has better quality. However, to reduce environmental pollution risks, the plant's wastewater is treated properly through on-site treatment facilities before being discharged to the Wastewater Treatment Plant of the Guantian Industrial Park. Therefore, the collected wastewater meets the discharge standards and is considered an excellent discharge source for the wastewater treatment plant.

Star Energy Power, Sun Ba Power, and Star Buck Power all have in-plant wastewater treatment facilities. After the wastewater generated from the plant has been treated to meet the standards, most of it is recycled for irrigation, and the remainder is released or discharged to the Wastewater Treatment Plant in the Industrial Park for management according to the EIA (Environmental Impact Assessment) requirements.

Through a number of water-saving and water-recycling measures, the wastewater discharge of Guan Tian Plant and the three invested gas-fired power plants has been reduced year by year. The discharge of wastewater in 2023 and the discharge volume over the years are summarized as follows.

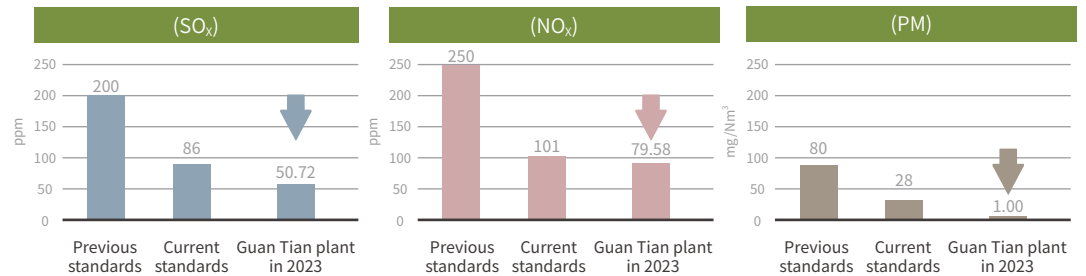
Plant	Guan Tian Plant	3 Gas-Fired Power Plants
Wastewater Source	Process Wastewater	Process Wastewater/ Domestic Wastewater
Discharge Destination	Wastewater Treatment Plant of the Guantian Industrial Park	Industrial Park Sewer/ Wastewater Treatment Plant/ Streams
Treatment Method	Wastewater Pre-Treatment	Chemical Coagulation Sedimentation/ Biological Treatment
Whether it is Used by Other Organizations	Wastewater Treatment Plant of the Guantian Industrial Park for centralized management	Wastewater Treatment Plant of the Industrial Park for centralized management /None
Water Volume Estimation Method	Water Meter	According to Flow Meter/ Water Meter
Wastewater Discharge Volume (10,000 metric tons)	5.06	2.56
BOD (mg/L)	<1	1.95
COD (mg/L)	38.3	7.10
SS (mg/L)	45.3	3.48



3.2.3 Air Pollution Prevention and Control

TCC's Guan Tian Plant is a coal and scrap tires co-firing cogeneration plant, with the main air pollutants being nitrogen oxides (NO_x), sulfur oxides (SO_x), and particulate matter (PM). The plant controls air pollutant emissions through dry desulfurization, denitrification equipment, and electrostatic precipitators. In 2020 and 2021, in response to the revision of "Management Regulations of Continuous Emission Monitoring System for Stationary Source Air Pollutants", relevant software and hardware updates were carried out, including the update of the opacity analyzer and CEMS data acquisition system. In 2022, the data acquisition system that complies with the latest "Management Regulations of Continuous Emission Monitoring System for Stationary Source Air Pollutants" was officially launched.

Changes in emission standards related to regulations and the average emission values of Guan Tian Plant are as follows:



In 2023, the average emission values of sulfur oxides (SO_x), nitrogen oxides (NO_x), and particulate matter (PM) were 50.72 ppm, 79.58 ppm, and 1 mg/Nm³, respectively.

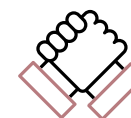
Unit: kg

Guan Tian Plant	2021	2022	2023	Calculation Method and Coefficient Source
Sulfur Oxides (SO _x)	250,029	193,820	207,900	Based on the formula for air pollution fee and the declared amount
Nitrogen Oxides (NO _x)	265,993	191,940	231,850	
Particulate Matters (PM)	9,466	10,648	2,428	
Total	525,488	396,408	442,178	
3 Invested Gas-Fired Power Plants	2021	2022	2023	Calculation Method and Coefficient Source
Sulfur Oxides (SO _x)	31,245	17,143	16,648	Based on the formula for air pollution fee and the declared amount
Nitrogen Oxides (NO _x)	1,289,981	1,156,257	1,018,063	
Particulate Matters (PM)	39,112	42,905	36,718	
Total	1,360,338	1,216,305	1,071,429	



CHAPTER 4

Talent Cultivation, Friendly Workplace



4.1 Talent Management and Development

4.2 Human Rights Protection and Inclusion

4.3 Healthy Workplace



Material Topics

- Talent Management and Development
- Occupational Health and Safety

- ✦ The Guan Tian Plant achieved **zero work injuries** for more than **1,110,000** hours since its establishment
- ✦ The Guan Tian Plant received the **Outstanding Performance Award** of the Safety and Health Family
- ✦ Organized birthday tea parties and set up the employee lounge to create a safe and friendly workplace
- ✦ Average training hours: **51.8** hours/person for employees, **26.1** hours/person for middle and senior managers

Goals

Implement Human Rights Protection and Inclusion

- Conducted hazard identification and risk assessment for workplace misconduct
- Conducted **two** workplace violence prevention training sessions in 2023

Build a Key Talent Pool

- In 2023, training hours for mid-to-senior managers: **≥ 26** hours/person
- Training hours for employees: **≥ 36** hours/person

Provide employees with a safe, high-quality, and comfortable working environment

- Effectively utilize ISO 45001 Environmental, Health, and Safety Management System
- Provide physical and mental health consultation services
- Strive to achieve **zero occupational accidents**
- Implement occupational safety and health education and training

Performance

Healthy Workplace

- Conducted occupational health and safety education and training for current employees and new employees (3 hours)

Guan Tian Plant

- **Zero work-related injuries** since establishment
- Received the **Outstanding Award** in Safety and Health Family performance rating for the **4** consecutive years
- Completed **8** environmental, health, and safety improvement optimizations



Taipei Office

- Provided individual consultations and health education guidance to **29** employees
- Conducted **4** sessions on hazard prevention and communication skills training

Talent Cultivation

- Employee learning hours for digital and in-person courses: **51.8** hours/person
- Mid-to-senior manager learning hours for digital and in-person courses: **26.1** hours/person
- Core workforce training program: **282** person-hours
- Implementation of the job rotation plan: Rotation achievement rate was approximately **7%**



4.1 Talent Management and Development

4.1.1 Human Resources Policy

Attach Importance to Employee Rights

- Shaping an integrity management-oriented corporate culture
- Providing a working environment in which employees can fully develop their talents
- Providing employees with the right to have parental leave without pay
- Ensuring gender equality at work
- Prohibiting gender discrimination and differential treatment in all aspects, including recruitment, appointment, performance evaluation and promotion, education and training, benefits, compensation for the same work or value, etc.
- Committing to comply with international human rights conventions, including the "United Nations Universal Declaration of Human Rights (UDHR)", the "United Nations Guiding Principles on Business and Human Rights (UNGPs)", the "International Covenant on Civil and Political Rights (ICCPR)", and the "International Covenant on Economic, Social and Cultural Rights (ICESCR)"

Abide by the Laws and Regulations

- Employing individuals with disabilities in compliance with relevant labor laws and regulations
- Establishing a "Codes of Ethical Conduct", which states that employees of the Company shall not engage in any form of discrimination and exclusion based on social status or identity such as gender, race, religious belief, party affiliation, sexual orientation, rank and age
- Formulating the "Personal Data Protection and Management Regulations" protects the collection, processing and utilization of employees' personal data, avoids infringement of personality rights, and uses personal data appropriately
- Formulating the "Regulations for Sexual Harassment Prevention, Reporting and Punishment" provides employees and job applicants with a work and service environment that is free from sexual harassment, while taking appropriate preventive, corrective, disciplinary, handling measures as well as grievance procedures

Fair Treatment, Equal Opportunity

- The employment policy is based on the principle of fairness and justice
- No differential treatment of employees in terms of appointment, compensation and benefits, performance evaluation, promotion and training opportunities due to factors such as race, nationality, appearance, age, gender, sexual orientation, religious belief, political stance, physical or mental disabilities, pregnancy or marital status
- Formulating the "Human Resources Management Regulations", the "Employee Compensation Regulations", the "Work Assessment Implementation Guidelines", the "Promotion and Selection Regulations", the "Regulations for Human Resources Arbitration Committee" and the "Regulations for Sexual Harassment Prevention, Reporting and Punishment" to strengthen human resources management

Diverse Channels, Harmonious Communication

- Committing to create and maintain harmonious labor relations
- Establishing smooth communication channels and protecting the human rights and labor rights of employees
- Calling a labor-management meeting quarterly to discuss issues related to labor-management relations, labor conditions, and labor welfare
- Making announcements on the prohibition of sexual harassment and the Company's philosophy of no discrimination toward sexual orientation. In addition, employees were informed that same-sex marriage is entitled to the same benefits provided by the Company, for the promotion of harmonious labor-management relationships and the growth of the Company.

4.1.2 Employee Composition

Organizational Profile

As of the end of 2023, TCC had a total of 126 employees, with supervisors accounting for approximately 8.7% of all employees.

Diversity Promotion Status

The average age of TCC's employees is approximately 45 years old, with an average working experience of 12.4 years. Employees over 30 years old account for 87%, and those with a college degree or above account for 92% of all employees. Most employees have college degrees in their expertise, are well-certified, and have years of experience within the electricity and engineering industry. However, since the company belongs to the electric power investment, development and power generation industry, its industrial characteristics has led to a slight difference in the percentage of male and female employees, especially Guan Tian Cogeneration Plant, which had a higher percentage of male than female employees.

Employee Structure – Number of Employees by Employment Contract and Type

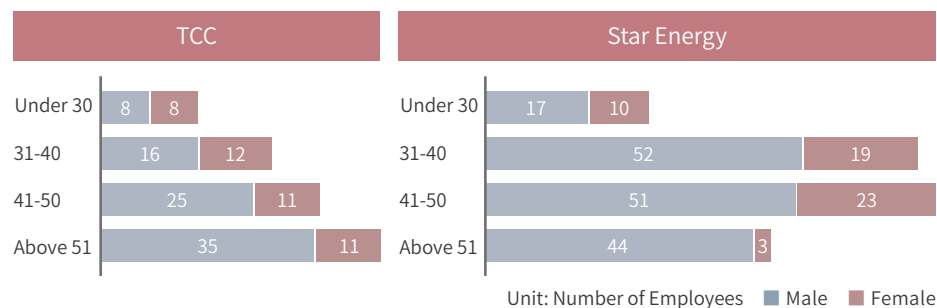
TCC	Employment Contract			Employment Type		
	Regular	Contract	Total	Full Time	Part Time	Contractor (Supplier Worker)
Male	83	1	84	84	0	13
Female	42	0	42	42	0	3
Total	125	1	126	126	0	16

Star Energy	Employment Contract			Employment Type		
	Regular	Contract	Total	Full Time	Part Time	Contractor (Supplier Worker)
Male	118	46	164	164	0	224
Female	36	19	55	55	0	44
Total	154	65	219	219	0	268

Note: Both TCC and Star Energy have not employed part-time workers or recruited volunteers.

Employee Structure – Number of Employees by Age, Position, and Education for Different Regions and Genders

Age Distribution

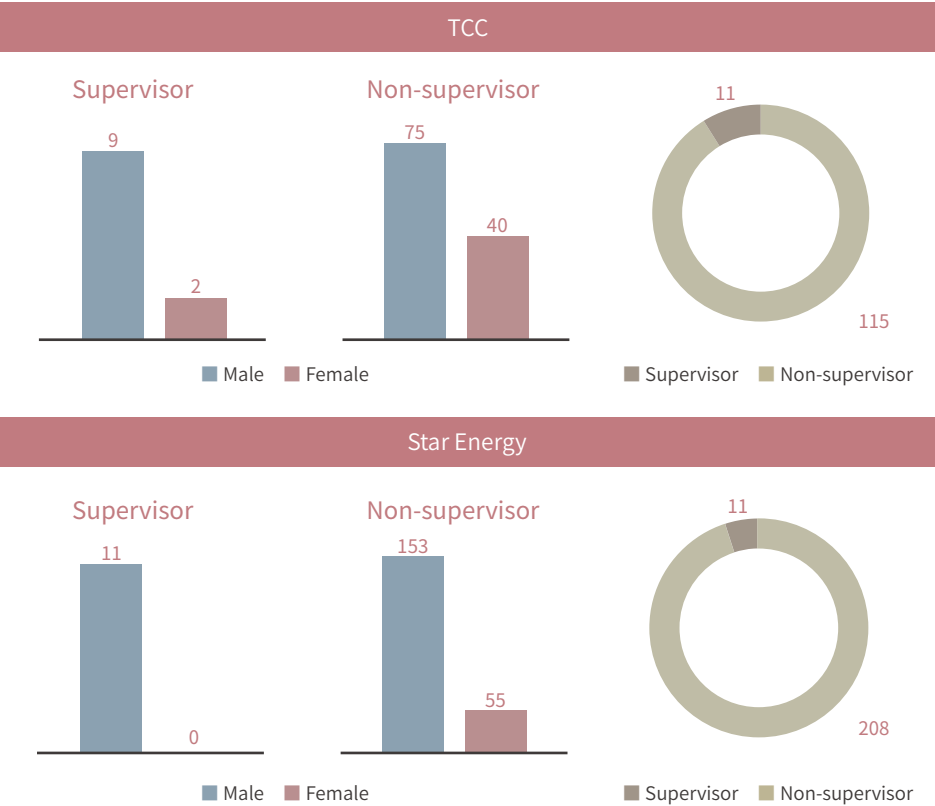


Region

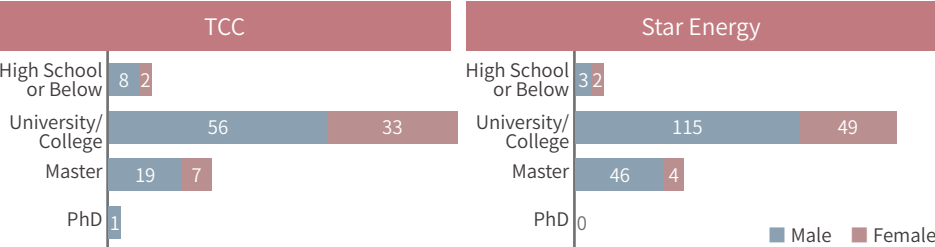
By Region	Taiwan	Other Regions
TCC	126	0
Star Energy	217	2



Position



Education



New and Resigned Employees

There are two sources of talent recruitment in TCC. One is internal mobility , which acquires talents through internal promotions, transfers and job announcements. The other relies on external channels, including employee referral, human resources advertisements (including the Internet), as well as public/private employment service agencies (including human resources agency). Priority is given to local candidates during the recruitment of external personnel. The selection, appointment, and development of employees are based on their capability, knowledge, experience, ethics, and work attitude. In 2023, 10 new employees were hired in TCC.

