Sustainable Governance

THE FIRST LARGE-SCALE
UHPC ARTISTIC CREATION IN TAIWAN
TAI CHI INFINITE

05

TARGETS

2022 PERFORMANCE HIGHLIGHTS

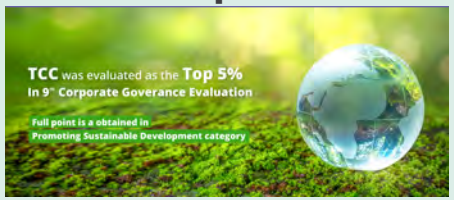
Board of Directors

ESG -related lessons
150.5 Hours

Female Directors
26.66%

Nomination Committee Established
CSO CHRO
CFO CISO
Appointed

Corporate Governance Evaluation Top 5%



Invention Patents

40 Granted | 26 Applying

Client Satisfaction Survey

96.86%

Total Hours of Integrity & Ethics Trainings

2,129.8 Hours
Coverage100%
(for all TCC employees)

Information Security Trainings

total of 1,200 hours
for 219 participants

Sustainable Supply Chain

Effective carbon emission data of Critical Tier-1 Suppliers
64.6%

Green Procurement ratio
4.51%

Critical Suppliers Attending the Online Supplier Convention
52.8%

New Suppliers Signing the Anti-Corruption Statement
100%

5.1 / Special Column **Sustainability Governance Workshop**

In response to Net Zero by 2050, TCC actively examines our supply chain and endeavors to help the SMEs on the supply chain to establish their sustainability systems. Through external consulting, TCC reduces the supply chain risks as well as increases the supply chain information transparency and resilience.
TCC organized the first "Supplier Sustainability Governance Workshop" on November 23, 2022, inviting 25 suppliers to participate. The consulting team from Deloitte & Touche Consulting Co. shared on sustainability trends and guided the suppliers with a lower sustainability maturity to establish the basic sustainability governance policies in order to raise the sustainability governance performances of the suppliers. Moving forward, TCC plans to conduct 2 sessions yearly and scale up the coverage step by step.
The TCC Sustainability Governance Workshop included diverse suppliers in raw materials, engineering, equipment and parts, transportation, etc. By means of trend sharing, education, and training, the workshop assisted suppliers to enhance their sustainability policies. Also, through a tracking system, TCC unceasingly monitored the sustainability management outcomes of all suppliers so as to reduce risks and raise the competences of the whole supply chain in response to sustainability-related risks.

TCC Values Bilateral Communication with Suppliers

TCC values bilateral communication with suppliers. Therefore, a discussion session with the suppliers was specifically arranged in the workshop. Also, a group consultant and TCC buyer were assigned for each group, allowing the suppliers to directly reflect the obstacles in execution and discuss methods for improvement.

Improving Peer Exchange Together with Suppliers

At the Supplier Sustainability Governance Workshop, TCC specifically assigned suppliers with similar industrial characteristics into the same groups. Through the mutual exchanges, suppliers were able to exchange their experiences. Meanwhile, TCC could probe into the pain points of different industries and assisted the suppliers to resolve relevant issues, elevating the resilience of TCC supply chain.

Overview of Supplier Sustainability Governance Workshop

- Sustainability governance trend sharing: to establish the sustainability awareness of suppliers
- General discussion on sustainability governance policies: to capture the status of sustainability governance implementation of suppliers via open discussion
- Preliminary establishment of sustainability governance policies: to assist and mentor suppliers to draft their sustainability governance policies, supported by the group consultant and TCC buyer
- Targets for sustainability governance implementation: require suppliers to set their own timetable for the complete establishment of sustainability governance policies

Benefits Gained from the Sustainability Governance Workshop

- Improved suppliers' corporate governance
- Deepened engagement level
- Strengthened supply chain's sustainable resilience

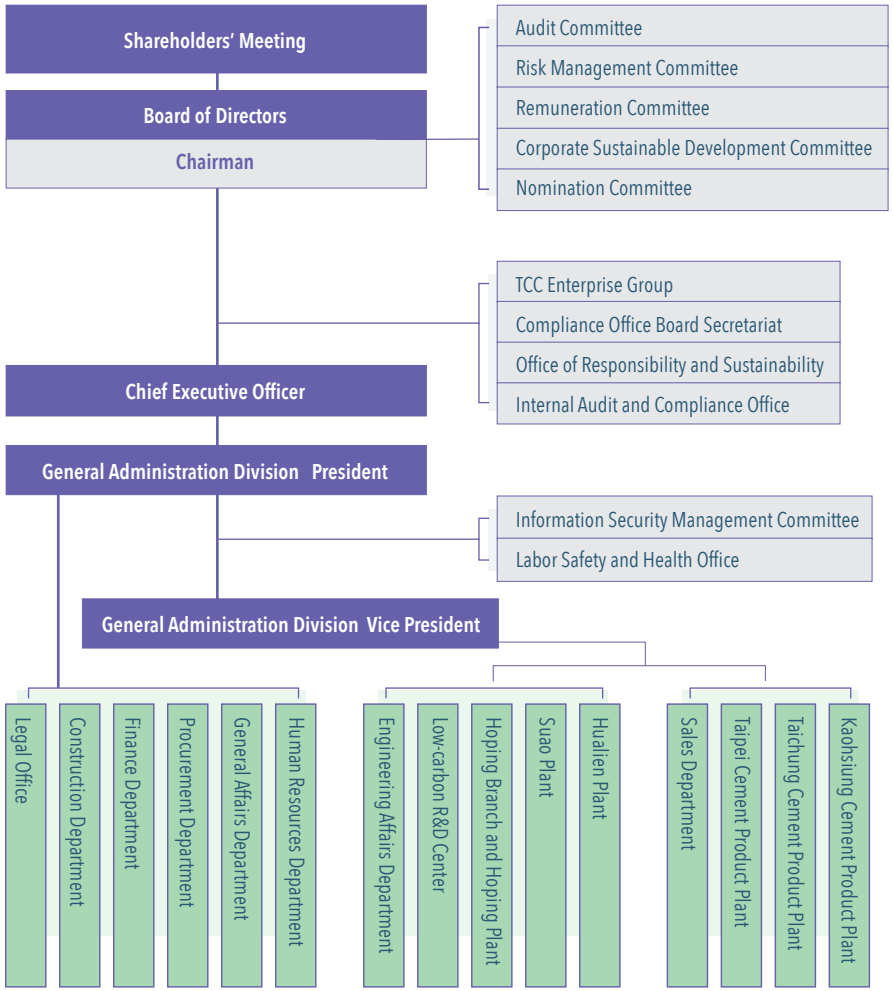
After-session Participation Reflection

Invited to the 1st Sustainability Governance Workshop of TCC on November 23, 2022, as the long-term auxiliary materials supplier to TCC, it was our honor to participate in the session.
Thanks to the mentoring and detailed explanation by the Deloitte consultant as well as colleagues from Materials Management Department, we gained a groundbreaking understanding in the concepts and frameworks of ESG and sustainability governance, carbon inventory, product carbon footprints, corporate governance evaluation, declaration and formulation of corporate policies and regulations, declaration of human rights policy, compliance with all the national labor laws and regulations, provision of a healthy and safe working environment, assurance of harmoniously win-win labor-management relations, green transportation, management of pollution prevention and control, detailed implementation items for net-zero emissions, among others!

Executive Assistant to General Manager, SPLENDID TREASURE CO., LTD
Chi-How Liu
Workshop Ingredient Team

5.2 / Board Functions

Organization Framework



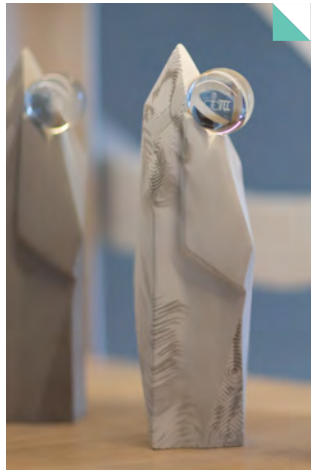
Note1: The Taipei, Taichung, and Kaohsiung RMC Plants include 19 branches and 3 distribution stations.

Note 2: The Hualien Plant includes a ready mixed concrete workshop.

Note 3: Research & Development Department is renamed as Low-carbon R&D Center on June 1, 2023.

The 24th Board of Directors of the Company Consists of 15 Directors (5 Independent Directors Included) with a 100% Attendance (Presence by Proxy included)

The tenure of the members of the Board of Directors at TCC is 3 years. The incumbent members of (the 24th) Board of Directors were elected on July 5, 2021. The seats were cut from 19 seats to 15 seats, reduced by 21%, among whom 12 seats are replete with practical cement-related experiences. There are 5 seats of Independent Directors with the percentage in the overall seats of the Board of Directors raised from 21% to 33%, among whom 4 Directors have the expertise in accounting or laws. 27% of Board members are female. The percentage of female Independent Directors has even reached 60%. The average attendance of the 24th Board of Directors in 2022 is 93.33%, or 100% by counting in the presence by proxy. Important resolutions adopted by the TCC Board of Directors are released and disclosed faithfully on the Market Observation Post System in a timely manner. In deliberation of matters concerning a Director or the legal entity he/she represents, the Director shall abstain from voting for conflict of interest.



Profiles of the Members on the Incumbent (24th) Board of Directors

Title	Representative	Entity Name	Juristic Person	Core Diversity Items		
			Average Tenure	GENDER	AGE	
					31-50	51 OR ABOVE
Chairman	An-ping (Nelson) CHANG	Chai Hsin R.M.C. Corporation	4.7	M		◆
	Kung-Yi KOO	Tai Ho Farming Co., Ltd	4.7	M	◆	
	Jong-Peir LI[1]	C. F. Koo Foundation	6.7	M		◆
	Eric CHEN Sun Te[1]	C. F. Koo Foundation	6.7	M		◆
	Por-Yuan WANG	Fu Pin Investment Co., Ltd.	19.7	M		◆
	Kenneth C.M. LO	International CSRC Investment Holdings Co., Ltd.	20.7	M		◆
	Kang-Lung (Jason) CHANG	Chia Hsin Cement Corporation	10.7	M		◆
	Chi-Chia HSIEH	Fu Pin Investment Co., Ltd.	19.7	M		◆
	Chien WEN	Heng Qiang Investment Co., Ltd.	19.7	M		◆
	Chi-Te CHEN	Chia Hsin Cement Corporation	10.7	M		◆
	Chun-Ying LIU	Heng Qiang Investment Co., Ltd.	19.7	F	◆	
	Victor WANG	-	9.7	M		◆
	Yu-Cheng CHIAO	-	10.7	M		◆
	Lynette Ling-Tai CHOU	-	4.7	F		◆
	Mei-Hua LIN	-	1.6	F		◆
	Sherry S. L. LIN	-	1.6	F		◆

Juristic Person Director Representative | Independent Director

Note 1: The Representative was changed from Mr. Jong-Peir Li to Mr. Eric Chen Sun Te under the notification of C. F. Koo Foundation made on August 12, 2022.