TCC	Age				Total
	Under 30 Years Old	31-40 Years Old	41-50 Years Old	Above 51 Years Old	
New Male Employee	2	0	1	1	4
New Female Employee	4	1	1	0	6
Percentage of New Male Employee	1.59%	0%	0.79%	0.79%	3.17%
Percentage of New Female Employee	3.17%	0.79%	0.79%	0%	4.76%

Star Energy	Age				Total
	Under 30 Years Old	31-40 Years Old	41-50 Years Old	Above 51 Years Old	
New Male Employee	9	15	12	10	46
New Female Employee	3	7	6	0	16
Percentage of New Male Employee	4.11%	6.85%	5.48%	4.57%	21.00%
Percentage of New Female Employee	1.37%	3.20%	2.74%	0%	7.31%

TCC possesses diverse welfare policies and a comfortable, friendly working environment to take care of employees' needs. The labor-management relationship is amicable with high employee retention rate.

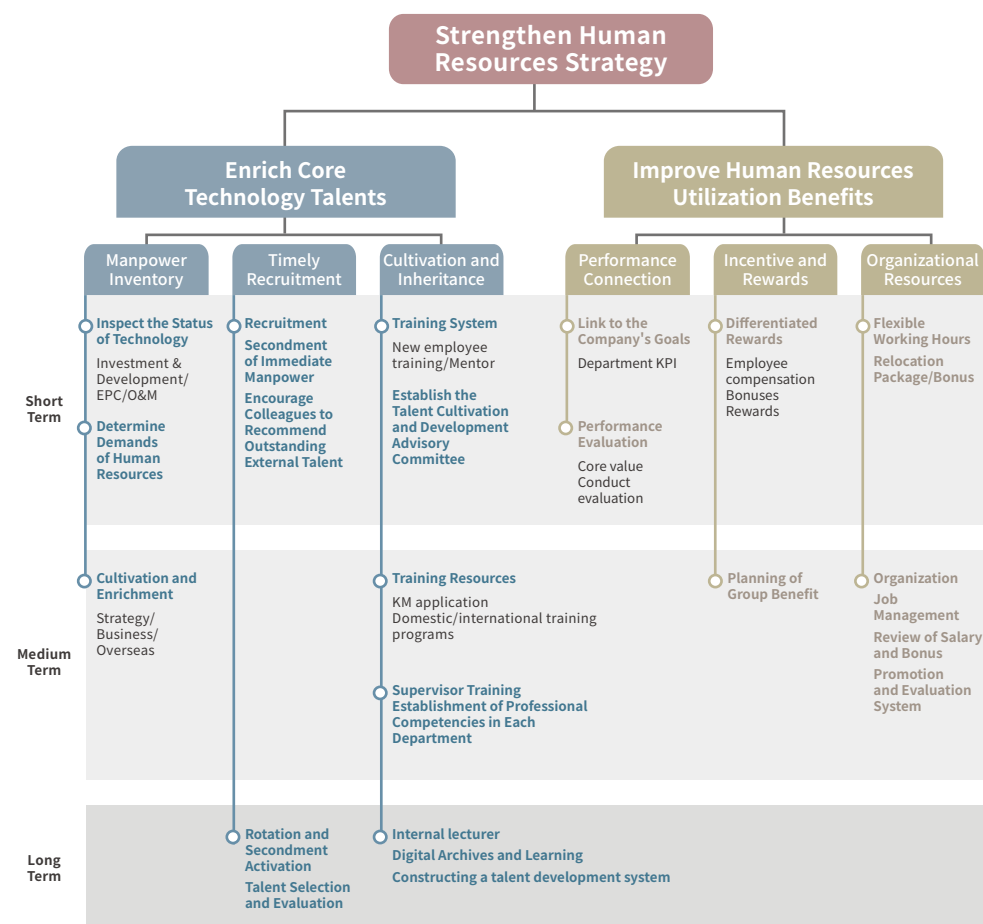
TCC	Age				Total
	Under 30 Years Old	31-40 Years Old	41-50 Years Old	Above 51 Years Old	
Resigned Male Employees	1	3	2	2	8
Resigned Female Employees	2	0	2	2	6
Male Turnover Rate	0.79%	2.38%	1.59%	1.59%	6.35%
Female Turnover Rate	1.59%	0%	1.59%	1.59%	4.76%
Total Number of Employees Resigned					14
Overall Employee Turnover Rate					11.11%

Star Energy	Age				Total
	Under 30 Years Old	31-40 Years Old	41-50 Years Old	Above 51 Years Old	
Resigned Male Employees	5	13	15	17	50
Resigned Female Employees	3	2	1	2	8
Male Turnover Rate	2.28%	5.94%	6.85%	7.76%	22.83%
Female Turnover Rate	1.37%	0.91%	0.46%	0.91%	3.65%
Total Number of Employees Resigned					58
Overall Employee Turnover Rate					26.48%

Note: The turnover rates of TCC (including retirement and transfer to other companies of the Group) for 2021, 2022, and 2023 were 10.94%, 7.69%, and 11.11%, respectively.

4.1.3 Talent Cultivation

TCC upholds the belief that employees are the most valuable asset of the Company. Therefore, the Company has developed a talent cultivation program aligned with its business strategy to build human resource strategies and plans systematically. TCC provides training courses based on the professional requirements for each position to strengthen human resource management. The short-term, medium-term, and long-term plans are illustrated below.



Highlights of Human Resource Enhancement in 2023

Strengthening talent cultivation and development

In 2022, TCC established the "Talent Cultivation and Development Advisory Committee" to oversee the completion of key talent development plans, various management training programs, and training effectiveness evaluations. By utilizing diverse talent cultivation methods, TCC aims to create organizational value.

Continuing the talent management policies in 2023, TCC has planned various programs including the mid-to-senior management development program, the core workforce training program, and internal competency training. Additionally, the Company has strengthened management competency training for employees at the team leader level and above. TCC also continues to promote digital online courses, offering employees multiple learning channels, including job-related and general courses, to enhance their professional knowledge and competitiveness. In 2023, the average learning hours for digital and in-person courses were 26.1 hours for supervisors (team leader level and above) and 51.8 hours for general employees.

Mid-to-senior management development program

TCC offers digital and in-person courses in management, engineering, finance, and other fields as part of its mid-to-senior management development program. This program aims to develop employees' management competencies. In addition to their existing expertise, employees gain experience in diverse areas such as project planning, engineering management, operations and maintenance (O&M), and financial analysis through a job rotation system, thereby cultivating cross-disciplinary talents.



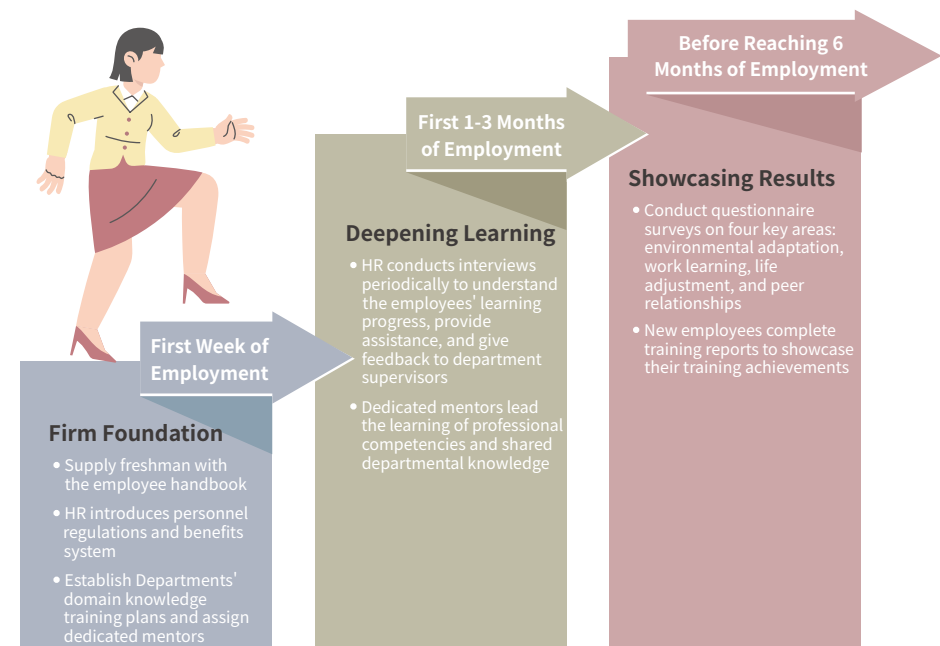
Core workforce training program (Enhancing English Language Skills)

Improving recruitment, elimination & mentoring mechanisms

In response to future business expansion and the increasing demand for professional talent, TCC is actively developing diverse recruitment channels and continues to implement the "Refinement of Elimination and Mentoring Mechanism". According to the "Employee Performance Evaluation Regulations", employees whose evaluation scores do not meet the standards are provided with improvement plans, and their progress is tracked periodically to enhance the overall competitiveness of the Company.

Implementing training and care mechanisms for new employees

In addition to improving manpower recruitment, retaining talent is also an important issue. To assist new employees in adapting to the work environment, each department will develop training plans for new employees, which include setting learning objectives and enhancing job skills. Furthermore, within the first six months of employment, the Human Resources Department will regularly examine employees' physical and mental well-being to enhance their professional capabilities and reduce the employee turnover rate.



2023 Human Resources Training Program Implementation Results

Training Hours for Supervisors and Employees

TCC	Male			Female		
Training Hours (hr)	Total Hours	Total Number of People	Average Training Hour/Person	Total Hours	Total Number of People	Average Training Hour/Person
Supervisor	230	9	25.6	36.5	2	18.3
Non-supervisor	4,888	75	65.2	2,067.5	40	51.7
Total	5,118	84	60.9	2,104	42	50.1

Star Energy	Male			Female		
Training Hours (hr)	Total Hours	Total Number of People	Average Training Hour/Person	Total Hours	Total Number of People	Average Training Hour/Person
Supervisor	47	11	4.3	0	0	-
Non-supervisor	2,795	153	18.3	1,227.5	55	22.3
Total	2,842	164	17.3	1,227.5	55	22.3



Types of Training

TCC	Total Number of People			Total Hours
	Male	Female	Total	
Management Skill Training for Middle and Senior Management	103	53	156	1,013.5
Professional Competency Training	26	22	48	491
General Education Training	87	110	197	289.5
Information Security Training	143	90	233	394
Language Skill Training	90	98	188	282
Online Learning	58	30	88	3,409
License Re-training	257	6	263	1,343

Star Energy	Total Number of People			Total Hours
	Male	Female	Total	
Management Skill Training for Middle and Senior Management	19	3	22	45
Professional Competency Training	15	18	33	516
General Education Training	10	17	27	43.5
Information Security Training	122	57	179	241
License Re-training	84	34	118	3,224

I Cultivation and Sharing - Knowledge Management (KM) Platform

Since the introduction of TCC Group's Knowledge Management (KM) platform in 2017, its usage has steadily increased each year. Employees have internalized the use of the platform and sharing of knowledge into their daily operations. The platform continues to facilitate the sharing, retention, discussion, and exchange of professional knowledge in areas such as cogeneration, investment in power plants, power and renewable energy engineering technology, as well as power plant operations, maintenance, and operational experience within the organization.

Each year, considering the needs of new employees and seed training, TCC conducts education and training for the KM platform. In July 2023, TCC invited employees from Guan Tian Plant, Star Energy, and the three invested gas-fired power plants to participate in training through video conferencing. The training included an introduction to the KM platform's features and hands-on online practice sessions to enhance employees' system application skills. Additionally, to increase the utilization of the KM platform, TCC set the annual theme for 2023 as "Net-Zero Carbon Emissions", encouraging employees to exchange and share relevant information.



I Performance Evaluation

The Employee performance evaluation consists of regular evaluation and annual evaluation. For regular evaluation, each supervisor will conduct evaluation on employees' performances once every six months. Those who have major merits and deficiencies should be recorded, and an appraisal interview may be conducted when needed, serving as an important basis for the annual evaluation.

Company Goals and Performance Evaluation



Every year, the Company incorporates sustainability-related goals into its overall objectives and departmental goals, ensuring that the performance evaluations of managers and employees are linked to the Company's overall objectives. For the performance evaluations of managers, KPIs are established based on the Company's overall goals for each department. The evaluation is then conducted based on the achievement of departments' KPIs. As for general employees, performance evaluations are based on their individual performance for the year. Individual performance is linked to performance bonuses and employee remuneration, and it serves as the basis for promotions and salary adjustments. In the future, TCC will continue to increase the weight of departmental performance in individual performance evaluations, promoting teamwork and collective growth within departments to achieve the Company's sustainability performance indicators.

Deviation Management



Employees whose annual performance evaluation scores are 70 points or below will not receive performance bonuses or employee rewards. A review and improvement mechanism has been implemented for underperforming employees to enhance overall competitiveness.

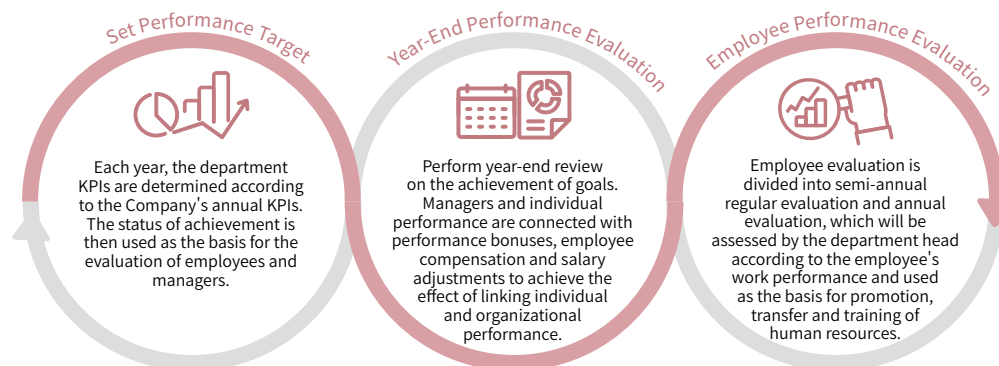
Annual Performance Goals for Senior Managers



To demonstrate the management's comprehensive consideration of corporate operations and sustainable development, TCC links the salaries and remuneration of the President and Vice President to ESG indicators. The annual performance goals include ESG indicators related to their roles. The evaluation items cover financial indicators, operational management, sustainability performance, corporate governance, and stakeholder communication. By having senior managers oversee the Company's sustainable development strategies and related initiatives, TCC ensures the effective implementation of its sustainability goals.

Evaluation Items	Weight	Description
Financial Indicators	20%	Company financial performance (EPS, ROE, revenue performance, and budget achievement rate, etc.)
Operational Management	25%	Supervise various company operations 1.Power plant operations management: Improve operational efficiency and fuel substitution rate 2.Investment operations management: Manage the operations of existing gas-fired power plants and other invested companies 3.Supervise investment & development, engineering project contracting, O&M, and renewable energy retailing businesses 4.Oversee the execution and horizontal coordination of various units' operations to ensure the sustainable operation of the Company
Sustainability Performance	30%	Supervise the planning and implementation of the Company's sustainable development strategies 1.Issue of the Sustainability Report and disclosure of related information 2.Addressing risks and opportunities related to climate change 3.Planning and promoting the Group's greenhouse gas management 4.Green procurement and sustainable supply chain management 5.Promoting digital transformation and information security protection
Corporate Governance	10%	Supervise the promotion of corporate governance, integrity management, and risk management, and establish a continuous improvement mechanism to strengthen corporate governance.
Stakeholder Communication	15%	Responsible for holding external investor conferences and establishing effective communication with various stakeholders (shareholders, institutional investors, media, etc.) to ensure the accuracy of information disclosure regarding company operations and important announcements.

Employee Performance Evaluation Results in 2023



TCC	Male			Female		
Employee Performance Evaluation	Number of People Receiving Performance Evaluation	Total Number of People	Percentage of People Receiving Performance Evaluation	Number of People Receiving Performance Evaluation	Total Number of People	Percentage of People Receiving Performance Evaluation
Supervisor	10	9	111.11%	3	2	150.00%
Non-supervisor	76	75	101.33%	41	40	102.50%
Total	86	84	102.38%	44	42	104.76%

Note: This table includes periodic contract employees. The number of people receiving performance evaluation includes those who have resigned on December 31, 2023, but were still eligible for evaluation and bonuses. The number of people not receiving performance evaluation includes those who were still on the job on December 31, 2023, but did not require or were not eligible for evaluation. Therefore, the number of people who were subject to performance evaluation may be more than the number of employees who were still on the job at the end of the year.

Star Energy	Male			Female		
Employee Performance Evaluation	Number of People Receiving Performance Evaluation	Total Number of People	Percentage of People Receiving Performance Evaluation	Number of People Receiving Performance Evaluation	Total Number of People	Percentage of People Receiving Performance Evaluation
Supervisor	14	14	100.00%	0	0	-
Non-supervisor	143	146	97.95%	53	54	98.15%
Total	157	160	98.13%	53	54	98.15%

Note: 1.This table includes periodic contract employees. The number of people receiving evaluation includes those who have resigned on December 31, 2023, but were still eligible for evaluation and bonuses. The number of people not receiving performance evaluation includes those who were still on the job on December 31, 2023, but did not require or were not eligible for evaluation.

2.Some periodic contract employees were not eligible for evaluation; therefore, they were not included in the total number of people receiving the evaluation.

Average Employee Salary Adjustment in 2023

The growth of our employees' salaries is mainly based on the promotion of position or ranking, supplemented by regular salary adjustment. Promotions to higher positions come with greater responsibilities and corresponding salary increases, motivating employees to create greater value. Regular salary adjustments are reviewed annually, depending on the Company's profitability and changes in factors such as salaries in the labor market and overall economic indicators. The Company adjusts the salary regularly based on employees' performances, with more favorable salary adjustment for those in lower ranks to motivate high performers and entry-level employees. The average salary adjustment for 2023 was about 3.38%.



Note: Managerial staff in the above table include president, vice presidents, and manager of the Finance Department of TCC.

















Average and Median Salaries of Non-Supervisory Employees for 2023

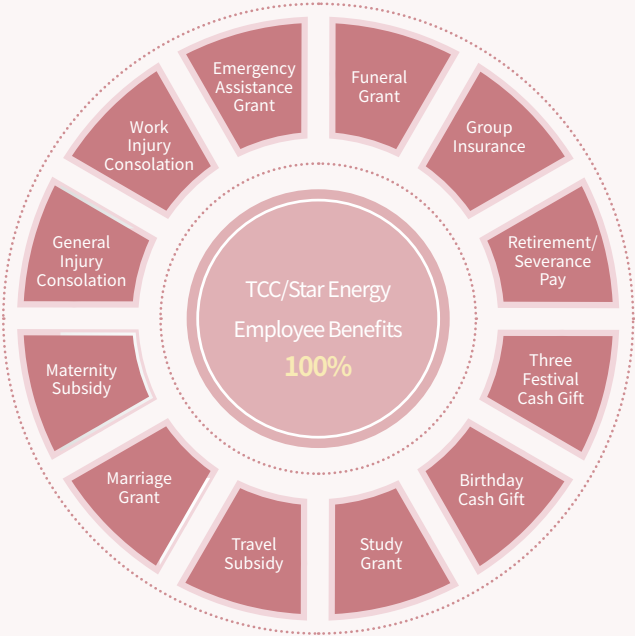
Average Salaries of Non-Supervisory Employees			
TCC	Non-Supervisor Employees		
	2021	2022	2023
Total Salary of Non-Supervisory Full-Time Employees (A) (NT\$1,000)	141,890	151,241	160,394
Number of Non-Supervisory Full-Time Employees (B)	119	122	122
"Average Salary" of Non-Supervisory Full-Time Employees (A/B) (NT\$1,000)	1,192	1,240	1,315
"Median Salary" of Non-Supervisory Full-Time Employees (NT\$1,000)	1,029	1,046	1,128

4.1.4 Employee Benefits

Provide a Healthy and Work-life Balanced Working Environment

TCC believes that talents are the Company's most valuable asset. To promote employees' physical and mental health and provide a work environment that supports work-life balances, TCC implements diverse employee benefits that exceed regulatory requirements. These efforts aim to enhance employee satisfaction, foster unity, and create corporate value. In addition to offering year-end performance bonuses and a profit-sharing remuneration system, TCC has designed a benefits system that meets the needs of employees and their families. The Company has established various clubs and periodically holds employee family day events. Since 2023, the Company has also organized quarterly birthday tea parties and annually feasts to provide opportunities for internal interaction and create a happy workplace.

Employee Benefits and Care						
Item	Content					
Grant and Subsidy		Maternity Subsidy		Marriage Grant		Funeral Grant
Insurance/Health Examination		Free Group Insurance for Employees		Group Insurance for Family Members with Discount		Free Health Examination
Activity Subsidy		Club Activities		Domestic Travel Subsidy		International Travel Subsidy
Bonus/Cash Gift		Year-End Bonus		Performance Bonus		Birthday and Three-Festival Cash Gifts
Educational Subsidy		Study Grant		Book Allowance		
Condolences/Relief		Work Injury Consolation Payment		Emergency Assistance Grant		



Employee Health Checkups

Employees of the Company are entitled to free health checkups. Employees aged 40 years and older can undergo health checkups annually, whereas employees under the age of 40 can have health checkups every two years.

Employee Group Insurance

Employees of the Company enjoy free group insurance, which covers accidents, medical expenses, cancer, and life insurance to ensure their health and safety. Additionally, employees' parents and dependents can participate in health checkups and group insurance at discounted rates, providing dual protection for employees and their families.

Employee Club Activities

TCC has established an Employee Welfare Committee to coordinate plans related to employee welfare. It has set up various clubs, including a Fitness Club, Ball Game Club, and Coffee Club, and it periodically organizes various activities to promote employee interaction and engagement. Each club has established its own organizational charter and holds regular meetings to review the effectiveness of activities and budget execution, ensuring a positive impact on employees' physical and mental health and improving work quality.



Employee Club Activities

The clubs of Guan Tian Plant have organized activities such as tours of the Wushantou Reservoir and hiking in the Xitou Nature Education Area, advocating for workplace safety, labor health, and leisure activities, and encouraging employees to develop exercise habits to enhance their physical and mental well-being.



Tour of Wushantou Reservoir



Hiking in Xitou

Employee Birthday Celebrations

To provide a friendly workplace and enhance employee well-being, quarterly birthday tea parties have been held since 2023. Additionally, a larger birthday feast is held every year, bringing employees together to joyfully celebrate birthdays.



Birthday Tea Party



Birthday Feast



Employee Lounge



Employee Lounge

Employee Lounge

To create a warm and comfortable work environment, the Taipei headquarters has set up an employee lounge. The lounge provides reading materials and snacks, allowing employees to relax during their breaks.



Employee Benefits System

TCC provides legally compliant leave options including menstruation leave, tocolysis leave, pregnancy checkup leave, maternity leave, paternity leave for male employees, family care leave, and unpaid parental leave. We also encourage those at the end of their parental leave to apply for reinstatement. In 2023, the number of TCC's employees who applied for unpaid parental leave was 1.

Item	Male	Female	Total
Total number of TCC's employees eligible for unpaid parental leave in 2023	84	42	126
A: Total number of employees who applied for unpaid parental leave in 2023	1	0	1
B: Number of employees who applied for reinstatement in 2023	1	1	2
C: Actual number of employees reinstated in 2023	1	1	2
D: Number of employees who should be reinstated in 2023, but applied for extension	0	0	0
E: Number of employees who have continued to work for one year after reinstatement from unpaid parental leave in 2022	0	0	0
F: Number of employees who have been reinstated from unpaid parental leave in 2022	0	0	0
Reinstatement rate (%) = C / (B-D)	100%	100%	100%
Retention rate (%) = E / F	-	-	-

Note: After the employees have served for half a year, they can apply for unpaid parental leave before their children turn three years old. Therefore, this table only lists the number of employees who have served for more than half of a year until Dec. 31, 2023.

Item	Male	Female	Total
Total number of Star Energy's employees eligible for unpaid parental leave in 2023	164	55	219
A: Total number of employees who applied for unpaid parental leave in 2023	2	0	2
B: Number of employees who applied for reinstatement in 2023	2	0	2
C: Actual number of employees reinstated in 2023	0	0	0
D: Number of employees who should be reinstated in 2023, but applied for extension	0	0	0
E: Number of employees who have continued to work for one year after reinstatement from unpaid parental leave in 2022	0	1	1
F: Number of employees who have been reinstated from unpaid parental leave in 2022	1	1	2
Reinstatement rate (%) = C / (B-D)	0%	-	0%
Retention rate (%) = E / F	0%	100%	50%

Note: After the employees have served for half a year, they can apply for unpaid parental leave before their children turn three years old. Therefore, this table only lists the number of employees who have served for more than half of a year until Dec. 31, 2023.

Superior Retirement System

In addition to those who meet the qualifications specified in Article 53 of the Labor Standards Act, employees of the Company can apply for retirement if they "have worked in the Company for more than 10 years and the sum of their work experience (in years) and age has exceeded 70". This flexible retirement system provides our employees with more options for their career planning.

Retirement System			
	Work Experience & Age	Applicable	Allocation System
Retirement conditions according to Article 53 of the Labor Standards Act	Worked for more than 15 years, at least 55 years old	<input checked="" type="checkbox"/>	Applicable to the old pension system under the Labor Standards Act: (1) 6.5% of the employee's total salary is allocated to the retirement fund every month, and deposited into a special bank account in the name of the Company's Worker Retirement Reserve Supervision Committee. (2) Entrust an external professional actuarial company to review the pension reserve account every year to ensure that it is sufficient to meet the fund requirements for pension payments.
	Worked for more than 25 years	<input checked="" type="checkbox"/>	
	Worked for more than 10 years, at least 60 years old	<input checked="" type="checkbox"/>	
TCC has formulated flexible retirement conditions that are better than those stipulated by the Labor Standards Act	Worked for more than 10 years and the sum of work experience (in years) and age has exceeded 70	<input checked="" type="checkbox"/>	Applicable to the new pension system under the Labor Standards Act: The Company contributes 6% of the employee's total salary to the individual's pension account established by the Bureau of Labor Insurance on a monthly basis according to the labor pension level, and withholds a certain amount based on the employee's voluntary contribution rate and deposits it to the individual's pension account.

Volunteer Leave System

To encourage employees to participate in social welfare activities, the Company provides three days (a total of 24 hours) of paid volunteer leave annually. If employees participate in volunteer activities organized by the Company on "non-working days", they will be given a corresponding number of hours of volunteer leave based on the duration of the activity. For volunteer activities held on "working days", the time spent participating in the activity during working hours will be counted as volunteer leave on that day, and employees will be paid when they take the volunteer leave.

4.2 Human Rights Protection and Inclusion

I Human Rights Policy and Specific Management Plan

TCC has formulated various management systems with reference to labor laws and regulations, and is committed to comply with international human rights conventions, including the "United Nations Universal Declaration of Human Rights (UDHR)", the "United Nations Guiding Principles on Business and Human Rights (UNGPs)", the "International Covenant on Civil and Political Rights (ICCPR)", and the "International Covenant on Economic, Social and Cultural Rights (ICESCR)" to protect the rights and interests of employees.

The Company incorporates human rights policies into various management systems, and has established the "Human Rights Policy and Management Procedures" and the "Specific Management Plans for Human Rights Concerns", which includes all managers, employees, and job applicants as subjects of risk management. Based on identifiable human rights concerns, specific goals, actions, measures for mitigating, remedying, and education training are set; complaint channels are outlined in the management plans as well. In 2023, TCC revised the aforementioned human rights policy to eliminate unlawful discrimination and promote workplace diversity and gender equality. This ensures equal employment opportunities and protection of labor conditions. Furthermore, the Company's Remuneration Committee oversees performance, compensation, and bonus-related systems, ensuring that employee compensation and bonuses are linked to business and individual performance, with no discrimination based on gender or other personal factors, allowing employees to share in the Company's operational success.

Reporting channels:

☎ Reporting hotline: 02-8798-2000 #515

✉ Reporting email: hr@cogen.com.tw

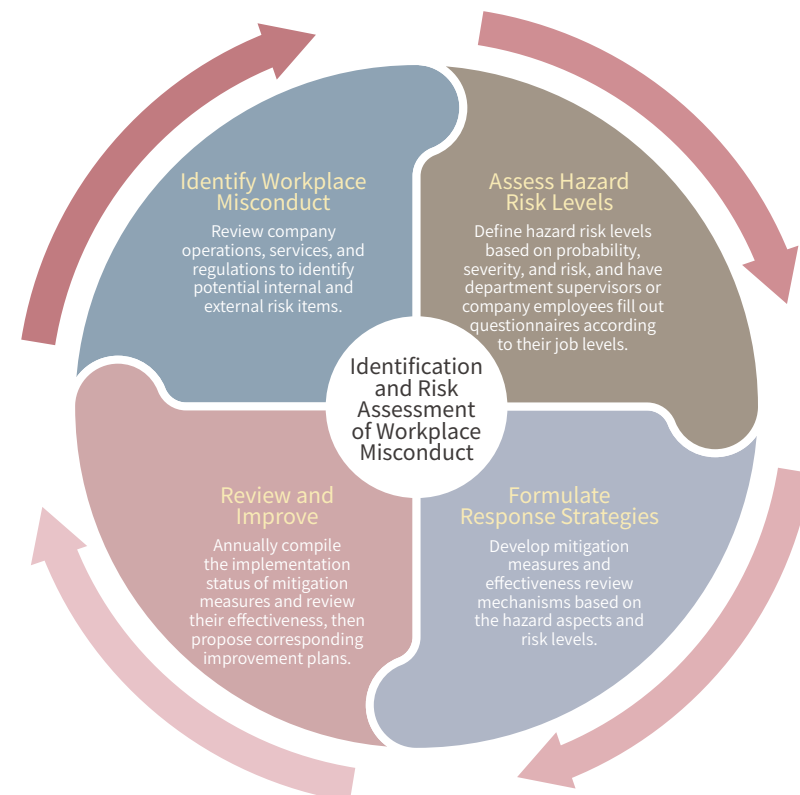
Specific Management Plans for Human Rights Concerns



Note: A case concerning a dispute over bonus calculations in 2023 is still under court review. As it is a special case, it does not affect the overall harmonious labor-management relations.