Functional Committees

Audit

Responsibilities

Stipulation and amendment to the internal control system and protocols for significant financial and business activities, auditing of marketable securities, financial statements, and matters involving Director's conflict of interest, etc.

Attendance(presence in person) **95%**

Attendance(presence by proxy included) **100%**

Charter of Committee

Remuneration

Responsibilities

Formulation and review of policies concerning the performance assessments of the Directors and managers as well as their compensation; evaluation and stipulation of the compensation for the Directors and managers on a regular basis

Attendance(presence in person) **97%**

Attendance(presence by proxy included) **100%**

Charter of Committee

Risk Management

Responsibilities

Execution of the risk management decisions approved by the Board of Directors and supervision of the establishment of TCC's risk management mechanisms; oversight of the execution and coordination of the overall risk management

Attendance(presence in person) **100%**

Attendance(presence by proxy included) **100%**

Charter of Committee

Corporate Sustainable Development[2]

Responsibilities

A decision-making and supervisory body over the Company's relevant efforts in the sustainable development, including Governance (G), Environmental (E), and Social (S), to strengthen the Company's management system, contribute to environmental conservation, and exercise our social responsibilities for the Board of Directors to fulfill its responsibilities in the protection of the interests of the Company as well as our employees, shareholders, and stakeholders

Attendance(presence in person) **100%**

Attendance(presence by proxy included) **100%**

Charter of Committee

Nomination

Responsibilities

Stipulation of the election of the Directors (Independent Directors included) and the senior management; formulation and review of the ESG Professional Development Program for Directors, the management performance of Directors, the evaluation of members of the Board of Directors, and the succession plan of senior management a regular basis

Attendance(presence in person) **90%**

Attendance(presence by proxy included) **100%**

Charter of Committee

Note2: Mr. Jong-Peir Li resigned from the Corporate Sustainable Development Committee on August 12, 2022, which was assumed by Mr. Roman Cheng on December 13, 2022.

Average Tenure of the Members on the Board of Directors

The average tenure of the members on the Board of Directors in 2022 is 11 years.

Operation of the Board

Monthly meetings are convened regularly at the Company to discuss focused works, along with quarterly presentation of the work contents and status of improvement of departments by the respective units.

External Evaluation of the Board of Directors – Excellent

"Rules of Performance Evaluation of Board of Directors" has been stipulated at TCC to evaluate the Board of Directors and the Functional Committees on a regular basis. The areas covered in the evaluation include the involvement in the corporate operation, improvement of the decision-making quality of the Board, composition and structure of the Board, election of Board Members and their continuing knowledge development, and internal controls.

KPMG Advisory Services Co., Ltd. was commissioned by TCC to conduct the evaluation with the 2022 Board Performance Evaluation Report submitted on February 10, 2023. The result of the overall evaluation was excellent, which was submitted and presented to the Board of Directors on February 24, 2023. Please check our corporate website for the Performance Evaluation Report.

The 9th Corporate Governance Evaluation: 5%

TCC values corporate governance performance and achieved a top 5% ranking in the 9th Corporate Governance Evaluation. TCC also secured a position within the top 10% of non-financial electronic companies with a market capitalization of 10 billion NTD in the corporate governance evaluation. The issues for improvement are constantly brought up on the monthly senior manager meetings for the personnel in charge to plan and execute corrective actions for relevant indicators accordingly. In addition, the targets for improvement are connected with the performances of the responsible unit managers so as to drive the growth of corporate governance performance.

ESG Professional Development Program for the Board of Directors

TCC arranges development courses for Directors and Independent Directors tailored to their schedule and expertise. In 2022, the Program centered around issues of sustainability and governance, totaled 86.5 hours.

The total hours of professional development for the members on the Board of Directors in 2022 were 150.5 HOURS

Succession Plan for Top Management

To strengthen the knowledge of the top management on the responsibilities and roles of managers, the talent echelon is effectively established at the Company via project/task delegation, middle/senior management evaluations, rotation across business units, and expatriation to companies overseas. Regarding the improvement for the top management functions, TCC arranges manger training programs as well as courses on strategic planning and decision-making for the management, including the Chairman, President, managers and mid-level supervisors in order to attain the performance targets through leadership in teamwork. With the annual performance evaluation combined, it makes the reference for the succession of top management.

TCC formulated the diversity policy as appropriate based on the operation, business model, and developmental needs thereof. The candidate pool of Directors is created on the ground of two criteria as follows:

Basic Criteria and Values

- Gender, age, nationality, culture, etc. as well as the understanding of the Company's potential in business diversification aside from an in-depth knowledge of the core businesses of TCC.

Professional Knowledge and Skills

- Diversity in the professional backgrounds (e.g., legal, accounting, industry, finance, marketing or technology, etc.), expertise and industrial experiences of the potential candidates of Directors.

Remuneration Policy

The President's performance as well as the related wage and remuneration policy, mechanisms, standards, and structure are evaluated by the Remuneration Committee based on the contributions thereof to the Company's operation before submitted to the Board of Directors for approval. Apart from the linkage to performances, the evaluation scope for wage and remuneration also encompasses the non-financial performances, such as corporate governance, green finance, social care, and environmental sustainability. The targets are as follows:

Profitability performance indicators
- Net profit after tax
- Growth rate

Risk indicators
- Compliance with laws and regulations

Talent development indicators
- Talent cultivation
- Enhancement of employee capabilities and qualities
- Cultivation of international perspectives

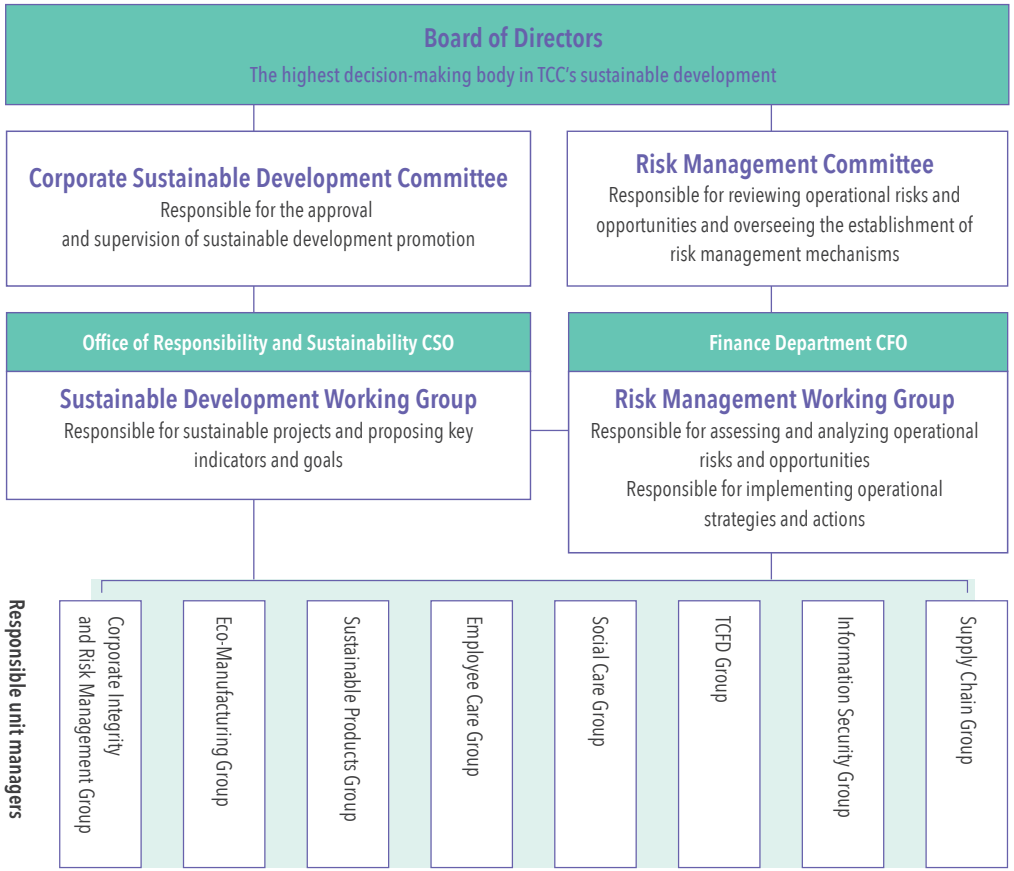
Strategic goals
- Achieving circular sustainability through the development of a circular economy

5.3 / Sustainability Management Framework

MANAGEMENT APPROACH | **Corporate Sustainable Development Committee Charter**

The Board of Directors is the top decision-making and oversight body for the sustainable development affairs of the Company, which directly supervises the promotion and governance framework of sustainable development.

Sustainability Management Implementation



The Board of Directors approved the establishment of "Corporate Sustainable Development Committee" in 2018, which was promoted into a functional committee in July 2021. The committee is responsible for the approval and supervision of sustainable development promotion. It convenes at least twice a year and reports to the Board of Directors. Through the presentation of the Corporate Sustainable Development Committee each year, the Board verifies the sustainable development and ESG management approaches of the Company, as well as oversees, tracks and reviews the annual sustainable development implementation by the management team and the progresses made on the performance targets to strengthen the constitution of the Company.

To further integrate the resources of TCC for the promotion of sustainability projects, TCC established the Office of Responsibility and Sustainability in 2022, tasked with the coordination of the sustainability promotion at TCC and interdepartmental communication and coordination to present improvement recommendations. The Chief Sustainability Officer (CSO) is to regularly report to the members on the Corporate Sustainable Development Committee.

There are eight functional groups under the Corporate Sustainable Development Committee, including the functional groups of "Corporate Integrity and Risk Management", "Eco-Manufacturing", "Sustainable Products", "Employee Care" and "Social Care", Also, in line with the international trends, three ESG-oriented taskforces, "TCFD," "Information Security," and "Supply Chain" were created as well. The functional groups were composed of level-1 supervisors and senior personnel of relevant departments or subsidiaries, who were assigned with EGS affairs pertaining to their departmental responsibilities.

The Corporate Sustainable Development Committee formulated the execution strategies and targets in accordance with the Sustainable Development Pathway of the Financial Supervisory Commission (FSC) in 2022. Also, the Committee defined the scope, timetable, and targets of GHG inventory for TCC, which were submitted to the Board of Directors for presentation and adoption, so as to materialize the sustainable development directions of TCC. Please check the QR Code for the resolutions adopted by the Corporate Sustainable Development Committee.

2022 Sustainability Project Promotion Results

1

Sustainable Development Pathway of FSC

The scope and schedule of GHG inventory for TCC and our 147 Subsidiaries

2

Science-based carbon reduction and management

Renew SBT in 2024 and promote internal carbon trading

3

Low-carbon and green products

TCC's cement has obtained the carbon reduction label from EPA. Furthermore, we are planning to apply for carbon labeling for our main concrete products, develop UHPC, and develop UHPC energy storage containers.

4

Sustainable Initiatives

TCC is the first large-scale manufacturing company in Taiwan to become a member of the EP100 initiative. Since March 2022, we have initiated the operation of next-generation charging stations and simultaneously launched the EARTH HELPER initiative.

5

Sustainable trends assessment

Follow international trends to plan for TCC's future, such as EV100+ initiatives and TNFD structure.

Risk Management Implementation

The Board of Directors is the highest decision-making body in risk management that directly oversees the risk governance framework of the Company. To improve risk assessment and strengthen managerial functions, the Board approved the establishment of the "Risk Management Committee" in May 2020. The Committee is responsible for the identification and management of risks associated with corporate operations, including the physical, transition, and emerging risks potentially arising from climate change, and leads the planning for relevant countermeasures.

The "Corporate Social Responsibility Best Practice Principles" of TCC demands that the Company is to conduct assessment of risks related to the environmental, social, and corporate governance issues in relation with the corporate operations pursuant to the materiality principle. The Board adopted "Risk Management Policy and Principles" and "Risk Management Committee Charter" on August 11, 2020, to contain the risks potentially resulted from businesses thereof to a tolerable extent and to establish the risk management principles.

Based on the scope of businesses of different departments, the Risk Management Committee undertakes risk identification and analysis on seven aspects, i.e. operation, finance, states, legal compliance, ESG, personnel, and information security, as well as updates the annual matrix of major risks identified. Then, according to the results, departments shall engage coping strategy planning, integrate and manage risks with potential impacts to operation and profit. The Risk Management Committee presents the execution status and risk management report to the Board of Directors at least once a year as well as monitors, tracks, and reviews the risk management status of the management team to strengthen the constitution of the Company.

TCC Risk Identification and Impact Analysis

With reference to the global economy risks reports, risks reports of peers in cement or energy, and international trends and in line with the 7 aspects of risk identification and analysis of TCC, TCC identified the critical facets with the greatest impacts possible in 2022, including geopolitics and conflicts, inflation and pressure of interest rate rise, carbon emissions control, pandemic lockdown, structural workforce shortage, and cybersecurity failure. Furthermore, based on the said facets, the 2022 risks matrix of TCC was analyzed. Also, the responsible departments planned the coping strategies for the six high-risk items seen in 2022, such as declines in supply/demand and average selling prices, prices and supply/demand of raw materials and fuels and alternatives, supply chain risks, etc. Please refer to Chapter 5.4-5.9 of this Report for the responding and preventive actions of different departments against risks in their businesses, and the Annual Report for details of financial risks.

In addition, to have a more comprehensive coverage of risk management and issues of concern at TCC, in each material issue identification at TCC, the management of the Company will conduct impact analyses like the impact levels on corporate operation and risk assessment with respect to sustainability issues. Please refer to the chapters pertaining to material issues analysis in this Report.

Finance risks | Finance Department
Legal compliance risks | Legal Office
Operations risks | Engineering Affairs Department, Sales Department, Low-carbon R&D Center
Personnel risks | Human Resources Department
National security risks | Office of Responsibility and Sustainability, Finance Department
Information security risks | Information Security Management Committee
ESG risks | Office of Responsibility and Sustainability

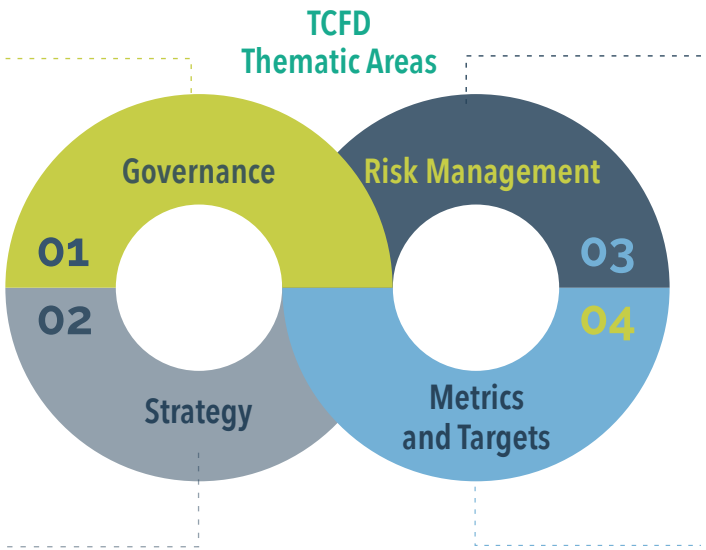
5.4 / Climate Risks: TCFD

As a citizen of Earth, TCC is acutely aware of the impacts brought by climate change worldwide. In response to the high uncertainty and policies of climate and rapid changes on markets as well as to capture and estimate the potential impacts of climate scenarios on TCC, we assembled senior managers of various departments for reidentification of material climate risks and opportunities. In addition, we have strengthened the analysis of scenarios for carbon price, carbon emissions control, and extreme weather events. Aside from update of the financial impacts arising from carbon price and carbon emissions control with the scenario parameters released by the latest international science and technology reports, we went further to assess the possible risks to all plants in operation arising from flood, drought, typhoon, and heatwave in an attempt to capture the climate change and market dynamics externally for the consideration of overall operational strategy planning in a more wholistic manner.

Governance

Board of Directors is the highest decision-making body in climate topics

- The Board of Directors monitors the risks and opportunities related to climate change each year, approves the climate strategies, and tracks the achievement of performance indicators.
- The two functional committees, the "Corporate Sustainable Development Committee" and the "Risk Management Committee" (see 5.2 Board Functions for relevant responsibilities thereof), regularly report to the Board of Directors the statuses of climate strategy implementation and risk responses.
- To capture the progresses on climate topics timely, the Chairman holds regular meetings with the President and the Vice Presidents of functional units to oversee climate actions in practice. There is also a working group composed of the first-level managers under the Committee, which holds cross-departmental meetings from time to time to discuss climate strategies and reports the promotion results to the Chairman or the Board of Directors.



Strategy

The time frames are defined as three years for the short term, three to five years for the medium term, and over five years for the long term to assess the potential operational and financial impacts of climate-related risks and opportunities on the Company.

Respond to climate-related risks and opportunities via six climate strategy aspects – Low-Carbon Cycle, Natural Disaster Adaptation, Mutually Beneficial Supply Chain, Low-Carbon Products, R&D and Innovation, New Energy Business Development.

In response to the high uncertainty of climate scenarios, analysis of multiple scenarios is performed on the basis of the latest scientific reports so as to capture the development and changes of the climate trends in the medium and long term as a whole and to formulate responses accordingly.

- Transition risks: Assess the financial impacts in three carbon price scenarios, i.e. Stated Policies Scenario (STEPS), Announced Pledges Scenario (APS), and Net-Zero Emissions by 2050 Scenario (NZE2050).
- Physical risks: Assess the physical risks with IPCC's RCP scenarios on an ongoing basis, plan in accordance with the IPCC's latest Shared Socioeconomic Pathway (SSP), estimate the long-term climate change in the future using the Global Climate Model (GCM), which covers the climate change assessments of various regions, and conducts risk assessments of operating sites through downscaling analysis.

Risk Management

A climate risk identification process is established with the likelihood, level of impact (financial aspect covered), and impact time frames of climate risks and opportunities related to TCC determined cross-departmentally every two years.

The climate change risks have been incorporated into the overall risk management process of TCC.

Metrics and Targets

Ongoing tracking of climate-related management metrics

- TCC continues to track the management metrics of the six climate actions and performances of various non-financial indicators (see to the ★ marks in TCC Sustainability Targets and Performance Tracking), and links the carbon reduction targets with the annual performance appraisal and the remuneration and reward system.

Setting of carbon-neutrality pathways for cement and concrete

- Please refer to the relevant target setting in this report (please refer to the information on low-carbon cement and concrete in Section 2.2).

Introduction of an internal carbon pricing system

- An internal carbon price has been applied to major capital investment decision-making, with the scope of application assessed to be expanded year by year (see the information of internal carbon pricing in Section 2.2).

Risk Management in Four Thematic Areas

Climate Risk and Opportunity Assessment

TCC regularly assesses climate risks and opportunities on the basis of the TCFD framework every two years. Through representatives of various departments and external consultants, it identifies transition risks, physical risks, and relevant opportunities with regard to external changes and trends in policies/regulations, markets, and climate disasters, as well as internal operating strategic directions. Compared with the previous assessment results, the impact of carbon trading/carbon fee/carbon tax on carbon emissions regulation has significantly increased. The main reason lies in the accelerated promotion of carbon pricing system in the areas TCC operates. In terms of opportunities, the impact of securing inventors' willingness for long-term investment is relatively higher as well, signaling that the accelerated transformation at TCC is more likely to win the favor of funds in the capital market.