I Strengthening the Prevention of Workplace Misconduct

The Company adopts a zero-tolerance attitude toward workplace misconduct. To prevent employees from suffering physical or mental harm due to the actions of others while performing their duties, TCC has formulated the "Taipei Office Procedures for Preventing Workplace Misconduct". This aims to establish a workplace culture that is safe, dignified, free from discrimination, respectful, inclusive, and equal in opportunity. This year, TCC has continued to revise relevant content based on the Ministry of Labor's third edition of the Guidelines for Preventing Workplace Misconduct. Additionally, the highest-ranking executive has reiterated and signed a written statement on preventing workplace misconduct, which has been posted on the employee bulletin board to raise awareness about workplace misconduct among employees.



I Promotion and Courses on the Prevention of Workplace Misconduct

Course Title	Course Content	Participants	Session	Total Number of Participants	Total Hours
Prevention of Workplace Misconduct (for employees)	Online Seminar Introduction to the concept and types of workplace misconduct, and how to respond to workplace misconduct	Employees of the Taipei Office	1	79	79
Creating Emotional Connections in the Workplace	In-Person Seminar Guiding supervisors to identify and respond to workplace misconduct from a boundary perspective, and methods to assist and support employees facing related difficulties	Supervisors	2	27	40.5



4.3 Healthy Workplace

In addition to the regular health checkups that are better than those required by laws and regulations, the safety and health-related measures provided by TCC's Headquarters Office are as follows:

TCC's Headquarters Office - Equipment and Environmental Safety Inspection

- Every two years, a professional public safety company is entrusted to carry out public safety inspections, and reports shall be made in accordance with regulations.
- A fire safety inspection is conducted once a year, and one related drill is scheduled.
- Building carpet cleaning as well as building disinfection is organized twice a year. The frequency of cleaning and disinfection will increase if necessary.
- Conduct two work environment monitoring operations per year.
- Perform environmental safety inspections for equipment annually.
- Fire equipment self-inspection is carried out quarterly and declared through the verification of a fire safety engineer.
- Carry out cleaning and garbage collection (recycling) daily for each floor of the office as well as the public areas.
- Improve the office environment from time to time based on needs, such as increasing the frequency of environmental inspections, enhancing cleaning, and installing carbon filters.
- Air filters are installed in each area and filters are regularly replaced to protect the health of employees.

TCC's Headquarters Office - Health Consultation and Health Promotion Activities

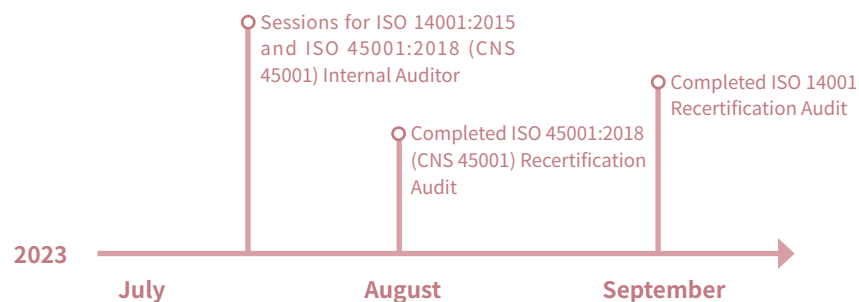
- A health management center is set up on the first floor of the building.
- Activities such as healthy living sessions are organized in the building on an occasional basis for employees to sign up.
- In 2023, an external consulting psychologist was invited to deliver "Education and Training on Interpersonal Relationships and Communication Skills", and stress-relief courses were provided for employees.
- TCC regularly arranges for contracted nurses and doctors to provide on-site services such as health education and consultations.

Starting from 2023, TCC has regularly arranged for contracted nurses and doctors to provide on-site services, promoting workplace health risk management, enhancing employee health awareness and vitality, and creating a healthy workplace. The on-site nurses analyze and manage employees hierarchically based on their health checkups and physical examination reports. In 2023, they provided individual consultations and health education guidance to 29 employees.



Completing the Implementation and Verification of ISO 45001 and CNS 45001: 2018 Occupational Safety and Health Management Systems

Guan Tian Plant attaches great importance to the occupational safety and health of workers. In addition to the establishment of ISO 9001 Quality Management System and ISO 14001:2015 Environmental Management System, in order to effectively manage workplace safety and health, and implement the policy of "Respect for Life, Work Safety First, and Care for Health and the Environment", ISO 45001 and CNS 45001:2018 Occupational Safety and Health Management Systems were further established in 2019, creating high-quality, environmentally friendly and safe products with complete quality, environment, as well as occupational safety and health management.



The occupational safety and health management system of Guan Tian Plant covers not only its employees but also contractors, individual or self-employed workers, dispatch workers, suppliers, customers, and other business partners. Furthermore, Guan Tian Plant uses the hazard identification risk assessment method to identify occupational hazards with serious occupational injury risks. Based on the description and procedure of each operation, possible causes/activities and types of hazards, we identify the severity, occurrence and operation frequency to calculate the risk value, and to identify the risk level for hierarchical control. Finally, risk control measures are used to eliminate other occupational hazards and minimize the risk.

Implementation of ISO 45001 Occupational Safety and Health Management System

Chapter 4 & Chapter 6: Organizational Background and Planning

- Examine the preliminary review structure, collect issues, confirm the supplementary documents and formulate plans.
- Establish a more complete occupational safety management system and share experience with members of the safety and health family.
- Uphold and fulfill the goal of zero work injuries for Guan Tian Plant.

Chapter 9: Performance Evaluation

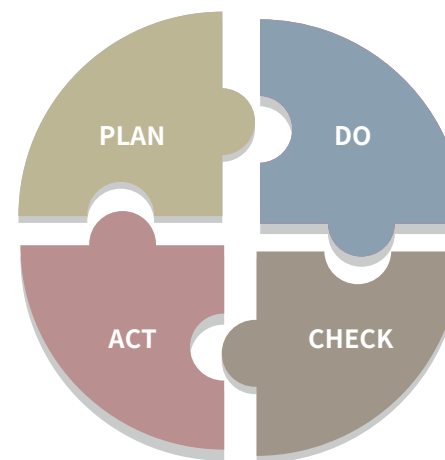
- A management review meeting is held annually to confirm the applicability and effectiveness of the management system.
- Implement internal audits regularly to ensure the effective implementation and continuity of the system.
- Check the achievement rate of each program based on "Procedure for Identification of EHS Objectives, Targets and Programs".

Chapter 7 & Chapter 8: Support and Operation

- Identify compliance with regulations on a quarterly basis.
- Conduct education and training by a professional consulting company, and perform hazard risk identification for various operations of the plant.
- Combine with ISO 14001 for internal and external communication, meeting the needs and expectations of stakeholders.

Chapter 10: Improvement

- Perform control and correction according to Procedures for Corrective and Preventive Action.
- Entrust consulting company to provide guidance and certificate renewal services for improvement.
- Maintain and preserve documented information as the evidence of continuous improvement.



1998-2023
—Achievement—
Zero Work Injuries

TCC's Guan Tian Plant holds monthly occupational safety and health meetings to review and promote occupational safety-related matters from the previous month and develop future work plans. Moreover, "zero work accidents" has been set as an annual key performance indicator and is rigorously implemented. Since the establishment of the Guan Tian Plant in 1998, there has been no work-related injuries. As of December 2023, the plant has recorded a total of 1,115,727 consecutive hours without occupational injuries, achieving the milestone of one million hours without injury. We will continue to strive toward the goal of 1.5 million hours with zero work-related injuries.

Regarding the construction safety of contractors in Guan Tian Plant, the "Operation Management Guidelines for Contractors Entering Guan Tian Plant", the "Confined Space (Oxygen Deficiency) Operation Guidelines for Guan Tian Plant" and the "Fire Operation Guidelines for Guan Tian Plant" were established to ensure the safety of all personnel working in Guan Tian Plant. An occupational safety and health meeting between the joint operational coordinating organization and contractors is held prior to the annual overhaul, while hazard notification education and training for contractors performing annual overhaul would be conducted before entering the plant. Furthermore, contractors and relevant units are required to hold a pre-operation industrial safety meeting, and apply for fire operation approval. For works in confined spaces, in addition to application beforehand, the concentration of oxygen, hydrogen sulfide and other harmful gases on site must be constantly measured before and during the operation, and ventilation and respiratory protection must be properly implemented as well.

Cogeneration Safety and Health Family

The Cogeneration Safety and Health Family (CSHF) was established in January 2019, with Guan Tian Plant as the core enterprise, and in collaboration with manufacturers in the Guantian Industrial Park. It is responsible for conducting occupational safety education and training, providing on-site safety guidance to members of the CSHF, facilitating information exchange, and sharing resources. By 2023, members of the CSHF had increased to 26 companies. Through education and training, and on-site visits by advisors of the Labor Affairs Bureau as well as occupational safety personnel of the Company, relevant improvement suggestions are provided to create a zero-injury work environment together with members of the CSHF. In 2023, as the COVID-19 pandemic eased, one in-person training session was arranged. Additionally, seven occupational safety visits were conducted for members of the CSHF, assisting 25 member factories in enhancing their occupational safety and health practices. The Company has received the Outstanding Performance Award of the Safety and Health Family for four consecutive years.



Excellent Unit in Occupational Safety and Health

To promote a culture of excellent occupational safety and health, TCC's Guan Tian Plant collaborated with the Tainan City Government Fire Bureau in January 2023 to conduct the "119 Fire Safety Promotion Event". In August, the plant hosted occupational safety management exchange activities with the Repair Squadron of the First Tactical Fighter Wing of ROCAF and the Chang Jung Christian University EMBA program. Moreover, employees assisted the Southern District Health Service Center in preparing the 2023 Workplace Health Management Case Study Manual.



Environmental Safety and Health Management

TCC attaches great importance to the safety and health of employees' working environment. In addition to complying with occupational safety and health standards, the Company also formulates the "Industrial Safety Management Operation Regulations", the "Health Examination Management Operation Regulations", and the "Dangerous Equipment and Machinery Regular Inspection Management Operation Regulations" to protect the safety and health of its employees.

Relevant measures of TCC's Guan Tian Plant are as follows:

TCC's Guan Tian Plant - Equipment and Environmental Safety Inspection

- Professional institutions are entrusted to inspect and report buildings' public safety each year.
- Entrust professional institutions to carry out operation environment monitoring semiannually, including: measurement of sulfuric acid tanks, dust measurement, noise dose measurement, and general noise measurement.
- Fire and disaster simulation drills are conducted twice a year.
- Carry out monthly self-inspection of security and monitor operation for public hazardous substances, and report to the local fire department. Continuously review and improving the on-site environment to ensure workers' safety.



TCC's Guan Tian Plant - Health Examination and Management Plan

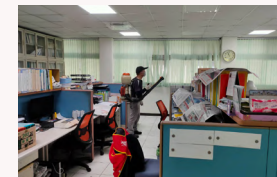
- Provide sufficient health information with on-site health services and advice from medical institutions, formulate annual health service plans, and organize setting and management of first-aid kits.
- Implement a health management system that classifies abnormalities detected during health checkups and arrange for further assessment, health education, and work adjustment if necessary.
- In 2023, a total of 12 health checkup and management service sessions were conducted throughout the year.



- Organized the Tainan City 2023 Guantian Leisure Walking Activities for Workers: "Occupational Accident Prevention, Safe Walk in Anping" and "Achieving Industrial Safety to Ensure Safe and Sound" to promote workplace safety and encourage employees to engage in leisure activities, encouraging the habit of exercising to enhance their physical and mental well-being.

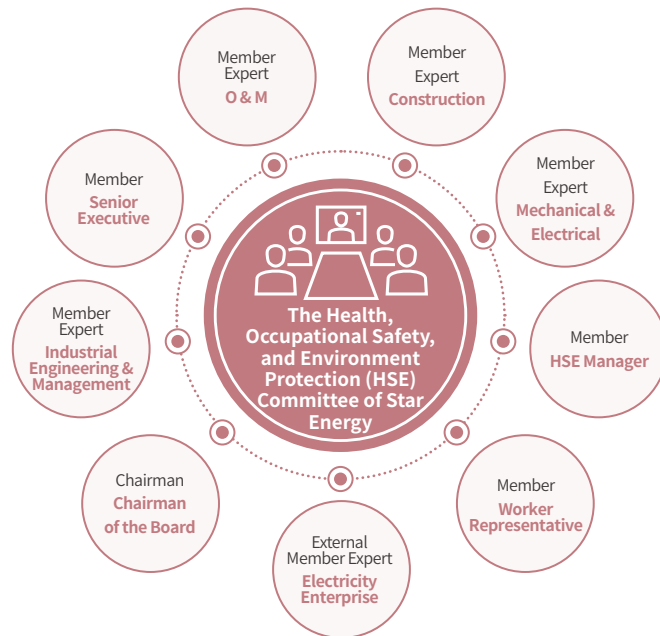


- Workplace Epidemic Prevention – Dengue Fever Control: Enhanced environmental cleanup and disinfection to prevent the continued spread of the dengue fever epidemic and prevent cross-infection. Maintained indoor environmental hygiene and conducted comprehensive cleaning and disinfection of the entire plant area.



Star Energy Passing the Verification for CNS 45001 and TOSHMS (Taiwan Occupational Safety and Health Management System)

Star Energy established the "Health, Safety and Environment (HSE) Management Office" in 2020. Since then, the "Environmental Protection and Occupational Safety and Health Committee" is gathered quarterly. At the beginning of each year, a management review meeting is held to discuss issues related to the prevention of occupational injuries and diseases, various environmental protection, safety and health proposals, and the review of occupational safety and health plans. As a result, the Company's overall occupational safety performance has significantly improved. The concepts of occupational safety, health, and environmental protection are reinforced through education, training, and drills, enhancing the awareness of all employees. This helps to establish a workplace culture of ESG and sustainable operations.



To encourage health promotion, the Company executed health management, occupational disease prevention, and health promotion services from an employee care perspective. In 2023, a total of 8 health promotion seminars, 22 health promotion campaigns, and 78 on-site services by doctors and nurses were conducted, achieving good results. The Company also received the Badge of Accredited Healthy Workplace – Health Promotion.



To implement the policy of "respecting life, industrial safety first, caring for health, and environmental protection" and enhance the quality and effectiveness of environmental safety and health management, Star Energy has utilized a mobile app for on-site management and encouraged the reporting of near-miss incidents to prevent potential accidents. The Company has launched a series of occupational safety, health, and environmental protection training courses, including ISO management system auditor courses, occupational safety and health manager training, training of air pollution control, wastewater, and waste management, Global Wind Organisation (GWO) training, and various drills and promotional activities. This ensures full participation and continuous improvement in the field of occupational safety and health.

Introduction and Implementation of Star Energy's Zero Occupational Accident Management

From a construction management perspective, providing a safe working environment is crucial to ensure the smooth progress of a project. Through collaborating with foreign companies, it has been discovered that the key to achieving zero occupational accidents lies in "implementation".

Star Energy consistently implements various measures for hazard and risk prevention, including Risk Assessment and Method Statement (RAMS) before and during operations. It also conducts short-period toolbox meetings and pre-task briefings (TBM-KY: Tool Box Meeting - Kiken Yochi) before daily work to enhance safety awareness. In addition, it prioritizes site organization and housekeeping to create a safe working environment. By adopting preventive measures and integrating them into daily management practices, Star Energy effectively prevents accidents and significantly improves work efficiency and project progress.