Climate Change Risk and Opportunity Identification Process

Update the industry trends, important international initiatives, and legal/regulatory requirements at where it operates, as well as update relevant issues, on the basis of the previous identification.

Execution Results

13 key risks and 8 derivative opportunities selected pursuant to the TCFD's categories for TCC in 2022

STEP 1

Collection of Climate Issues

Call cross-departmental workshops to probe into the actual impact of each risk/opportunity on TCC, the time of occurrence, the sources, and the possible financial impacts.

Execution Results

16 internal assessment questionnaires distributed

STEP 2

Assessment of Impacts on TCC

Analysis and Determination

STEP 3

Analyze the assessment questionnaire, refer to the perspectives of external experts, and identify key risks/opportunities.

Execution Results

11 key risks
7 derivative opportunities

Response Strategies

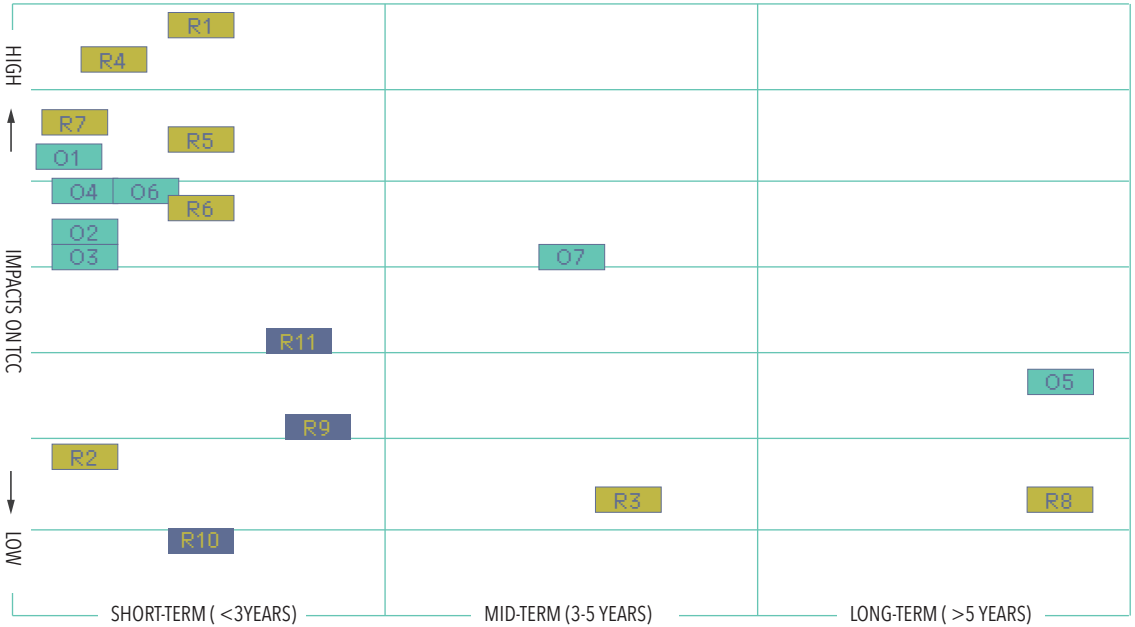
STEP 4

Link the existing mitigation and adaptation strategies to respond to key risks/opportunities.

Execution Results

Six Climate Strategies

Climate Risks & Opportunities Matrix



Transition Risks

- R1 Carbon trading/carbon fee/carbon tax for total carbon emissions control
- R2 Regulations and procurement of renewable energy
- R3 Decommission of the coal-fired Hoping Plant
- R4 Costs in the low-carbon technologies, equipment and management
- R5 Impacts to corporate reputation
- R6 Impacts on the strength of supports from financial institutions in investment, financing, and insurance
- R7 Rising prices of raw materials and energy
- R8 Breakthrough in the advanced technology of carbon capture and storage (CCS)

Physical Risks

- R9 Flood (production)
- R10 Changes in precipitation patterns and extreme changes in climate patterns (transportation)
- R11 Drought (production)

Opportunities

- O1 Smart low-carbon production and waste co-processing
- O2 Involvement in the carbon trading market
- O3 Installation of new energy projects
- O4 Involvement in the electricity trading market
- O5 Application of the oxygen enriched combustion and oxy-fuel combustion technologies to carbon capture and reuse
- O6 Securing inventors' willingness for long-term investment
- O7 Exploration of the market for low-carbon products

Response Strategies in Four Thematic Areas

TCC's Actions towards Climate Change Risks and Opportunities

Financial impacts (impacts caused by ▲ Risks and ● Opportunities included)

▲ Risks	● Opportunities	Financial impacts	Responses	Actions
Carbon trading/carbon fee/carbon tax for total carbon emissions control	Involvement in the carbon trading market	▲Rising costs ●Increased income	Low-carbon cycling	Promotion of 7 strategies: Equipment & Process Enhancements; Power Generation by Waste Heat Recovery; Alternative Raw Materials; Alternative Fuels; Renewable Energy Installation; Energy Storage, Batteries, and Charging Services; Carbon Negative Technologies (Carbon Capture and Carbon Sink) Construction of the Renewable Resource Recycling Center (RRRC) and the waste co-processing projects Trial internal carbon trading platform internally and involvement in external electricity trading platform externally
Regulations and procurement of renewable energy	Involvement in the electricity trading market	▲Capital expenditures ▲Rising costs ●Increased revenue ●Reduced costs	New energy business development	Establishment of Energy Helper TCC Corporation to provide green power consulting services as well as creation of a green power trading platform and provision of auxiliary services for the bidding power trading platform
Decommission of the coal-fired Hoping Plant	Installation of new energy projects	▲Decreased revenue ▲Rising costs ●Increased revenue ●Reduced costs	Low-carbon cycling New energy business development	Promotion of the Hoping Power Plant Transformation Plan, including the environmental emissions reduction project as well as the planning and assessment for solid recovered fuels, small hydropower, etc. Investment in clean energy and energy storage as well as active development of new energy sources such as solar energy, bioenergy, geothermal energy, and marine energy
Breakthrough in the advanced technology of carbon capture and storage (CCS)	Application of the oxygen enriched combustion and oxy-fuel combustion technologies to carbon capture and reuse	▲Capital expenditures ▲Rising costs ●Reduced costs	R&D Innovation	Ongoing research and development of carbon capture technology for the long-term scaling and economy
Costs in the low-carbon technologies, equipment and management Rising prices of raw materials and energy	Smart low-carbon production and waste co-processing Exploration of the market for low-carbon products	▲Capital expenditures ▲Rising costs ●Increased revenue ●Reduced costs	Low-carbon cycling Low-carbon products Common good with supply chain	Establishing SBTs and Net Zero by 2050 for the long term Promotion of cement products to obtain dual carbon labels, encouragement to concrete customers to apply for green building certification with TCC's concrete with Carbon Footprint Reduction Label, and investment in research and development of new UHPC products To request suppliers to collect carbon emissions data and implement carbon reduction measures, and to recognize excellent supplier partners.
Impacts to corporate reputation Impacts on the strength of supports from financial institutions in investment, financing, and insurance	Securing inventors' willingness for long-term investment	▲Funds available decreased ●Funds available increased	Low-carbon cycling Climate adaptation Common good with supply chain Low-carbon products R&D Innovation New energy business development	Managing climate-related risks & opportunities in accordance with TCFD recommendations Regularly communicating sustainable achievements with institutional investors/media Participating in well-known ESG assessments, such as MSCI, DJSI, and CDP, to demonstrate carbon reduction performances
Flood (production) Changes in precipitation patterns and extreme changes in climate patterns (transportation) Drought (production)		▲Decreased revenue ▲Rising costs	Climate adaptation Common good with supply chain	Assessment of physical risks at respective production sites using climate science models Real-time monitoring of precipitation, water levels and changes, as well as establishment of an emergency response coordination mechanism for production and marketing Leveraging the real-time monitoring of water level information of Water Resources Agency to plan for countermeasures to water shortage War Room Dashboard Management: adoption of optimal inventory and flexible arrangement of transportation Formulation of various water resources management strategies, including: (1)Water use reduction; limiting distribution and shipment (2)A full leverage of meteoric water to support the sedimentary ponds on the plants to raise water storage (3)Transportation of water across regions and increase in the use of reclaimed water (4)Mutual support in material supply with other plants (5)Use of groundwater

Assessment of Climate Risk Scenario Analysis

Pursuant to the TCFD supplementary guidelines and recommendations for the Materials and Building Group, TCC conducts analysis and assessment of climate scenarios for carbon price, carbon emissions regulation, and extreme weather events.

1. Climate risk scenarios of carbon price and carbon emissions regulation:

The directions of the GHG laws and regulations in the countries where TCC mainly operates in are analyzed. The financial impacts arising from the carbon price trends in three scenarios, i.e. Stated Policies Scenario (STEPS), Announced Pledges Scenario (APS), and Net-Zero Emissions by 2050 Scenario (NZE2050), are assessed.

2. Climate risk scenarios of extreme weather:

The possible risks of respective operating plants brought by floods, droughts, typhoons, and heatwaves are taken into consideration on the basis of the geographical locations where TCC operates. The low emissions mitigation scenario (SSP1-2.6) and the extremely high impact emissions scenario (SSP5-8.5) are further selected for assessment of the financial impacts on TCC. After aggregation, the aforementioned scenario analysis results are included in the resilience strategy considerations to actively adjust the response plans for mitigation and adaptation.

Consolidate the assumptions regarding risk types and different scenarios mentioned

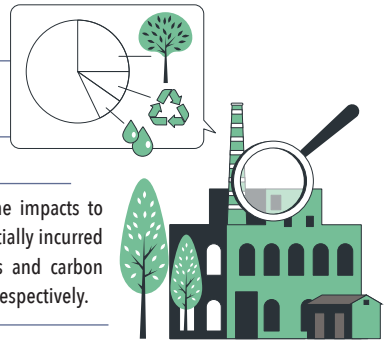
Risk Category: Transition

GHG regulations and carbon pricing policies

Scenario Selected	Key parameters
IEA Stated Policies Scenario(STEPS)[NOTE 1]	Hypothetical carbon prices of the locations or regions of operation in different scenarios[note 2]
IEA Announced Pledges Scenario(APS)[note 1]	
IEA Net Zero Emissions by 2050 Scenario (NZE2050)	

Assessment Description

With the warming managed at 2.5°C, 1.7°C, and 1.5°C, the impacts to operation arising from emissions-related expenditures potentially incurred in 5-10 years from the corresponding carbon price trends and carbon management regulations in the operating sites are assessed respectively.



Risk Category: Physical

Floods, Droughts and Long-Term Climate Pattern Changes

Scenario Selected	Key parameters
IPCC – AR5 RCP8.5	Changes in drought duration and precipitation index arising from extreme weather
IPCC - AR6 SSP1-2.6、SSP5-8.5[note 3] (Planning and Assessment)	

Assessment Description

In the scenario of the highest warming level of temperature rise, the potential impacts to operation by the mid-century arising from increased costs in alternative transportation and equipment repair due to intensified droughts and increased number of typhoons brought by extreme weather are assessed.
In the scenario of the ideal warming mitigation or the highest warming level of temperature rise, the changes in the risks of heatwaves, floods, and droughts brought about by extreme weather are assessed.

Note 1: The STEPS and APS in the World Energy Outlook 2022 of the International Energy Agency (IEA) are cited, which respectively represent the carbon price trend and emissions reduction pathway for the global average temperature rise by approximately 2.5°C by the end of the century with the current policy formulation scenario and the specific policies and carbon emissions managed with policies enforced by governments included as well as the global average temperature rise by about 1.7°C with all the climate commitments of governments, including the Nationally Determined Contributions (NDCs) and long-term net zero goals, fulfilled as scheduled by the end of this century.

Note 2: The references for the hypothetical prices are from World Energy Outlook 2022 and the carbon pricing options for Taiwan 2020 of the Environmental Protection Administration, Taiwan, without the preferential rate of carbon fee taken into consideration.

Note 3: The SSP1-2.6 and SSP5-8.5 scenarios in the 2021 Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) are cited. SSP1-2.6 represents a scenario of low greenhouse gas emissions. In this scenario, there will be a significant reduction in the global carbon dioxide emissions, the goal of net-zero emissions to be achieved after 2050, and a global temperature rise by 1.8°C by the end of this century. SSP5-8.5 is a scenario of very high greenhouse gas emissions with the assumption of high emissions and a significant increase in coal use in the future, rendering the impact pathway of a global temperature rise by 4.4°C by the end of this century.

Financial Impacts after Analysis and Assessment of Climate Scenarios

Financial Impacts in the Climate Risk Scenarios of Carbon Price and Carbon Emissions Regulation

For the cement industry with high carbon emissions, the impact of GHG emissions control regulations is evident. The most important cement production bases of TCC at this stage have been inventoried, which are located in Taiwan and Mainland China, respectively. In terms of carbon system planning in Taiwan, the Climate Change Response Act was passed in the third reading by the Legislative Yuan on January 10, 2023. The legal basis for the collection of carbon fees is introduced and is expected to come into force as early as 2024. The national carbon trading market in Mainland China has been formally established in 2021, and the cement industry has yet been included in the national carbon trading system. For the carbon emissions regulation of the cement industry in the region, a cap-and-trade system is in force via the regional carbon trading pilot.

Through TCC's assessment of the future changes in the yield of cementitious materials and the carbon emissions that meet the internal reduction targets, with the assumption of the enforcement of the carbon fee system in Taiwan and the inclusion of the cement industry in the national carbon trading system in Mainland China, combined with the three climate scenarios, i.e. STEPS, APS, and NZE2050, taken into account, the carbon prices analysis are as follows:

	RESPONSE STRATEGIES	
IEA STEPS Carbon price in the Stated Policies Scenario		Reduced by approximately NT$4.19 billion Financial impact from carbon price
IEA APS Carbon price in the Announced Pledges Scenario	Alternative raw materials input Alternative fuels and biofuels input Production process enhancement	Reduced by approximately NT$6.51 billion Financial impact from carbon price
IEA NZE2050 Carbon price in the Net-Zero Emissions by 2050 Scenario	Power generation by waste heat recovery Renewable energy installation Carbon capture	Reduced by approximately NT$14.88 billion Financial impact from carbon price

Note: The financial impacts are comparison results against the failure in adoption of mitigation measures.

Faced with the major transition risk of "carbon trading/carbon fee/carbon tax for total carbon emissions control," TCC has initiated the transition as early as 2017, planning for the increase in the alternative raw materials and fuels, production process enhancement, and ongoing research and development of carbon capture technology , renewable energy installation, improvement to the efficiency of power generation by waste heat recovery, among other mixed resilience strategies, so as to reduce carbon emissions generated from the cement process to increase the potential in operational reduction, effectively controlling the risks brought about by carbon pricing policies. Meanwhile, carbon emission intensity is incorporated as the key performance indicator (KPI) for plants in order to improve the reliability of internal carbon reduction targets. Moving forward, TCC shall not only continue to strengthen the carbon reduction efforts of the above-mentioned strategies, but also consider moderate production reduction and cement price transfer, so as to minimize the financial impacts of such risk on TCC.

Financial Impacts in the Climate risk scenarios of extreme weather

Through internal discussion, inventory, and assessment, TCC identifies potential risks in the production or transportation phases arising from extreme changes in climate patterns like floods, droughts, and changes in precipitation patterns. A flood caused by heavy rainfall will lead to plant shutdown and equipment damage. In 2022, the Yingde plant had seen a once-in-a-century flood hazard. Back then, the facilities at the Beijiang port were submerged, resulting in a temporary shipment failure. Drought and water shortage will affect the normal operation of the concrete plants in Taiwan. When there is a shortage of water, it requires water use reduction, transporting water across regions by water trucks, or transferring goods from other plants, which result in an increase in operating costs. The extreme changes in precipitation patterns and climate patterns mainly render impacts on the cement production sites in the southern region of Mainland China, which relies on river transportation. The increased rainfall intensity and the concentrated rainy season will increase the variation in the water level of the river for transportation. An excessive water level will flood the facilities at the port, while a low water level will reduce the transportation capacity. Either one is not conducive to the transportation of raw materials and finished products. Consequently, they are to be transported via land transportation, resulting in poor efficiency and increased transportation costs.

To address the risk of flooding arising from typhoons, changes in precipitation patterns, and extreme changes in climate patterns, on the basis of the research data from Taiwan Climate Change Projection Information and Adaptation Knowledge Platform (TCCIP) and from the Chinese Academy of Sciences of Mainland China and with reference to the worst warming scenario of RCP8.5 in the IPCC Fifth Assessment Report (AR5), TCC has analyzed the operational and financial impacts on the plants of TCC. In such scenario, the number of typhoons affecting Taiwan will decrease by 15% in the middle of the century, but the proportion of strong typhoons will increase by 100%; the dry season in the southern China, the locations where the Yingde and Longshan Plants are, will increase by 54% in the middle of the century, extending from the average of 2.67 months at present to 4.11 months. The analysis results show rises in all the risks faced.

TCC shall continue to improve on the analysis of physical risk scenarios. In the future, the SSP1-2.6 ideal mitigation scenario and SSP5-8.5 very high emission scenario in the latest IPCC Sixth Assessment Report (AR6) will be used to perform the assessment of changes in risks for operating sites. In addition, aside from assessment of the existing risk issues, the risk of heatwaves is expected to be included as well, so as to strengthen TCC's climate adaptation management and strategies. The relevant analysis results will be presented in the 2022 TCFD Report of TCC.

5.5 / Sustainable Supply Chain

MANAGEMENT APPROACH

TCC ensures consistency among suppliers in terms of quality, cost, delivery time, service quality, environmental safety and health, and production. TCC collaborates with suppliers to promote environmental protection, human rights, and sustainable development through resource recycling, driving the sustainable development of our supply chain.

TCC adopts two strategies, namely "sustainable supplier management" and "local and green procurement." TCC creates the model of mutual support and benefit that is publicly transparent and eco-friendly by working hand in hand with our suppliers. In 2022, 100% new suppliers signed the Anti-Corruption Statement and Supplier Code of Conduct.

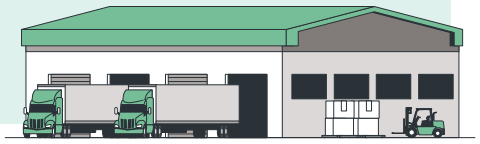
In addition, TCC improved the supply chain intelligence. AI technology was applied to the supply chain. From supplier selection, logistics to warehousing, these processes are supported with the new technology to optimize carbon reduction and reduce possibility of corruption.

Critical Tier-1 Suppliers

A Critical Tier-1 Supplier is defined as a supplier that is critical to the quality and delivery of the Company's product manufacturing, or that reaches a certain procurement amount or ratio, which is a critical supplier required to be managed and evaluated, along with implementation of supplier evaluation.

As of the end of 2022
892 suppliers in total
Critical Tier-1 Suppliers were 88

accounting for 87.81% of the procurement amount.



Join hands towards a sustainable supply chain

To capture TCC Scope 3 emissions for the following management and engagement, TCC planned the short-, mid-, and long-term managing strategies by 2030 with reference to the Greenhouse gas management document released by SBTi in 2018*, including the short-term emissions inventory data collection, together with mid- and long-term reduction as well as ongoing information disclosures and supplier communication.

In 2022, TCC completed the design and distribution of the supplier carbon questionnaire. Written review was conducted for each questionnaire collected. Then, on-site inspections were carried out for certain Critical Tier-1 Suppliers to collect the supplier GHG emissions firsthand. Also, in response to the carbon inventory with bigger businesses to lead smaller businesses promoted by the Chinese National Federation of Industries (CNFI), TCC plans to continue to distribute carbon questionnaires yearly in the future and aims to complete on-site inspections to 30 Critical Tier-1 Suppliers cumulatively in 2023.