Statistics on Occupational Accidents and Absence Rate

Employees		TCC's Taipei Office	Guan Tian Plant	Star Energy
Total Working Hours	Male	85,904	85,688	282,808
	Female	74,712	6,024	94,272
	Total	160,616	91,712	377,080
Work-Related Fatality Rate	Male	0	0	0
	Female	0	0	0
	Total	0	0	0
High-Consequence Work-Related Injury Rate	Male	0	0	0
	Female	0	0	0
	Total	0	0	0
Total Recordable Incident Rate (TRIR)	Male	0	0	0
	Female	0	0	0
	Total	0	0	0
Lost Day Rate (LDR)	Male	0	0	0
	Female	0	0	0
	Total	0	0	0
Absence Rate (AR)	Male	0.51%	0	1.50%
	Female	2.20%	0	1.65%
Number of Near-Miss Incidents	Male	0	0	4
	Female	0	0	0
	Total	0	0	4
Near Miss Frequency Rate (NMFR)	Male	0	0	2.829
	Female	0	0	0
	Total	0	0	2.122

Other Workers (Contractor/Suppliers)		TCC's Taipei Office	Guan Tian Plant	Star Energy
Total Working Hours	Male	-	55,029	423,008
	Female	-	6,367	74,648
	Total	-	61,396	497,656
Work-Related Fatality Rate	Male	-	0	0
	Female	-	0	0
	Total	-	0	0
High-Consequence Work-Related Injury Rate	Male	-	0	0
	Female	-	0	0
	Total	-	0	0
Total Recordable Incident Rate (TRIR)	Male	-	0	0
	Female	-	0	0
	Total	-	0	0
Lost Day Rate (LDR)	Male	-	0	0
	Female	-	0	0
	Total	-	0	0
Number of Near-Miss Incidents	Male	-	0	0
	Female	-	0	0
	Total	-	0	0
Near Miss Frequency Rate (NMFR)	Male	-	0	0
	Female	-	0	0
	Total	-	0	0

Note: 1. Work-related fatality rate = the number of fatalities as a result of work-related injury/total working hours x 200,000

2. High-consequence work-related injury rate = number of high-consequence work-related injuries (excluding fatalities)/total working hours x 200,000

3. Total Recordable Incident Rate (TRIR) = number of recordable work-related injuries/total working hours x 200,000

4. Absence Rate (AR) = (Number of days on work injury leave + sick leave + menstrual leave + days of absence due to injury or illness resulting in loss of work capacity) / total working days x 100%

5. Lost day rate (LDR) = Lost days due to work-related injury/total working hours x 200,000

6. Near miss frequency rate (NMFR) = number of near-miss incidents/total working hours x 200,000

7. In 2023, Star Energy had 8 accidents due to commuting, which were not included in the calculation of the work injury rate in the table.

CHAPTER 5

Social Care, Local Engagement



5.1 Education Investment for New Generation

5.2 Social Care and Participation

5.3 Giving Back to Local Communities

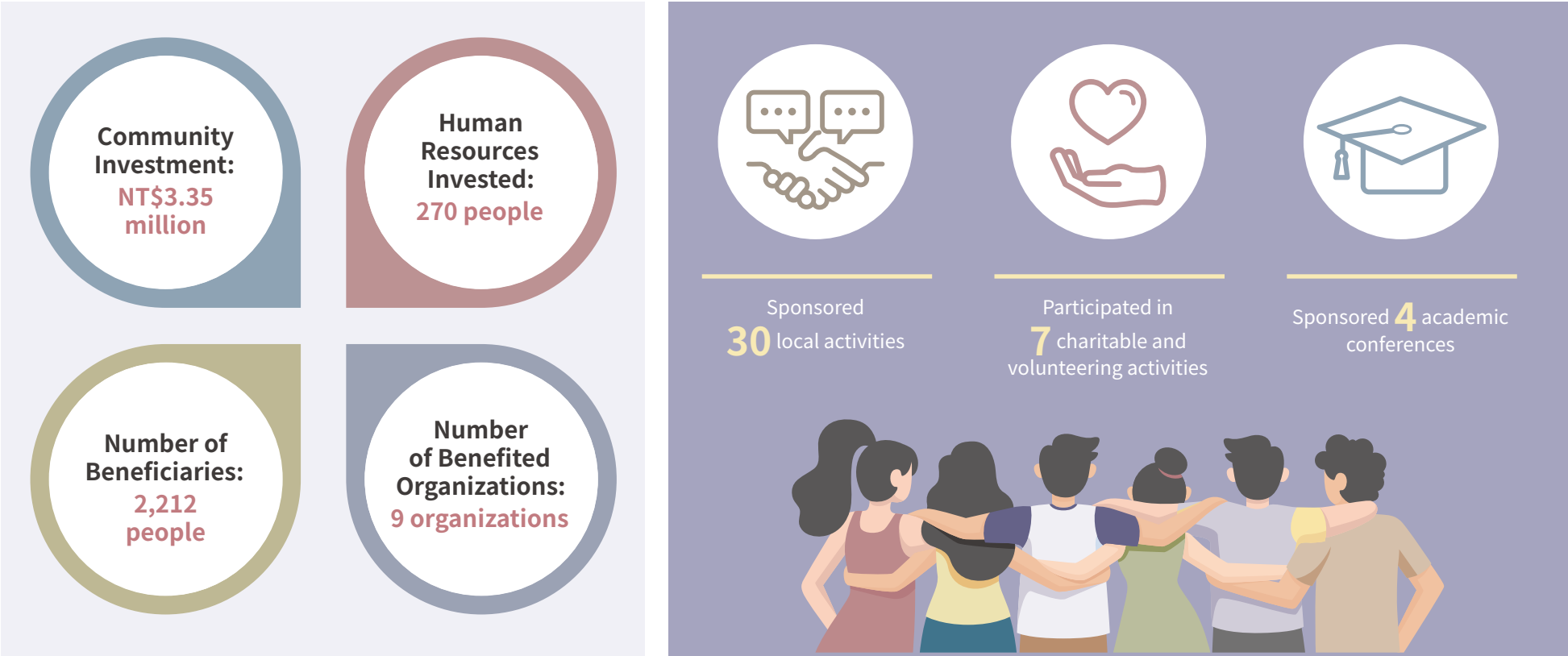


✦ Community investment exceeded NT\$3.35 million

✦ Human resources invested: About 270 people

✦ Approximately 2,212 beneficiaries, benefiting a total of 9 organizations

TCC Group embraces the philosophy of "taken from society, giving back to society". By investing in talent in the energy sector, supporting social welfare activities, and giving back to local communities, TCC actively strives to achieve four United Nations Sustainable Development Goals (SDGs): "No Poverty", "Good Health and Well-being", "Quality Education", and "Reduced Inequalities", ensuring the continuation of a positive cycle. Based on the framework of Business for Social Impact (B4SI), TCC quantified its social investment in terms of monetary contributions, human resources, and the number of beneficiaries in 2023.



5.1 Education Investment for New Generation

Power Grid Talent - Linking Resources from Industry, Academia, and Research Institutes to Develop Talent in the Power Industry

In response to the rapid growth of global green energy, followed by the expansion of smart grids, energy storage systems, and innovative power services, TCC Group continues to focus on the development of the energy industry. To address the talent gap in the domestic energy sector, TCC has formed the "Power School and Talent Development Alliance" in collaboration with the Industrial Technology Research Institute (ITRI). This alliance provides scholarships and professional evaluations, aims to cultivate emerging talents in the power grid sector while gathers outstanding power professionals from all sectors, and creates diverse employment opportunities.

To cultivate elites in this career field, the "Power School" was established to provide practical professional training courses and customized corporate programs. Cooperating with universities, it provided interdisciplinary courses in sustainable energy and smart grids through digital platforms. The alliance also established the "Power School and Talent Development Alliance Scholarship". More than NT\$1 million in scholarships are awarded each year to students with excellent achievements in this area of expertise, with the goal of encouraging outstanding talents from the energy industry to conduct research, attracting more students and professionals to join in the career field, thereby boosting the development of Taiwan's energy industry.



Since joining the "Power School and Talent Development Alliance" in 2019, TCC has continued to sponsor NT\$100,000 in scholarships annually and appointed internal experts as judges of the "Power School". Moreover, TCC has sponsored the "Liu Shu-sheng Memorial Award" of the Taiwan Power and Energy Engineering Association, which recognizes outstanding power professionals under the age of 35 working in domestic power industry. This initiative helps enhance the technical skills within the industry, promotes interaction and exchange between industries, universities, and research institutes, and encourages more young people to engage in jobs that are related to electric and energy engineering.

University and Graduate School Scholarships

To assist students and cultivate outstanding talent, TCC's subsidiary, Star Energy, has established scholarships for related programs in university and graduate school. These scholarships encourage outstanding students to pursue academic excellence and provide guaranteed positions for recipients upon graduation, allowing those interested in joining the industry to contribute their knowledge. Relevant information is announced on the Company's website.



5.2 Social Care and Participation

TCC has been operating power plants for a long time, with the principle of ensuring stable power supply as well as coexistence and co-prosperity with society. In addition to reducing the impact of operational activities on the environment, TCC actively aligns itself with local communities and assists in community development. It fulfills its corporate social responsibility by being actively involved in caring for disadvantaged groups, promoting culture and education, and encouraging physical activities. TCC has also established a volunteer team and provides 3 days of volunteer leave annually to encourage employees to participate in the Company's volunteer activities.

2023

TAYA Marathon

Guan Tian Plant has been operating in Tainan for over 20 years, where the Wushantou Photovoltaic Power Plant is also located. Upholding the philosophy of local participation, TCC and its shareholder company, Ta Ya Electric Wire & Cable, co-organized the TAYA Marathon on March 26, 2023. To demonstrate local engagement, a total of 38 employees participated in the event, collectively promoting the idea of physical activities.



Vegan Activities on Earth Day

TCC has been holding the well-received vegan activities monthly since May 2020, calling employees to reduce carbon emissions by going vegan for a day. In 2023, there were more than 2,000 participants in the vegan activities.

On Earth Day, TCC expanded its vegan activity, encouraging employees to cherish food and adopt a low-carbon and environmentally friendly mindset – "Making small choices in our daily lives can achieve a more earth-friendly lifestyle".



Tianzhong Marathon

The Tianzhong Marathon in Changhua is a well-known sports event in Taiwan. In addition to the road race, the event also promotes local street foods and culture, receiving widespread acclaim since its inception. This event is dedicated to promoting sustainable sports by actively reducing waste and conducting carbon footprint assessments, making it one of the first sports events in Taiwan to receive the Ministry of Environment's carbon footprint label. Since TCC's Chang Bin Gas-Fired Power Plant and renewable energy projects are located in the Changhua area, they have been sponsoring and participating in local activities for years, embodying the principles of co-prosperity and inclusion with the local community.



Hope Reading Program – Corporate Volunteer Service partnered with the Commonwealth Magazine Education Foundation for Schools in Rural Area

The Commonwealth Magazine Education Foundation launched the Hope Reading Program in 2004. To date, the program has provided volunteer services to over 200 schools in rural areas, including book donations, reading competitions, reading volunteer services, and teacher training programs, to continuously promote reading education in rural areas. To fulfill its commitment towards disadvantaged groups and social welfare, the Company has partnered with the Commonwealth Magazine Education Foundation. Our employees are trained to become reading volunteers and visit elementary schools in Fangyuan, Changhua County to conduct reading sessions on sustainability, as well as energy-related hands-on activities.



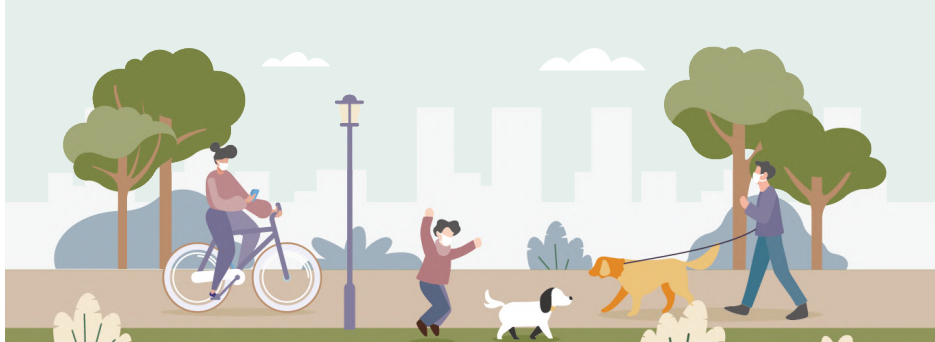
5.3 Giving Back to Local Communities

TCC's headquarters, Guan Tian Cogeneration Plant, and the three invested gas-fired power plants are located in Taipei, Tainan, and Changhua. Being in operation for over a decade, the power plants have been actively participating in and sponsoring community activities; therefore, we have established good relationships with the local communities as well as the neighboring townships.

In recent years, Star Energy has undertaken a number of EPC projects for renewable energy in the Changhua area. Correspondingly, it also actively participates in local activities, assists with local construction and development, and gives back to society with practical actions.

Guan Tian Plant

To support local development, Guan Tian Plant has been actively participating in community and neighborly activities. Since 2019, Guan Tian Plant has adopted the newly established Erzhen Park in Erzhen Village, Guantian District, taking responsibility for its environmental maintenance. This provides the villagers with a clean and comfortable space for residents, thereby fulfilling its commitment to giving back to the local community.



Star Energy Power

Chang Bin Gas-Fired Power Plant upholds the belief of maintaining friendly relationships with the local and neighboring communities. The Plant actively participated in various local cultures and festivals in 2023, committed to fulfilling its corporate social responsibility to care for local culture and development.



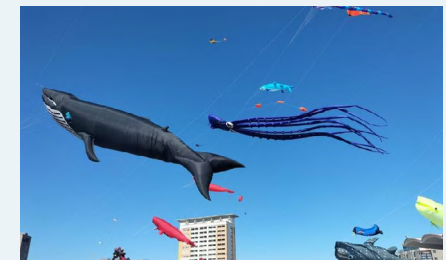
Mid-Autumn Festival Celebration and
Promotion of Energy Saving/
Carbon Reduction



Dragon Boat Festival Celebration



Beach Clean-Up for Ocean Protection



Kite Festival

Sun Ba Power

A company is like a small society. It not only acts as an economic driver and provides stable job opportunities for employees, but also needs to be a positive force supporting social growth on various levels. By growing together with the society and contributing to its progress, a company can achieve the goal of sustainable business operations.

Fong Der Gas-Fired Power Plant is located in Shanshang District, Tainan City. By participating in local activities, it communicates with residents on issues such as environmental protection, public safety, and neighborhood contributions. The Plant sponsors school funding for various exploratory, artistic activities, and after-school care, reducing the burden of working parents. It plans to focus on after-school care and clubs, bilingual education, project-based learning, reading comprehension strategies, and customized learning to cultivate future talent. Additionally, the Plant sponsors public infrastructure, community development associations, and temple blessing cultural festivals, and adopts air quality purification zones and public restrooms. The Plant also implements tree planting programs to green and beautify the streets and cityscape.