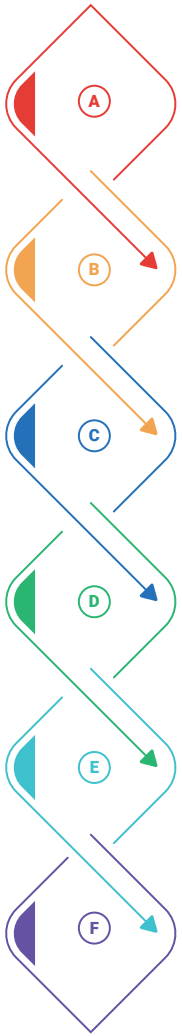
64.6% completed
Critical Tier-1 Suppliers
Emissions Inventory Data Collection

**Value Change in the Value Chain: BEST PRACTICES IN SCOPE 3 GREENHOUSE GAS MANAGEMENT,* Version 3, SBTi, 2018

Sustainable Supplier Management

TCC values sustainable supplier management. With reference to the guide for supply chain of the United Nations Global Compact (UNGC), TCC strengthens our influence on suppliers via six steps, including target setting and risk and impact assessments. Please refer to the Supply Chain Management of TCC for details of supplier evaluation metrics (e.g. environment, human rights, legal compliance, etc.) and Supplier Code of Conduct.

United Nations Global Compact



Target Setting

Five targets were set for the sustainable supplier management at TCC.

The Critical Tier-2 Suppliers identification commenced in 2022 so as to broaden the supplier management scope.

Risk and Impact Assessment

TCC assigns suppliers into different categories and ratings and assesses the sustainability exposures and impact levels in each category.

Sustainability Performance Evaluation

Through the Supplier Sustainability Self-Evaluation Questionnaire, TCC regularly conducts reviews on paper and on site to the existing suppliers each year and undertakes evaluation via inspection and correction tracking.

Issue of biodiversity was added to the Supplier Sustainability Evaluation Forms in 2022.

Correction and Improvement

Suppliers with excellent performance are listed as priority suppliers for procurement and are publicly recognized.

High-risk suppliers will be issued with correction notice. Then, the sustainability resilience of the suppliers are to be improved via education, training, workshops, etc.

Training, Empowerment, and Cooperation

The 1st Supplier Sustainability Governance Workshop was organized by TCC on November 23, 2022, inviting professional consultant team to share on sustainability trends.

Supervision, Assessment, and Mutual Learning

TCC tracks and assesses the sustainability actions of suppliers in the sustainability review of the following year.

331 Sustainability Partners Gathered for Supplier Convention

To strengthen the partnership with our suppliers and communicate the idea of corporate sustainability, TCC organizes "Supplier Convention." The theme for 2022 was "Low-Carbon Cycling & Sustainable Future." A total of 331 suppliers from Taiwan and Mainland China attended the convention. Meanwhile, to encourage commitment to ESG actions, 10 excellent suppliers were recognized this year. Also, "Sustainability Progress Award" was created to recognize the top 3 partners with the most progresses made in the sustainability evaluation, to which TCC cement trophy was presented as acknowledgement.

New Supplier ESG Assessment

TCC conducts background check for all new partners and demands signing of the Supplier Code of Conduct. Meanwhile, the suppliers are required to fill out TCC Supplier Sustainability Evaluation Forms, so that TCC can verify the ESG performances of new suppliers. Also, the quantified criteria are set for the preliminary partner screening. As a result, the suppliers will meet the basic requirements in sustainability prior to becoming a supplier to TCC.

Local and Green Procurement

Through supply chain localization, suppliers' service efficiencies are elevated; delivery time is shortened; transport distance and carbon emissions of raw materials are reduced. Also, opportunities of local employment are increased to promote social and economic development. Meanwhile, the "Green Procurement Policy" has been formulated at TCC to prioritize the procurement of products and services in alignment with the policy standards, including but not limited to low energy consumption, low pollution, recyclability, etc. In 2022, the local procurement ratio was 77.01%, the non-raw material local procurement ratio was 93.79%, and the green procurement ratio was 4.51%.

Intelligent Supply Chain – Procurement Portal

TCC introduced the AI technology for our supply chain. The self-developed "Procurement Portal" carries out supplier selection, electronic bidding, and risk management of material quality. Hence, the smart manufacturing is expanded to the upstream of the industry, accelerating the next upgrade for the industry. Meanwhile, suppliers are able to access information in real-time via the platform for a bilateral communication. Blacklisted suppliers were 100% blocked by the screening in 2022. Also, the group code verification is added. A 100% was achieved regarding the associated suppliers screening block rate. In 2024, further optimization of raw material procurement, including coal, will be implemented.

Smart Warehouse

The smart warehouse at TCC Hoping Plant was inaugurated in July 2020 with PV panels to generate power for self-consumption. There is zero paper and carbon footprint throughout the process. The warehousing is guided by the intelligent lighting control, cutting working hours by 87% and elevating the reception and requisition efficiencies.

AI Smart Logistic System

The AI Smart Logistic System firstly created by TCC innovated the transportation mechanism for the cement industry. The raw materials and products of the cement industry are mostly transported with vehicles and vessels. Also, now that the transport characteristics are varied for suppliers and customers, TCC developed a system to help automatically collect information of vehicles and vessels of TCC plants, customers, and suppliers that voluntarily participate in the matchmaking. The bilateral matchmaking is made with vehicle plate number and vessel registration number. Transportation needs with varied limits are met through the algorithm to reduce trips of no load for vehicles and vessels, thus achieving carbon reduction.

In 2022, through the AI Smart Logistic System, matchmaking was made for a total of 1,267 trips of vehicles and 850 trips of vessels, reducing 24,660.8 km and 485,935.6 km of no load, respectively.

Equivalent to approximately 1,584.3 metric tons of carbon emissions reduced.

5.6 / Client Communication

While selling products, TCC also engages carbon reduction promotion to the clients, elaborating on the great emphasis of TCC on carbon reduction in raw materials, processes, and product transportation and the results of low-carbon product development. In addition, promotion of ideas like using low-carbon concrete and carbon emissions reduction to the clients is enhanced as TCC engages client communication and education as an industrial leader ahead of regulatory standards.

Carbon Emissions Disclosed on Delivery Notes

Aside from promotion of low-carbon sales to the clients, TCC began to exercise low-carbon ratio disclosure promotion via disclosure on delivery note in 2023, expecting the clients to shoulder the responsibility of carbon reduction together with TCC.

TCC values sustainable business and ethical service of clients. The ratio and amount of usage are disclosed on the delivery note of each RMC transaction, together with the 50%-ratio carbon label for the cement products of 280, 350, 420, etc.

Excellent client feedback, TCC has been highly recognized by customers

Through the low-carbon sales promotion and client feedbacks, it is evidently that the low-carbon products of TCC are recognized by various sectors. The clients approve and support the carbon reduction direction of TCC, and advise their customers to use the low-carbon products of TCC.

Product Health and Safety Management

With the ISO 9001 system, TCC ensures the health and safety of our cement and concrete products. The voluntary inspection system is instituted, and six quality assurance and certifications are proposed, including six raw materials inspections, six third-party certifications, and the Carbon Footprint Reduction Label certification from EPA Taiwan. TCC ensures not only the product strength of, but also zero negative impact on health or safety from, the products. TCC maintains certified to the Good Ready-Mixed Concrete (GRMC) label, which embodies the extraordinary quality of TCC products.

Management Mechanism	Verification System
TCC Cement	Carbon Footprint Reduction Label certification from EPA Taiwan
Six Raw Materials Inspections	Cement, sand and gravel, slag, fly ash, chemicals, and mixing water, passed the tests by TAF laboratories like those of TCC, SGS, etc.
Six Third-party Certifications	◤ Cement specimen compressive strength report ◤ Good Ready-Mixed Concrete (GRMC) Label ◤ ISO 9001 ◤ ISO 14001 ◤ ISO 45001 ◤ TCRI product traceability certification

Product Health and Safety Communication

TCC seeks to provide products and services to clients' satisfaction, to achieve a win-win scenario.

TCC conducts education and training pertaining to product health and safety for employees to ensure that any employee is capable of communication on issues of product health and safety.

TCC offers good field services to clients, including on-site cement applications and ready-mixed concrete formula adjustment to resolve issues at the construction sites for clients. In addition, the client service groups arrange the monthly client services schedule to proactively care for clients' use of products. The Client Service Planning and Follow-Up Charts have been created for tracking and improvement. TCC offers the convenient order service via the e-commerce app as well, in which "TCC News" is available for clients to check the TCC's latest news. Also, results of TCC practicing science-based carbon reduction and a circular economy are released via the platform.

Aggregates Control:
A Three-Tier Internal Quality Control System

Tier 1	Branch plants conduct material inspections according to SOP
Tier 2	The parent plant goes to the branch plant for regular random inspections
Tier 3	The independent third-party research laboratory performs irregular visits to plant for random inspections

Cement Compressive Strengths (MPa) of TCC Cement

CEMENT TYPE	3 Days	7 Days	28 Days
Type I Cement	23.5	31.2	41.3
Low-alkali Cement (Type I)	23.8	31.6	41.9
Low-alkali Cement (Type II)	22.1	29.6	39.3

TCC's cement products exhibit superior strength compared to the CNS standard values, regardless of the 3-day, 7-day, or 28-day.

GRMC – Product Safety Traceability System

Through TCC's AI-powered system, the clients can scan the QR-Code to access the Customer Relationship Management (CRM) system to inquire raw materials and product inspection information. The sources of products and raw materials are completely disclosed. Also, together with the low-carbon products of concrete, the carbon emissions data are disclosed on the delivery note as well.

Traceability System

Standard UI

A user-friendly UI from the clients' perspective

Smart Connection

Inquiry of raw materials and product inspection in the CRM system by scanning the QR-CODE

Transparent Management

- To completely trace sources of products and raw materials, carbon intensity, and quality certifications
- Raw materials quality and traceability of concrete, external certification certificates, and TCRI traceability certification.

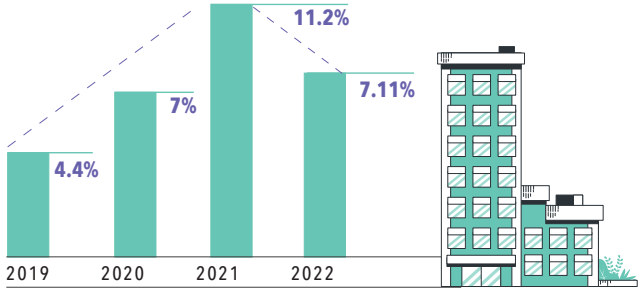
Strength information	Sand and Gravel	Carbon Emissions Information
Cement	Fly ash	Chloride reports
Slag	Aggregates	28-day strength test report
Chemical admixtures		
Quality assurance certificates		

Green Building Promotion

TCC encourages concrete clients to apply for green building certifications. Through the voluntary disclosures of concrete carbon emissions and ratio data, TCC helps our clients to align themselves with the green building CO_2 reduction indicator of the Ministry of the Interior, facilitating the mutually beneficial relationship between construction and the environment.

By 2025, TCC aims to achieve a revenue share of concrete used in green buildings that accounts for over 5% of the overall concrete revenue. By 2030, strive to surpass 6% revenue share. As of 2022, the revenue share has already reached 7.11%.

Note: The percentage of green building applications returned to normal because the huge construction projects came to their ends and that some clients from the tech sector postponed the progresses of plants under construction in 2022.



Client Satisfaction Survey

TCC regularly conducts customer satisfaction survey each year. After weighted average of the scores, up to 96.86% of the customers were Satisfied in 2022. This year, TCC shall further conduct satisfaction survey on the carbon emissions disclosure on delivery note and the faithful disclosure of ratio information in products.

Satisfaction Survey Results in 2022

		2019	2020	2021	2022
Corporate Brand and Reputation	Corporate Reputation	92.31%	93.26%	93.11%	93.11%
	Cement Brand	91.21%	93.04%	92.22%	
Disclosure of Carbon Emissions on Delivery Note to Promote Carbon Reduction and Sustainability		–	–	–	90.00%
Cement Quality Stability		89.89%	93.26%	90.44%	91.78%
Convenience of Concrete Distribution		83.08%	86.74%	85.33%	90.22%
Service Affinity		88.79%	90.87%	88.22%	92.22%
Client Complaint Response Time		87.91%	88.26%	87.11%	90.44%
After-sales Service		87.47%	89.57%	87.56%	91.11%
Total		**88.63%**	**90.60%**	**89.03%**	
Overall Satisfaction with Products Offered		87.03%	89.57%	88.44%	90.44%
Overall Satisfaction with Services Offered		86.15%	88.91%	88.00%	90.44%
Clients Rating "Satisfied"in the Satisfaction Survey (%)		96.70%	95.11%	96.67%	98.33%
Clients Responding to the Satisfaction Survey (%)		99.97%	99.90%	99.98%	99.98%

Note 1: The denominator of the product satisfaction is the number of questionnaires recovered multiplying by the full score (5), and the numerator thereof is the total of the scores responded by the clients.

Note 2: "Satisfied" is defined as 4 points or above.

Note 3: The denominator for the Clients Responding to the Satisfaction Survey (%) is the annual sales of the domestic clients (sales from the clients under other cement companies or their affiliates and from small purchases of 100 metric tons or less excluded), and the numerator thereof is the aggregated annual sales from clients in the questionnaires recovered.

Note 4: The item "Corporate Reputation" and "Cement Brand" are integrated as "Corporate Brand and Reputation" in 2022.

Note 5: "Disclosure of Carbon Emissions on Delivery Note to Promote Carbon Reduction and Sustainability" is a newly added item in 2022.

Note 6: The calculation of the weighted average of customer satisfaction in 2022 (numerator: total number of cement customers and concrete customers reporting scores of Satisfied; denominator: total number of cement customers and concrete customers that responded to the questionnaire)

5.7 / Information Security

MANAGEMENT APPROACH

TCC regularly reviews the risk management mechanisms for an effective implementation of risk management processes.

TCC has formulated our information security organizational framework in 2020. The "Information Security Management Committee" has been established, which maintains certified to the ISO 27001 Information Security Management System. Committed to the protection of the confidentiality, integrity, and availability of critical information system and data of the Group, the Committee is responsible for the promotion and review of the information security management system of TCC as well.

The Chief Information Security Officer (CISO) and Information Security Management Committee are instituted at TCC. The Information Security Management Committee is responsible for the promotion and review of the information security management system of TCC, including responses to the global trends of information security and optimization of information security management processes. Also, the top information security supervisor serves as the Chairperson to report to the Board of Directors on a regular basis. There is 1 Director on the Board with background in information security, who prudently oversees the management works. The Information Security Management Committee convened 4 meetings in 2022 and listed the information security with the TCC energy business as the focus for improvement.

Information Security Enhancement Project

Through measures such as public folder access restrictions, VPN connection security settings, two-factor authentication for sensitive area access, private electronic device connection access control, enhanced database access, and no storing of data in endpoints etc., the information security management is enhanced throughout TCC.

Non-camera Smartphones

Starting from August 2022, electronic devices with camera are prohibited for employees of information department when accessing sensitive areas and offices. Through distribution of non-camera corporate phones and storage cabinet installation, TCC prevents breach of sensitive information. Relevant measures are to be implemented to TCC subsidiaries in the future with the battery business as the priority for introduction.

Expanded Endpoint Information Security Review

Malicious connection detection and endpoint protection tools have been introduced. Together with Managed Extended Detection and Response (MxDR), the protection status at TCC is monitored 24/7. The group-wise endpoint device protection measures were introduced in July 2022, which are expected to be deployed to the subsidiaries like the Hoping Power Plant and Molie Quantum Energy in 2023.

Information Security Education and Training

The information security unit regularly conducts information security awareness education and training each year. The slides and footages of relevant programs are uploaded to TCC Lyceum for employees to access. Also, through the professional information security seminars by external experts as well as the information security policy and protection measures sent from the information security mailbox from time to time, the information security protection awareness of all TCC employees is strengthened. There will be six social engineering drills arranged in 2023. Information security related activities will be organized as well to improve the information security literacy of employees.

Performances in 2022

Recovery Simulation

- Completion of the annual simulation; regular data back-up(s) to ensure business continuity

Data Security Checks

- Completion of 4 data security checks; ongoing improvement of the security capabilities in networks, information systems, and personal computers
- 4 social engineering drills

Information Security Awareness

- 3 sessions of information security awareness training delivered; an external consulting firm commissioned for the information security management system (ISMS) of TCC affiliates and the provision of ISMS-related trainings
- 219 accesses of information security training with around 1,200 training hours in total

Information Security Mailbox

- 2 group-wise promotions; 1 phishing incident notice, and 6 information security measure announcements to the energy business (E-One Moli Energy Corp./NHOA.TCC)

Information Security Incident Handling Mechanism

The information security reporting and handling process has been stipulated clearly at TCC. Pursuant to the Flow Chart for Notification of Information Security Incidents, an incident is analyzed as to whether it is a system misjudgment. Should an incident be verified, a corresponding response will be activated in line with the information security incident level (Level 1 to 4 at present). Monitoring, reporting, and correction will follow after the incident is addressed to avoid any reoccurrence.

TCC unceasingly strengthens our information security management. Hence, there were only 2 internal information security incidents in 2022, including installation of external software and massive downloading of corporate data. TCC promptly blocked and reported the incidents at the onset, eliminating the risk of information breach. There was no critical information security incident.

Definition of Critical Information Security Incident at TCC:

- Breach of sensitive information or trade secrets
- Ransomware attack that leads to business discontinuity that cannot resume within a specified period due to encryption of a large number of devices or large-scale system or network paralysis

5.8/ Intellectual Property Management System

MANAGEMENT APPROACH

In combination with the existing areas of building material technology, TCC develops the renewable energy and energy storage businesses with an innovative thinking, realizing the ideas of sustainable development and circular economy.

TCC emphasizes intellectual property management pertaining to trademarks, patents, copyrights, and trade secrets and thus takes active protection and management measures.

Protection and Management Measures | To uphold the mission of being a green environmental engineering company, TCC actively enhances our technical capabilities. Through application, maintenance, and added-value utilization of relevant rights, TCC puts the ideas and plans of circular economy into practice, strengthens our leadership in the industry, and maintains the fruits of advanced technology gained from hard work.

Trademarks | Issues concerning trademarks are incorporated along with new business promotion to protect the rights of TCC brands.

Patents | Collaborates with external consultants periodically to conduct analysis and strategy discussions on research and application. Additionally, stays updated and engages in exchanges regarding relevant international technology trends.

Copyrights | Employees are required to abide by the Copyright Act during employment; promotions are made from time to time to establish the right copyright awareness.

Trade Secrets | Business partners are required to sign Non-Disclosure Agreement (NDA) for any business partnership involving technology development, technology collaboration, or any other trade secret information.

Performances in 2022

Trademarks

472 trademark applications made by TCC were approved in 25 jurisdictions globally like Taiwan, Mainland China, Europe, and USA. There were 125 trademark applications pending across the globe.

Patents

TCC updated the procurement process and standard procurement order provisions to ensure that TCC, as an investor, effectively obtains the intellectual property rights of entrusted development results and engages discussions of patent arrangement involving developing technologies with external consultants and senior managers from time to time. There were 5 sessions conducted by 2022. As of December 31, 2022, there were 40 invention patents granted and 26 invention patents applications pending.

Trade Secrets

TCC has been certified to ISO 27001 information security management system. The electronic document system is managed on a real-name basis, and the sensitive materials pertaining to core technologies are listed for management. Meanwhile, TCC bans technical R&D units from sending information to free-of-charge personal mailboxes or email addresses of competitors.

Future Plans

In 2023, TCC aims to establish an energy storage cabinet patent group and patent family, while enhancing management planning to protect and solidify our niche in the green product line. Meanwhile, TCC will organize periodic education and training for project personnel to enhance their understanding of intellectual property ownership in outsourced and entrusted development projects.

Establish the international patent family

Establish 1 or more patent families for energy storage products and file applications in jurisdictions beyond Taiwan (e.g. USA, Europe, or Mainland China).

Improve the thinking of management planning

1 or more summit meetings are convened for the application and maintenance of intellectual property rights.