Dining with Seniors



Participation in Community Activities



Participation in Local Temple
Celebration Events



Sponsoring Public Restroom
Maintenance and Repair

Star Buck Power

To strengthen the relationship with neighboring communities, enhance the well-being, promote local harmony, contribute to local prosperity, and build the Company's reputation, Star Buck Gas-Fired Power Plant actively engages in corporate social responsibility. This includes caring for local disadvantaged groups and participating in public welfare activities. In 2023, the Plant participated in community events including the New Year's Day/Lantern Festival celebrations organized by nearby towns, adoption of streetlights for local infrastructure development, graduation ceremonies of township kindergartens, and power-related development. Aligned with government policies, it also sponsored the advocacy for energy conservation. In doing so, Star Buck Power shows its dedication for community development and assisted in the preservation of local festivals and cultural traditions.



Donating Suspended Meals



Engaging in Public Welfare



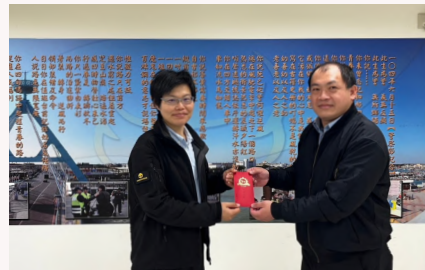
Sponsoring
Streetlights



Huashan Social Welfare Foundation Volunteers

Star Energy

To fulfill its corporate social responsibility, Star Energy actively participates in local and community activities. In 2023, it proactively assisted Guishe Community in Chiayi County by installing traffic delineator posts at critical intersections to ensure the safety of local residents, earning the appreciation of the community. Additionally, adhering to the philosophy of community inclusion and giving back to the locals, Star Energy actively sponsored and participated in temple celebrations, neighborhood watch patrols, the Linghe Women's Workshop, and trips organized by the Senior Citizen's Welfare Association, continuing to uphold the principle of people-oriented development, as well as coexistence and co-prosperity with the local community.



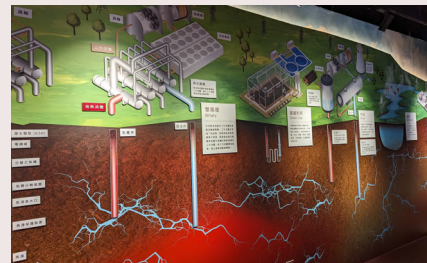
Miaoli Wind

To strengthen local connections and establish harmonious relationships within the community, Miaoli Wind sponsored and participated in various community activities. These included the Community Development Association's volunteer barbecue event, the Mid-Autumn Festival celebration, and the donation event at Qinghai Temple. It aimed to foster diverse interactions and establish a strong partnership with the community, thereby fulfilling the concept of corporate social responsibility and giving back to society.



Chingshuei Geothermal Power

The Chingshuei Geothermal Education Center at Chingshuei Geothermal Park began trial operations in October 2023, featuring a history exhibition and an industry simulation area that introduce and promote geothermal energy knowledge. The power plant integrates local tourism, guided tours, and environmental experience with hot spring leisure facilities, combining education with entertainment. Furthermore, the power plant's tail water can also serve as the water source for the park's hot spring resort. The integration of power plant facilities with the geothermal park's recreational functions generates nearly 900,000 visits annually, making it the first geothermal power park that combines recreation, environmental protection, education, and tourism experiences in the country. The establishment and operation of the geothermal power plant has helped integrate the park into the local economy, benefiting local residents. In 2023, a total of 39 domestic educational group tours and corporate visits were held, contributing to geothermal research and the future promotion of geothermal energy in Taiwan.



Integrating Chingshuei Geothermal Power Plant with the Community



● Localization of Talent

When recruiting personnel, priority is given to local talent from Yilan. As of the end of 2023, the plant employs 14 operational and support personnel, 13 of whom are registered residents of Yilan, achieving a talent localization rate of over 90%.



● Localization of Industry

Yilan is an important region for geothermal resources, with significant potential for geothermal development. Since the launch of commercial operations in late 2021, Chingshuei Geothermal Power Plant has contributed to the promotion and utilization of geothermal energy in Yilan and other potential areas in Taiwan. It serves as a benchmark project for domestic energy independence and geothermal power generation.



● Localization of Benefits

- (1) **Public Welfare Contributions:** Public welfare and disadvantaged groups from Yilan, as well as residents of Datong and Sanxing Township are invited to visit the Chingshuei Geothermal Power Plant and the Chingshuei Geothermal Education Center for free.
- (2) **Friendly Neighborhood:** Since commencing commercial operations, the plant has provided sponsorships for local events.
- (3) **Academic Collaboration and Exchange:** The plant adopts a two-way collaborative model to engage with local academic institutions and groups in Yilan. Through co-op programs, it trains seed instructors in renewable energy to teach general courses at various schools.



Sustainability Disclosure Indicators for the Oil,
Electricity and Gas Industry

Climate-Related Information for TWSE Listed
Companies

SASB Index

GRI Standards Content Index

Independent Assurance Opinion Statement

Sustainability Disclosure Indicators for the Oil, Electricity and Gas Industry

No.	Indicator	Disclosure	Remark
1	The number of oil refineries in densely populated areas	The Company does not have an oil refinery.	
2	Total water withdrawal and total water consumption	The total water withdrawal of the Guan Tian Plant is 761,321 m ³ , and the total water consumption is 701,922 m ³ . There is no independent water meter in the headquarters office of TCC, and the water bill is only apportioned by the area. Hence, there is no exact water consumption data for reference.	Please refer to section 3.2.2
3	The weight of hazardous waste generated and the percentage of waste recycled	The waste produced by TCC's Guan Tian Plant is non-hazardous waste.	Please refer to section 3.2.1
4	Explanation of the number and rate of occupational accidents	TCC did not experience any occupational injury incidents in 2023.	Please refer to section 4.3
5	Risk management policies for significant events	TCC has formulated "Risk Management Policy and Procedures" and "Risk Management Implementation Plan" to incorporate and control various risks related to investment, operations, management, climate change, and unethical behavior. The Company reviews risk management measures regularly, and reports the implementation and operation of these measures to the Board of Directors and the Audit Committee at least once a year.	Please refer to sections 1.3 and 3.1.1
6	Production volume of main products by product category	The Company's main product is electricity, and the electricity sold by the Guan Tian Plant in 2023 was 199 GWh.	Please refer to section 2.3.1



Climate-Related Information for Listed Companies

Implementation Status of Climate-Related Information

Item	Corresponding Section and Implementation Status	Item	Corresponding Section and Implementation Status
1. Describe the board of directors' and management's oversight and governance of climate-related risks and opportunities.	1. Please refer to section 3.1.1.	6. If there is a transition plan for managing climate-related risks, describe the content of the plan, and the indicators and targets used to identify and manage physical risks and transition risks.	6. Please refer to Chapter 3. The Company is committed to developing high-efficiency, low-pollution power generation models and expanding the development of its renewable energy businesses. We have set short-, medium-, and long-term targets for the installed capacity of renewable energy investments, as well as related KPIs for energy conservation and carbon reduction. Future business strategies will include environmental sustainability measures, such as establishing a greenhouse gas management mechanism, increasing the use of co-firing SRF to reduce coal consumption, performing regular maintenance and evaluation of existing equipment, and assessing the renewal and replacement of units to improve energy efficiency and reduce greenhouse gas emissions.
2. Describe how the identified climate risks and opportunities affect the business, strategy, and finances of the business (short, medium, and long term).	2. Please refer to section 3.1.1. Changes in regulations and an increased frequency of climate disasters may lead to increased operating costs, project delays, and investment misalignment in the short term. The government announced Taiwan's goal of net-zero emissions by 2050, and in February 2023, it revised the "Greenhouse Gas Reduction and Management Act" to the "Climate Change Response Act". The related promoted policies as well as global carbon reduction trends are favorable for the Company's renewable energy-related businesses. In the medium to long term, the increased likelihood of extreme weather events and changes in climate patterns pose operational risks for enterprises.	7. If internal carbon pricing is used as a planning tool, the basis for setting the price should be stated.	7. The Company's main business focuses on power plant operations and related electricity services. In recent years, we have actively invested in and developed renewable energy-related businesses, focusing on low/zero carbon power generation. Therefore, we have not yet implemented internal carbon pricing.
3. Describe the financial impact of extreme weather events and transformative actions.	3. Please refer to section 3.1.1.	8. If climate-related targets have been set, the activities covered, the scope of greenhouse gas emissions, the planning horizon, and the progress achieved each year should be specified. If carbon credits or renewable energy certificates (RECs) are used to achieve relevant targets, the source and quantity of carbon credits or RECs to be offset should be specified.	8. In accordance with the 9 financial materiality topics, the Company has established climate adaptation and mitigation policies and related KPIs. These cover activities necessary for operations, including energy efficiency, water conservation, fossil fuel substitution rate, greenhouse gas management, and the development of renewable energy. TCC also plans to promote net-zero/low-carbon transition, air pollution control technologies, waste management, and energy supply stabilization. For details on the scope, planning timelines, and target setting of greenhouse gas emission management, please refer to the "Energy Management and Circular Economy" in the Material Topics Management Approach, section 3.1, and the table below. In addition to developing renewable energy, our subsidiary TCC Green Energy has provided green electricity retailing services to businesses and offered renewable energy certificate acquiring services.
4. Describe how climate risk identification, assessment, and management processes are integrated into the overall risk management system.	4. Please refer to sections 1.3 and 3.1.1.	9. Greenhouse gas inventory and assurance status, reduction goals, strategies, and specific action plans (to be filled in the table below).	9. Please refer to section 3.1.2. The results of TCC's Guan Tian Plant's greenhouse gas inventory have been verified by an external third-party auditing organization. The verification process follows standards such as ISO 14064-1. TCC's Taipei office and subsidiaries have also completed greenhouse gas inventory and verification planning in accordance with the "Sustainable Development Roadmap for TWSE/TPEx Listed Companies".
5. If scenario analysis is used to assess resilience to climate change risks, the scenarios, parameters, assumptions, analysis factors and major financial impacts used should be described.	5. To gradually implement IFRS S1 and S2 disclosure standards, the Company conducted an advance financial materiality analysis in 2023. In the first year, we referred to the S1 framework, using the sustainability impact materiality assessment to identify 22 sustainability topics. We also considered the IPCC scenarios and TCCIP evaluation reports, and compared various indicators in the SASB Electric Utilities & Power Generators standard, ultimately selecting 9 financial materiality topics. In 2023, we qualitatively analyzed the position of various financial materiality topics within the value chain, the timing of impact occurrence, potential financial risks and opportunities, and financial impact factors. This was done to disclose the relationship between sustainability and financial information. In the future, we will follow the S2 standards to establish quantitative methods and disclose the financial impact of climate-related risks and opportunities.		

1-1 Greenhouse Gas Inventory and Assurance Status

1-1-1 Greenhouse Gas Inventory Information

Specify the greenhouse gas emissions (in metric tons of CO₂e), intensity (metric tons of CO₂e per NT\$1,000,000), and data coverage for the most recent 2 years.

The table below shows the greenhouse gas inventory information for TCC's Guan Tian Plant. TCC's Taipei office and the subsidiaries listed in the consolidated financial statements will complete assurance in accordance with the timeline set in the "Sustainable Development Roadmap for TWSE/TPEX Listed Companies".


Region	Scope	2022	2023
TCC Guan Tian Plant	Scope 1 (metric tons of CO ₂ e)	326,786	337,192
	Scope 2 (metric tons of CO ₂ e)	6,181	3,813
	Emission Intensity (Steam) (metric tons of CO ₂ e/metric ton)	0.362	0.350
	Emission Intensity (Electricity) (metric tons of CO ₂ e/kWh)	0.001050	0.001017

Note: (1) The 2023 data comes from the preliminary internal inventory, with carbon emissions calculated using the national electricity emission factor of 0.494 kgCO₂e/kWh for 2023.
(2) The types of gases for Scope 1 and Scope 2 mentioned above include: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), and nitrogen trifluoride (NF₃).

1-1-2 Greenhouse Gas Assurance Information

Describe the assurance status for the most recent 2 years as of the annual report publication date, including the assurance scope, assurance organization, assurance standards, and assurance opinions.

The table below shows the greenhouse gas verification status for TCC's Guan Tian Plant. TCC's Taipei office and the subsidiaries listed in the consolidated financial statements will complete assurance in accordance with the timeline set in the "Sustainable Development Roadmap for TWSE/TPEX Listed Companies".

Year	Verification Scope	Verifying Organization	Verification Standards	Greenhouse Gas Verification Statement
2022	TCC's Guan Tian Plant	SGS Taiwan Ltd.	Compliance with the following standards is required for the verification of greenhouse gases: <ul style="list-style-type: none">ISO 14064-1:2006 Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removalRegulations Governing the Inventory and Registration of Greenhouse Gas Emissions by the Environmental Protection Administration (EPA) (January 5, 2016)Guidelines for Greenhouse Gas Emissions Inventory (May 2022)Guidelines for the Verification of Greenhouse Gases by the Environmental Protection Administration (EPA) (December 2010)Relevant regulations of the National Greenhouse Gas Registry Platform	
2023	TCC's Guan Tian Plant	SGS Taiwan Ltd.	Compliance with the following standards is required for the verification of greenhouse gases: <ul style="list-style-type: none">ISO 14064-1:2018 / CNS 14064-1:2021Regulations Governing the Inventory, Registration, and verification of Greenhouse Gas Emissions (September 14, 2023)Guidelines for Greenhouse Gas Emissions Inventory (February 22, 2024)Guidelines for the Verification of Greenhouse Gases by the Environmental Protection Administration (EPA) (December 2010)	The Greenhouse Gas Verification Statement is expected to be issued in July 2024.

1-2 Greenhouse Gas Reduction Goals, Strategies, and Specific Action Plans

Specify the base year and its data for greenhouse gas reduction, reduction targets, strategies, specific action plans, and the progress toward achieving the reduction targets.

(1) Greenhouse Gas Reduction Base Year

The Company will complete the inventory for the parent company and subsidiaries listed in the consolidated financial statements in accordance with the regulatory timeline and set the base year.

(2)Greenhouse Gas Emission Reduction Targets, Strategies, Specific Action Plans, and Progress Towards Targets

The Company closely monitors climate change issues and domestic/international energy trends. To mitigate the direct or indirect impacts of climate change on the Company's operations and to comply with policies and regulations, the Company has identified potential climate change risks and opportunities and formulated response strategies based on the Task Force on Climate-related Financial Disclosures (TCFD) framework and its four core elements. Greenhouse gas management is conducted according to the timeline set by the regulatory authorities, including inventory and verification planning, to understand the Company's overall emissions. This facilitates the subsequent development of long-term carbon reduction plans, ensuring the implementation of corporate sustainable development and net-zero emission goals.

The Company will complete the inventory and verification planning according to the timeline set by the regulatory authorities. We expect to complete the 2024 inventory report for TCC (parent company only) and third-party verification by 2025, and we aim to complete the greenhouse gas inventory report and third-party verification for TCC and its subsidiaries (as listed in the consolidated financial statements) by 2026. Understanding the Company's greenhouse gas emissions will facilitate the subsequent development of short-, medium-, and long-term carbon reduction plans, ensuring the implementation of corporate sustainable development and net-zero emission goals.