5.9 / Ethical Management

MANAGEMENT APPROACH

TCC prevents graft and corruption, continuously monitors information from competent authorities, evaluates and adjusts ethical management policies and regulations, and ensures that business activities adhere to the highest principles of ethics; 100% of all new recruits sign the Statement of Integrity and Ethical Conduct.

TCC values corporate integrity and ethics. With an attitude of zero tolerance for corruption and bribery, Code of Ethical Conduct, Ethical Corporate Management Best Practice Principles, Anti-Corruption and Anti-Bribery Policy, Procedures for Anti-Corruption and Anti-bribery Management, Anti-Corruption and Anti-bribery System Management Manual, and other related regulations have been stipulated. TCC requires employees, business partners, directors, and managers to adhere to anti-corruption and anti-bribery policies and regulations in their duties. These aspects are included in employee performance appraisals. TCC is the first domestic enterprise to obtain ISO 37001 Anti-bribery Management Systems certification. The annual review was completed by an external verification body (BSI) in June 2022 to ensure the validity of the ISO 37001 system.

ISO 37001

To ensure a better alignment of the practical operations of the Company with the ISO 37001 systems, the directions and forms related to ISO 37001 systems were amended respectively in 2022. For instance, TCC added "Integrity Code" to differentiate the contents of the code; to perform due diligence prior to any employee transfer or promotion; and added "Business Partner Corruption Risk Assessment and Due Diligence Procedures" as the necessary procedures for ongoing improvement of ethical management.

The overall structure of ethical management at TCC is composed of three lines of defense, i.e. governance, legal compliance, and audit management.

Governance Structure

The Audit Committee oversees the achievement of management system goals at TCC. An "Anti-Corruption and Anti-Bribery Operation Team" has been established. The Legal Office leads and supervises the promotion, planning, and consultation of the management system in different departments, as well as audits the assessment of management system design and implementation effectiveness. The President takes overall responsibility for the operation and compliance of the management system, delegates tasks to relevant parties, and maintains effective communication with personnel at all levels within the organization. Department managers are responsible for managing and monitoring corruption or bribery risks in their respective departments' daily operations. The implementation of the system is reported to the Board of Directors at least once a year.

Legal Compliance

TCC's Legal Office conducts regular identification of "Internal/External Issues Registry" at the beginning of each year, monitors law amendments and competent authority requirements, and reviews previous year's risk responses. Emerging legal compliance issues, including anti-money laundering, anti-corruption, and environmental health and safety, are incorporated into standard contract provisions.

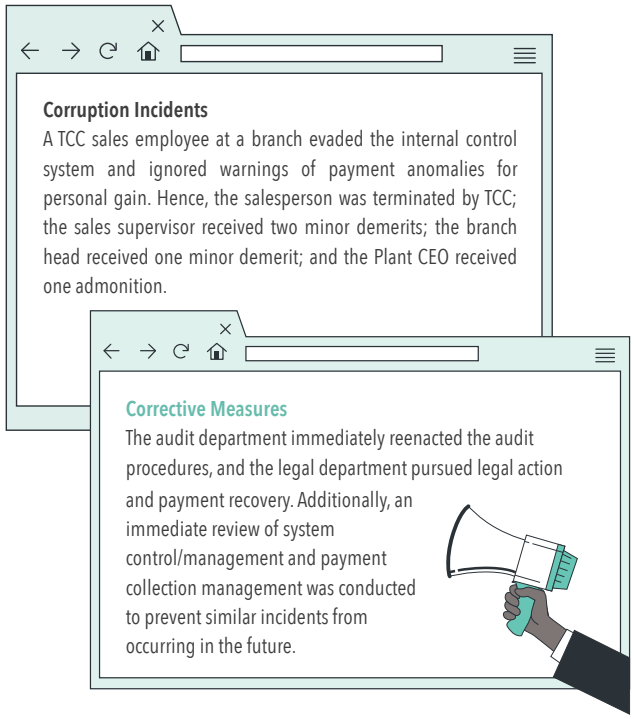
TCC departments and plants update their records of controversies to the Legal Office on a monthly basis. They are required to promptly notify the Legal Office of any legal case or compliance issue, allowing for risk understanding, case follow-up, and assessment of necessary system adjustments to ensure legal compliance.

In addition, TCC requires employees to sign the Statement of Integrity and Ethical Conduct, and holds annual readings of the ethical conduct policy. Actions of legal compliance and measures to address violations are promoted and incorporated into employee remuneration, performance, awards/punishments, and performance appraisals. The rewarding mechanism for legal compliance actions by employees is specified in the Reporting Mechanism for Violation of Code of Conduct.

All TCC employees have 100% signed the Statement of Integrity and Ethical Conduct. In addition to the Statement of Integrity and Ethical Conduct, suppliers involved in the business and managers of medium/high-risk clients are required to sign the Integrity Code, achieving a 100% signing rate as well. Meanwhile, a maximum gift value of NT$2,000 is enforced, and any gift exceeding this amount requires assessment and approval from the department supervisor. Prior approval from the President is mandatory for any gift presented to a government agency or official, regardless of the amount.

Audit Management

TCC is continuously improving our internal regulations in phases. By implementing an effective audit system, incidents of corruption can be promptly detected, leading to timely corrective measures.



In 2022, TCC implemented the remote audit mechanism, which resulted in a higher number of units audited while reducing carbon emissions and travel costs associated with on-site audits. A total of 117 units were audited in 2022, an increase of 77 units compared to 2021. Especially, the number of units in the cement business went up from 8 units audited in 2021 to 22 units. Aside from the aspect of ethical management, the formats and data were optimized in 2022 as well, and quantified targets for ESG audits were introduced to facilitate internal sustainability management at TCC.

Key ESG Audit Items

Item	Corrective Measures
Air Pollution	Electrostatic precipitators added; air purifiers improved; maintenance conducted regularly
Water Pollution	Regular checks of water meters; pipeline redesigned; wastewater reduced; wastewater flow redirected
Noise Pollution	Regular items for inspection
Renewable Energy	Inspection mechanism redesigned; SOPs and personnel training reenacted

Reporting System & Whistleblower Protection Mechanism

TCC encourages individuals both within and outside the company to report any corruption, bribery, unethical behavior, or misconduct. TCC has established a "Reporting Mechanism for Violation of Code of Conduct" to facilitate such reporting. The company is committed to ensuring the confidentiality of the investigation process and providing protection for whistleblowers. Dedicated personnel are responsible for securely storing and accessing whistleblower information, and TCC is committed to preventing any retaliation, such as severance, dismissal, or salary reduction, against whistleblowers. The company also has emergency protection measures in place to address any potential risks to whistleblowers resulting from their reporting.

TCC has enhanced our reporting system by adding a channel for reporting senior management. In cases of misconduct involving senior management, whistleblowers have the option to report directly to the Audit Committee. Furthermore, TCC has established an independent reporting mailbox and hotline for individuals within and outside the Company to report any concerns.

Reporting Mailbox: **mp.buster@taiwancement.com**
Reporting Mailbox for matters involving ethical issues of senior management: **tccwhistle@taiwancement.com**

Table of Reports and Grievances in 2022

Reporting and Grievance Channel	Number of Cases
Reporting Mailbox	9
Audit Committee Mailbox	6
Employee Grievance Mailbox	15
Cases involving ethical management violation	12
Cases involving discrimination or harassment	1

The employee education and trainings on ethical management delivered in 2022 were

2,129.8 HOURS

Throughout the TCC operation sites in Taiwan, including all the subsidiaries thereof in Taiwan

All-round Ethical Management Education & Trainings

Directors

Directors regularly receive anti-corruption and anti-bribery training materials via mail or hardcopy and are required to sign the "Letter of Commitment for Compliance with Ethical Management, Anti-corruption, and Anti-Bribery." In 2022, all Directors received the necessary education and training and signed the Letter of Commitment.

Business Partners

Suppliers | TCC requires all suppliers to sign the Supplier Code of Conduct, in which items related to ethical management are included.

Contractors | The contractors to the cement business (e.g., outsourced personnel like security guards, cleaning services, etc.) were prioritized for introduction, and promotions to all the sites of cement business in Taiwan were completed in 2022.

Clients | Credit evaluation is conducted to cement clients, in which provisions of ethical management are included.

Active Employees

Active employees are required to participate in the anti-corruption and anti-bribery training courses at least once a year with records kept to fully understand related regulations and the possible risks and consequences of any violations.

*Active employees: senior managers, part-time and casual employees included.

New Recruits

Required to sign the Statement of Integrity and Ethical Conduct on the date of employment and receive promotion of the anti-corruption and anti-bribery policies within 90 days thereafter with records kept.

*New recruits: part-time and casual employees included.

Interns

Required to sign the Statement of Integrity and Ethical Conduct on the date of employment and receive promotion of the anti-corruption and anti-bribery policies within 90 days thereafter with records kept.

There were 1 environmental and 4 social penalties against TCC in 2022 with a total amount of NT$300,000 fined. There was no significant penalty with a penalty amount over NT$300,000, and relevant violations have been corrected. As for the case of concerted action made by the Fair Trade Commission on February 15, 2023, TCC has filed the administrative appeal. Please refer to the Material Information and the ESG – Ethical Management section of TCC Corporate Website for more information.

Table of Penalties in 2022

TYPE OF PENALTY

Violation of environmental laws/regulations
Number of Cases 1
Responses | The engineering improvement plan proposed on the system of EPA Taiwan

Violation of social laws/regulations
Number of Cases 4
Responses | Immediate improvement to the protection equipment on the scene of accident and investigation for hotspots of similar risks for correction and improvement; education, training, and test arranged to strengthen employees' awareness and discernment in workplace hazards, on-site daily inspection implemented, and work-related communication and adjustment enhanced

Major information security incidents in violation of information security, resulting in breach of customer information and penalty fines
Number of Cases 0

Violation of anti-competition or anti-trust
Number of Cases 0

TYPE OF INTERNAL REGULATIONS VIOLATION

Violation of ethical management
Number of Cases 1
Responses | The audit procedures reenacted, and system control/management and payment collection management reviewed, to avert reoccurrence.

Violation of sexual harassment or discrimination
Number of Cases 1
Responses | Increased the scope and frequency of educational training and strengthened inspection procedures.