The progress toward achieving the reduction targets and the annual targets is as follows:

2023 Targets	2023 Target Achievement Status	2024 Targets
1. Establish an internal greenhouse gas inventory mechanism and implement a greenhouse gas management information system.	1. Completed the establishment of an internal greenhouse gas inventory mechanism and the implementation of a greenhouse gas management information system.	1. Fuel substitution rate (SRF and scrap tires): $\geq 30\%$
2. Fuel substitution rate (SRF and scrap tires): $\geq 30\%$	2. Fuel substitution rate: 25.74%	2. Average electricity-saving rate from 2015 to 2024: $\geq 1\%$
3. Average electricity-saving rate from 2015 to 2023: $\geq 1\%$	3. Average electricity-saving rate from 2015 to 2023: 1.34% (Estimated annual electricity-saving rate for 2023: 1.18%)	



SASB (Sustainability Accounting Standards Board) Content Index

Topic	Code	SASB Disclosure	Report Content	Corresponding Section
Greenhouse Gas Emissions & Energy Resource Planning	IF-EU-110a.1	(1) Gross global Scope 1 emissions, percentage covered under (2) emissions-limiting regulations and (3) emissions-reporting regulations	The greenhouse gas Scope 1 emissions of Guan Tian Plant in 2023 was 337,191.66 metric tons of CO ₂ e. Currently, there are no emissions-limiting and emissions-reporting regulations in Taiwan.	3.1.2 Energy Saving and Carbon Reduction Measures and Results
	IF-EU-110a.2	Greenhouse gas (GHG) emissions associated with power deliveries	Guan Tian Plant is a cogeneration plant. Its greenhouse gas Scope 1 and Scope 2 emissions in 2023 was 341,004.55 metric tons of CO ₂ e.	3.1.2 Energy Saving and Carbon Reduction Measures and Results
	IF-EU-110a.3	Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	TCC's Guan Tian Plant conducts GHG inventory, which is verified by an independent third-party institution every year to keep track of GHG emissions and develop the GHG emission reduction strategy. In 2023, the Guan Tian Plant implemented energysaving and carbon-reduction projects, resulting in a reduction of approximately 2,965.4 metric tons of CO ₂ e. Furthermore, greenhouse gas inventories and verification planning have been completed for TCC and its subsidiaries.	3.1.2 Energy Saving and Carbon Reduction Measures and Results
Air Quality	IF-EU-120a.1	Air emissions of the following pollutants: (1) NOx (excluding N ₂ O), (2) SOx, (3) particulate matter (PM ₁₀), (4) lead (Pb), and (5) mercury (Hg); percentage of each in or near areas of dense population	(1) NOx: 231.9 metric tons, (2) SOx: 207.9 metric tons, (3) PM: 2.4 metric tons, Percentage of emissions in or near area of dense population: 100%	3.2.3 Air Pollution Prevention and Control
Water Management	IF-EU-140a.1	(1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress	In 2023, TCC's Guan Tian Plant withdrew 761,321m ³ of water, consumed 701,922m ³ of water, and discharged 59,399m ³ of water. The Plant is not located in a high/extremely high water stress area.	3.2.2 Water Resource Management
	IF-EU-140a.2	Number of incidents of non-compliance associated with water quality permits, standards, and regulations	The Guan Tian Plant properly handles the discharged wastewater, and all discharged wastewater passes the relevant standards.	3.2.2 Water Resource Management
	IF-EU-140a.3	Description of water management risks and discussion of strategies and practices to mitigate those risks	Please refer to Water Risk Management and Measures for details.	3.2.2 Water Resource Management
Coal Ash Management	IF-EU-150a.1	(1) Amount of coal combustion products (CCPs) generated, (2) percentage recycled	The total coal ash produced in 2023 was 22,465 metric tons, and the recycling rate was 100%.	3.2.1 Circular Economy of Waste Resources
	IF-EU-150a.3	Description of coal combustion products (CCPs) management policies and procedures for active and inactive operations	100% of fly ash and bottom ash were recycled to produce Controlled Low-Strength Material (CLSM).	3.2.1 Circular Economy of Waste Resources

Topic	Code	SASB Disclosure	Report Content		Corresponding Section
Energy Affordability	IF-EU-240a.1	Average retail electric rate for (1) residential, (2) commercial, and (3) industrial customers	TCC's retail electric rate is based on Time-of-Use (TOU) rates and Feed-in Tariffs (FIT) rates		N/A
	IF-EU-240a.3	(1) Number of residential customer electric disconnections for non-payment, (2) percentage reconnected within 30 days	TCC does not supply power to residential users.		N/A
	IF-EU-240a.4	Discussion of impact of external factors on customer affordability of electricity, including the economic conditions of the service territory	Changes in fuel prices, the trend of tightening regulations, the impact of the pandemic and the changes in renewable energy market affect the affordability of electricity for users.		2.1 New Direction for Energy Transition
Workforce Health & Safety	IF-EU-320a.1	(1) Total recordable incident rate (TRIR), (2) fatality rate, and (3) near miss frequency rate (NMFR) for (a) direct employees and (b) contract employees	(1) Total recordable incident rate (TRIR): 0%, (2) Occupational injury death rate: 0%, and (3) Near miss frequency rate (NMFR): 0%		4.3 Healthy Workplace
End Use Efficiency & Demand	IF-EU-420a.2	Percentage of electric load served by smart grid technology	No smart grid available		N/A
	IF-EU-420a.3	Customer electricity savings from efficiency measures, by market	In 2023, a total of 291,000 kWh of electricity was saved.		3.1.2 Energy Saving and Carbon Reduction Measures and Results
Nuclear Safety & Emergency Management	IF-EU-540a.1	Total number of nuclear power units, broken down by the results of the most recent independent safety review	TCC does not own or operate a nuclear power plant.		N/A
	IF-EU-540a.2	Description of efforts to manage nuclear safety and emergency preparedness	TCC does not own or operate a nuclear power plant.		N/A
Grid Resiliency	IF-EU-550a.1	Number of incidents of non-compliance with physical or cybersecurity standards or regulations	Currently, there are no regulatory standards for the resilience or reliability of power facilities in Taiwan. However, TCC has already implemented preventive measures for cybersecurity and physical risks.		1.3 Risk Management
	IF-EU-550a.2	(1) System Average Interruption Duration Index (SAIDI), (2) System Average Interruption Frequency Index (SAIFI), and (3) Customer Average Interruption Duration Index (CAIDI), inclusive of major event days		Guan Tian Plant	2.3.1 Stable Power Supply
			SAIDI	0	
			SAIFI	0	
			CAIDI	-	

Topic	Code	SASB Disclosure	Report Content	Corresponding Section
Activity Metrics	IF-EU-000.A	Number of (1) residential, (2) commercial, (3) industrial customers served	Total number of users (including the data of Guan Tian Plant and TCC Green Energy): (1) Residential customers: N/A (2) Commercial customers: 5 users (3) Industrial customers: 12 users (4) Others: 2 users	N/A
	IF-EU-000.B	Total electricity delivered to: (1) residential, (2) commercial, (3) industrial, (4) all other retail customers, and (5) wholesale customers	Power supply for users (including the data of Guan Tian Plant and TCC Green Energy): (1) Residential: N/A (2) Commercial: 18 GWh (3) Industrial: 193 GWh (4) Others: 124 GWh	N/A
	IF-EU-000.C	Length of transmission and distribution lines	Not applicable	N/A
	IF-EU-000.D	Total electricity generated, percentage by major energy source, percentage in regulated markets	The total electricity generation of the Guan Tian Plant and renewable energy projects was 371 GWh. Among them, thermal power generation accounted for 53%, solar power accounted for 11%, wind power accounted for 32%, and geothermal power accounted for 5%. The power generation of the TCC Group is regulated by the Electricity Act.	2.3.1 Stable Power Supply
	IF-EU-000.E	Total wholesale electricity purchased	The purchased electricity of TCC is 8.51 GWh. Not applicable; The main businesses of TCC are power generation and investing in power plants. It does not conduct the re-selling of electricity from wholesale.	3.1.2 Energy Saving and Carbon Reduction Measures and Results

GRI Standards Content Index

Disclosure Number	Title of Disclosure	Corresponding Section of Disclosure	Remark
GRI 2: General Disclosures 2021			
2-1	Organizational details	About this Report 1.1.1 About TCC Group	
2-2	Entities included in the organization's sustainability reporting	About this Report 1.1.1 About TCC Group 1.1.2 Economic Performance (Link to annual report)	
2-3	Reporting period, frequency and contact point	About this Report	
2-4	Restatements of information	3.1.2 Energy Saving and Carbon Reduction Measures and Results	
2-5	External Assurance	About this Report Independent Assurance Opinion Statement	
2-6	Activities, value chain and other business relationships	1.1.1 About TCC Group 2.4.1 Good Supply Chain Partnership	
2-7	Employees	4.1.2 Employee Composition	
2-8	Workers who are not employees	4.1.2 Employee Composition	
2-9	Governance structure and composition	Sustainable Development 1.2.1 Corporate Governance	
2-10	Nomination and selection of the highest governance body	1.2.1 Corporate Governance	
2-11	Chair of the highest governance body	1.2.1 Corporate Governance	
2-12	Role of the highest governance body in overseeing the management of impacts	Sustainable Development Stakeholder Engagement 1.3 Risk Management	

Disclosure Number	Title of Disclosure	Corresponding Section of Disclosure	Remark
2-13	Delegation of responsibility for managing impacts	Sustainable Development	
2-14	Role of the highest governance body in sustainability reporting	Sustainable Development	
2-15	Conflicts of interest	1.1.1 About TCC Group 1.2.1 Corporate Governance	
2-16	Communication of critical concerns	Sustainable Development	
2-17	Collective knowledge of the highest governance body	Sustainable Development	
2-18	Evaluation of the performance of the highest governance body	1.2.1 Corporate Governance	
2-19	Remuneration policies	4.1.3 Talent Cultivation	
2-20	Process to determine remuneration	4.1.3 Talent Cultivation	
2-21	Annual total compensation ratio	4.1.3 Talent Cultivation	<p>1. The ratio of the annual total salary of the highest-paid individual to the median of the annual total salary of all other employees in the organization is 4.41.</p> <p>2. The ratio of the percentage increase in the annual total salary of senior managers to the median percentage increase in the average annual total salary of all other employees (excluding senior managers) is 0.42.</p> <p>Note: In 2022, the total salary for senior managers was disclosed in aggregate.</p>

Disclosure Number	Title of Disclosure	Corresponding Section of Disclosure	Remark
2-22	Statement on sustainable development strategy	Message from the Chairman	
2-23	Policy commitments	Vision and Strategy for Sustainable Development Material Topic Management Approach 1.2.1 Corporate Governance 1.3 Risk Management 2.4.3 Comprehensive Supplier Management 4.1.1 Human Resources Policy 4.2 Human Rights Protection and Inclusion	
2-24	Embedding policy commitments	1.2.1 Corporate Governance 2.4.3 Comprehensive Supplier Management 4.1.1 Human Resources Policy 4.2 Human Rights Protection and Inclusion	
2-25	Processes to remediate negative impacts	Material Topics and Boundaries Material Topic Management Approach 4.1.1 Human Resources Policy 4.2 Human Rights Protection and Inclusion	
2-26	Mechanisms for seeking advice and raising concerns	1.2.2 Integrity Management and Legal Compliance	
2-27	Compliance with laws and regulations	1.2.2 Integrity Management and Legal Compliance	
2-28	Membership associations	1.2.3 External Collaboration	

Disclosure Number	Title of Disclosure	Corresponding Section of Disclosure	Remark
2-29	Approach to stakeholder engagement	Stakeholder Engagement	
2-30	Collective bargaining agreements	As the Company does not have a labor union, we hold quarterly labor-management meetings to ensure effective communication with our employees.	
GRI 3: Material Topics 2021			
3-1	Process to determine material topics	Analysis of Material Issues	
3-2	List of material topics	Analysis of Material Issues	
3-3	Management of material topics	Material Topic Management Approach	
Topic Disclosure			
GRI 201: Economic Performance 2016			
201-1	Direct economic value generated and distributed	1.1.2 Economic Performance	
201-2	Financial implications and other risks and opportunities due to climate change	3.1.1 Response Strategy and Environmental Management	
201-3	Defined benefit plan obligations and other retirement plans	4.1.4 Employee Benefits	
GRI 204: Procurement Practices 2016			
204-1	Proportion of spending on local suppliers	2.4.1 Good Supply Chain Partnership	

Disclosure Number	Title of Disclosure	Corresponding Section of Disclosure	Remark
GRI 205: Anti-corruption 2016			
205-3	Confirmed incidents of corruption and actions taken	1.2.2 Integrity Management and Legal Compliance	No such incident in 2023
GRI 206: Anti-competitive Behavior 2016			
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	1.2.2 Integrity Management and Legal Compliance	
GRI 301: Materials 2016			
301-1	Materials used by weight or volume	3.2.1 Circular Economy of Waste Resources	
GRI 302: Energy 2016			
302-1	Energy consumption within the organization	3.1.2 Energy Saving and Carbon Reduction Measures and Results	
302-3	Energy intensity	3.1.2 Energy Saving and Carbon Reduction Measures and Results	
302-4	Reduction of energy consumption	3.1.2 Energy Saving and Carbon Reduction Measures and Results	
302-5	Reductions in energy requirements of products and services	3.1.2 Energy Saving and Carbon Reduction Measures and Results	

Disclosure Number	Title of Disclosure	Corresponding Section of Disclosure	Remark
GRI 303: Water and Effluents 2018			
303-1	Interactions with water as a shared resource	3.2.2 Water Resource Management	No water sources that are significantly affected by water withdrawal
303-3	Water withdrawal	3.2.2 Water Resource Management	
303-4	Water discharge	3.2.2 Water Resource Management	
303-5	Water consumption	3.2.2 Water Resource Management	
GRI 305: Emissions 2016			
305-1	Direct (Scope 1) GHG emissions	3.1.2 Energy Saving and Carbon Reduction Measures and Results	
305-2	Energy indirect (Scope 2) GHG emissions	3.1.2 Energy Saving and Carbon Reduction Measures and Results	
305-4	GHG emissions intensity	3.1.2 Energy Saving and Carbon Reduction Measures and Results	
305-5	Reduction of GHG emissions	3.1.2 Energy Saving and Carbon Reduction Measures and Results	
305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	3.2.3 Air Pollution Prevention and Control	
GRI 306: Waste 2020			
306-1	Waste generation and significant waste-related impacts	3.2.1 Circular Economy of Waste Resources	
306-2	Management of significant waste-related impacts	3.2.1 Circular Economy of Waste Resources	


Disclosure Number	Title of Disclosure	Corresponding Section of Disclosure	Remark
306-3	Waste generated	3.2.1 Circular Economy of Waste Resources	
306-4	Waste diverted from disposal	3.2.1 Circular Economy of Waste Resources	
306-5	Waste directed to disposal	3.2.1 Circular Economy of Waste Resources	
GRI 308: Supplier Environmental Assessment 2016			
308-1	New suppliers that were screened using environmental criteria	2.4.3 Comprehensive Supplier Management	
GRI 401: Employment 2016			
401-1	New employee hires and employee turnover	4.1.2 Employee Composition	
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	4.1.4 Employee Benefits	
401-3	Parental leave	4.1.4 Employee Benefits	
GRI 403: Occupational Health and Safety 2018			
403-1	Occupational health and safety management system	4.3 Healthy Workplace	
403-2	Hazard identification, risk assessment, and incident investigation	4.3 Healthy Workplace	
403-3	Occupational health services	4.3 Healthy Workplace	
403-4	Worker participation, consultation, and communication on occupational health and safety	4.3 Healthy Workplace	

Disclosure Number	Title of Disclosure	Corresponding Section of Disclosure	Remark
403-5	Worker training on occupational health and safety	4.3 Healthy Workplace	
403-6	Promotion of worker health	4.3 Healthy Workplace	
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	4.3 Healthy Workplace	
403-8	Workers covered by an occupational health and safety management system	4.3 Healthy Workplace	
403-9	Work-related injuries	4.3 Healthy Workplace	
403-10	Work-related ill health	4.3 Healthy Workplace	
GRI 404: Training and Education 2016			
404-1	Average hours of training per year per employee	4.1.3 Talent Cultivation	
404-2	Programs for upgrading employee skills and transition assistance programs	4.1.3 Talent Cultivation	
404-3	Percentage of employees receiving regular performance and career development reviews	4.1.3 Talent Cultivation	
GRI 405: Diversity and Equal Opportunity 2016			
405-1	Diversity of governance bodies and employees	4.1.2 Employee Composition	

Disclosure Number	Title of Disclosure	Corresponding Section of Disclosure	Remark
GRI 406: Non-Discrimination 2016			
406-1	Incidents of discrimination and corrective actions taken	4.2 Human Rights Protection and Inclusion	No such incident in 2023
GRI 408: Child Labor 2016			
408-1	Operations and suppliers at significant risk for incidents of child labor	2.4.3 Comprehensive Supplier Management 4.2 Human Rights Protection and Inclusion	
GRI 409: Forced or Compulsory Labor 2016			
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	2.4.3 Comprehensive Supplier Management 4.2 Human Rights Protection and Inclusion	
GRI 411: Rights of Indigenous Peoples 2016			
411-1	Incidents of violations involving rights of indigenous peoples	4.2 Human Rights Protection and Inclusion	No such incident in 2023
GRI 413 : Local Communities 2016			
413-1	Operations with local community engagement, impact assessments, and development programs	5.3 Giving Back to Local Communities	
GRI 414: Supplier Social Assessment 2016			
414-1	New suppliers that were screened using social criteria	2.4.3 Comprehensive Supplier Management 4.2 Human Rights Protection and Inclusion	

Disclosure Number	Title of Disclosure	Corresponding Section of Disclosure	Remark
GRI 416: Customer Health and Safety 2016			
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	1.2.2 Integrity Management and Legal Compliance 2.3.2 Meeting Customer Needs	No such incident in 2023
GRI 417: Marketing and Labeling 2016			
417-2	Incidents of non-compliance concerning product and service information and labeling	1.2.2 Integrity Management and Legal Compliance 2.3.2 Meeting Customer Needs	No such incident in 2023
GRI 418: Customer Privacy 2016			
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	1.2.2 Integrity Management and Legal Compliance 2.3.2 Meeting Customer Needs	No such incident in 2023
Others (Refer to GRI G4 Supplementary Indicators for the Electric Utility Sector)			
EU-10	Planned capacity against projected electricity demand over the long term, broken down by energy source and regulatory regime	2.3.1 Stable Power Supply	
EU-11	Average generation efficiency of thermal plants by energy source and by regulatory regime	3.1.2 Energy Saving and Carbon Reduction Measures and Results	
EU-28	Power outage frequency	2.3.1 Stable Power Supply	
EU-29	Average power outage duration	2.3.1 Stable Power Supply	

Independent Assurance Opinion Statement



安永聯合會計師事務所
11012 台北市基隆路一段333號9樓
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會計師有限確信報告

台灣汽電共生股份有限公司 公鑒

確信範圍

本會計師接受台灣汽電共生股份有限公司（以下簡稱「台汽電」）之委任，對民國一一年度（2023 年度）永續報告書中所選定之績效資訊（以下稱「標的資訊」），執行財團法人中華民國會計研究發展基金會所發布之確信準則所定義之「有限確信案件」並出具報告。

標的資訊及其適用基準

有關台汽電之標的資訊及其適用基準詳列於附件一。

管理階層之責任

台汽電管理階層之責任係依據臺灣證券交易所「上市公司編製與申報永續報告書作業辦法」/財團法人中華民國證券櫃檯買賣中心「上櫃公司編製與申報永續報告書作業辦法」之規定，以及參考適當之基準編製標的資訊，包括參考全球永續性報告協會(Global Reporting Initiatives, GRI)所發布之 2021 年 GRI 準則(GRI Standards)，台汽電管理階層應選擇所適用之基準，並對標的資訊在所有重大方面是否依據該適用基準報導負責，此責任包括建立及維持與標的資訊編製有關之內部控制、維持適當之記錄並作成相關之估計，以確保標的資訊未存有導因於舞弊或錯誤之重大不實表達。

本會計師之責任


本會計師之責任係依據所取得之證據對標的資訊作成結論。

本會計師依照財團法人中華民國會計研究發展基金會所發布之確信準則 3000 號「非屬歷史性財務資訊查核或核閱之確信案件」之要求規劃並執行有限確信工作，以對標的資訊是否存在重大不實表達出具有限確信報告。本會計師依據專業判斷，包括對導因於舞弊或錯誤之重大不實表達風險之評估，以決定確信程序之性質、時間及範圍。

本會計師相信已獲取足夠及適切之證據，以作為表示有限確信結論之基礎。

會計師之獨立性及品質管理

本會計師及所隸屬組織遵循會計師職業道德規範中有關獨立性及其他道德



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規範之規定，該規範之基本原則為正直、公正客觀、專業能力及專業上應有之注意、保密及專業行為。

本事務所遵循品質管理準則 1 號「會計師事務所之品質管理」，該品質管理準則規定組織設計、付諸實行及執行品質管理制度，包含與遵循職業道德規範、專業準則及適用之法令規範相關之政策或程序。

所執行程序之說明

有限確信案件中執行程序之性質及時間與適用於合理確信案件不同，其範圍亦較小，因此，有限確信案件中取得之確信程度明顯低於合理確信案件中取得者。本會計師所設計之程序係為取得有限確信並據此作成結論，並不提供合理確信必要之所有證據。

儘管本會計師於決定確信程序之性質及範圍時曾考量台汽電內部控制之有效性，但本確信案件並非對台汽電內部控制之有效性表示意見。本會計師所執行之程序不包括測試控制或執行與檢查資訊科技 (IT) 系統內資料之彙總或計算相關的程序。


有限確信案件包括進行查詢，主要係向負責編製標的資訊及相關資訊的人員進行查詢，並應用分析及其他適當程序。

本會計師執行的程序包括：

- 與台汽電人員進行訪談，以瞭解台汽電之業務與履行永續發展之整體情況，以及永續報導流程；
- 透過訪談、檢查相關文件，以瞭解台汽電之主要利害關係人及利害關係人之期望與需求、雙方具體之溝通管道，以及台汽電如何回應該等期望與需求；
- 與台汽電攸關人員進行訪談，以瞭解用以蒐集、整理及報導標的資訊之相關流程；
- 檢查計算標準是否已依據適用基準中概述的方法正確應用；
- 針對報告中所選定之永續績效資訊進行分析性程序；蒐集並評估其他支持證據資料及所取得之管理階層聲明；如必要時，則抽選樣本進行測試；
- 閱讀台汽電之永續報告書，確認其與本事務所取得關於永續發展整體履行情況之瞭解一致。

先天限制

因永續報告書中所包含之非財務資訊受到衡量不確定性之影響，選擇不同的衡量



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方式，可能導致績效衡量上之重大差異，且由於確信工作係採抽樣方式進行，任何內部控制均受有先天限制，故未必能查出所有業已存在之重大不實表達，無論是導因於舞弊或錯誤。

結論

依據所執行之程序及所取得之證據，本會計師未發現標的資訊有未依照適用基準編製而須作重大修正之情事。

安永聯合會計師事務所

會計師：張志銘

中華民國一一年五月三十一日



附件一：

編號	章節	內文標題	標的資訊	適用基準																																																																																																																					
1	4.3	職業災害與缺勤率統計	<table><tr><td></td><td></td><td>員工</td><td colspan="2">其他工作者 (承包商/供應商)</td></tr><tr><td rowspan="2">工作總時數</td><td>男</td><td>85,688</td><td>55,029</td><td></td></tr><tr><td>女</td><td>6,024</td><td>6,367</td><td></td></tr><tr><td></td><td>合計</td><td>91,712</td><td>61,396</td><td></td></tr><tr><td rowspan="2">職業傷害死亡比率</td><td>男</td><td>0</td><td>0</td><td></td></tr><tr><td>女</td><td>0</td><td>0</td><td></td></tr><tr><td></td><td>合計</td><td>0</td><td>0</td><td></td></tr><tr><td rowspan="2">嚴重職業傷害比率</td><td>男</td><td>0</td><td>0</td><td></td></tr><tr><td>女</td><td>0</td><td>0</td><td></td></tr><tr><td></td><td>合計</td><td>0</td><td>0</td><td></td></tr><tr><td rowspan="2">可記錄之職業傷害比率</td><td>男</td><td>0</td><td>0</td><td></td></tr><tr><td>女</td><td>0</td><td>0</td><td></td></tr><tr><td></td><td>合計</td><td>0</td><td>0</td><td></td></tr><tr><td rowspan="2">損工日數率 (LDR)</td><td>男</td><td>0</td><td>0</td><td></td></tr><tr><td>女</td><td>0</td><td>0</td><td></td></tr><tr><td></td><td>合計</td><td>0</td><td>0</td><td></td></tr><tr><td rowspan="2">缺勤率 (AR)</td><td>男</td><td>0</td><td>0</td><td></td></tr><tr><td>女</td><td>0</td><td>0</td><td></td></tr><tr><td></td><td>合計</td><td>0</td><td>0</td><td></td></tr><tr><td rowspan="2">虛驚事故量</td><td>男</td><td>0</td><td>0</td><td></td></tr><tr><td>女</td><td>0</td><td>0</td><td></td></tr><tr><td></td><td>合計</td><td>0</td><td>0</td><td></td></tr><tr><td rowspan="2">虛驚事故率 (NMFR)</td><td>男</td><td>0</td><td>0</td><td></td></tr><tr><td>女</td><td>0</td><td>0</td><td></td></tr><tr><td></td><td>合計</td><td>0</td><td>0</td><td></td></tr></table>			員工	其他工作者 (承包商/供應商)		工作總時數	男	85,688	55,029		女	6,024	6,367			合計	91,712	61,396		職業傷害死亡比率	男	0	0		女	0	0			合計	0	0		嚴重職業傷害比率	男	0	0		女	0	0			合計	0	0		可記錄之職業傷害比率	男	0	0		女	0	0			合計	0	0		損工日數率 (LDR)	男	0	0		女	0	0			合計	0	0		缺勤率 (AR)	男	0	0		女	0	0			合計	0	0		虛驚事故量	男	0	0		女	0	0			合計	0	0		虛驚事故率 (NMFR)	男	0	0		女	0	0			合計	0	0		2023 年 01 月 01 日至 2023 年 12 月 31 日，台汽電官田廠依性別、工作者類型區分之工作時數、職業災害與缺勤率統計。
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2	4.1.3	2023 年人力訓練計畫執行成果	<table><tr><td colspan="2">台汽電</td><td colspan="2">男性</td><td colspan="2">女性</td></tr><tr><td rowspan="2">訓練時數(小時)</td><td>總時數</td><td>總人數</td><td>平均每人受訓時數</td><td>總時數</td><td>總人數</td><td>平均每人受訓時數</td></tr><tr><td>主管</td><td>230</td><td>9</td><td>25.6</td><td>36.5</td><td>2</td><td>18.3</td></tr><tr><td>非主管</td><td>4,888</td><td>75</td><td>65.2</td><td>2,067.5</td><td>40</td><td>51.7</td></tr><tr><td>總計</td><td>5,118</td><td>84</td><td>60.9</td><td>2,104</td><td>42</td><td>50.1</td></tr><tr><td colspan="2">星能股</td><td colspan="2">男性</td><td colspan="2">女性</td></tr><tr><td rowspan="2">訓練時數(小時)</td><td>總時數</td><td>總人數</td><td>平均每人受訓時數</td><td>總時數</td><td>總人數</td><td>平均每人受訓時數</td></tr><tr><td>主管</td><td>47</td><td>11</td><td>4.3</td><td>0</td><td>0</td><td>--</td></tr><tr><td>非主管</td><td>2,795</td><td>153</td><td>18.3</td><td>1,227.5</td><td>55</td><td>22.3</td></tr><tr><td>總計</td><td>2,842</td><td>164</td><td>17.3</td><td>1,227.5</td><td>55</td><td>22.3</td></tr></table>	台汽電		男性		女性		訓練時數(小時)	總時數	總人數	平均每人受訓時數	總時數	總人數	平均每人受訓時數	主管	230	9	25.6	36.5	2	18.3	非主管	4,888	75	65.2	2,067.5	40	51.7	總計	5,118	84	60.9	2,104	42	50.1	星能股		男性		女性		訓練時數(小時)	總時數	總人數	平均每人受訓時數	總時數	總人數	平均每人受訓時數	主管	47	11	4.3	0	0	--	非主管	2,795	153	18.3	1,227.5	55	22.3	總計	2,842	164	17.3	1,227.5	55	22.3	2023 年 01 月 01 日至 2023 年 12 月 31 日間，台汽電（含總公司及官田廠）及星能股依性別、職級區分之教育訓練統計。																																																	
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			3	1.2.2	法令遵循情形	2023 年未發生任何違規裁罰事件	2023 年 01 月 01 日至 2023 年 12 月 31 日間，台汽電總公司及官田廠因違反環境法律或法規受裁處情形。																																																																																																																		



編號	章節	內文標題	標的資訊				適用基準	
4	3.2.1	廢棄物處理方式	廢棄物		2023 年重量 (公噸)		2023 年 01 月 01 日至 2023 年 12 月 31 日間，台汽電官田廠按廢棄物產生類別及處理方式劃分之廢棄物統計量。	
			再生利用 (R 類、D 類飛灰及底灰)		22,465.24			
			焚化 - 大量燃燒 (生活垃圾)		1.2			
			其他 - 掩埋 + 熱處理 (污泥)		19.96			
			其他 - 熱處理 (廢保溫材、廢耐火材)		6.06			
			總重量		22,492.46			
5	3.2.2	水資源管理	官田廠	廠區	用水來源	2023 年 (m³)	計算方式說明	2023 年 01 月 01 日至 2023 年 12 月 31 日間，台汽電官田廠之總取水量、總用水量、排水量、回收水量統計。
				原水(水庫)	210,455	運轉課每日抄表之數據		
				自來水	550,866	運轉課每日抄表之數據		
				總取水量	761,321	原水(水庫)+自來水		
				來自其他組織廢水	80,351	運轉課每日抄表之數據		
				製程廢水回收	10,738	運轉課每日抄表之數據		
				其他回收水	1,900	水表(廢水回收)		
				總用水量	854,310	總取水量+廢水(自其他組織廢水、製程回收)+其他回收水		
				排水量	59,399	廢水量+客戶買水量		
				耗水量	701,922	總取水量-總排水量		
				回收水量	12,638			
				回收水佔總用水比例	1.48%	此比例不含鍋爐用水及冷卻用水之內部循環使用。		

