



2021 ESG INSIGHT REPORT

TOTAL CLIMATE COMMITMENT
TOTAL CARE COMMITMENT

ENVIRONMENTAL



Three Core Businesses

Based on TCC's three core businesses of "low-carbon cement, resource recycling, and green energy," Environment, Energy, and Ecology serve as the three axes for its sustainable development. Using the core heat during the cement-making process, TCC helps to dispose industrial and household wastes as it is our social responsibility to provide a circular economy across industries. Raw materials/fuels cement used are replaced by recycled resources to reduce carbon footprints and develop green building materials. TCC's commitment to new energy enterprises, with the creation (renewable energy), transmission (power cells), and storage (energy storage systems) combined is a part of the enterprise's strategy to transform and move toward the goal of net zero emissions by 2050.

Low-Carbon Cement

ECO-FRIENDLY CEMENT

The first Carbon Footprint Reduction Label of cement Taiwan EPA Gold-rated Green Mark

RMC TRACEABILITY

Six quality assurances & third-party certification by SGS and TCRI

ULTRA-HIGH PERFORMANCE CONCRETE (UHPC)

Extend life span of buildings to 100-120 years. Product application - Energy storage cabinet:

- High mechanically compressive strength
- Fire and explosion resistance
- 40% reduction of carbon emission compared to metal shells of same size

Resource Recycling

CITY WASTE PURIFIER

Resolving the issue of wastes from ten industries including power generation and semiconductors

AI-DRIVEN RESOURCE RECYCLING

Three-step intelligent system of circular economy

FOOD WASTE

Food Waste Reuse Center established in 2021 in TCC DAKA in Hualien, Taiwan



Green Energy

RENEWABLE ENERGY

Combo wind and solar power plant, fishery and solar symbiosis, and geothermal and ocean thermal conversion

SMART ENERGY STORAGE

Giga storage / Industrial Solutions

HIGH POWER CELLS

4.5Ah high capacity 100W high-rate discharge

CHARGING SERVICE

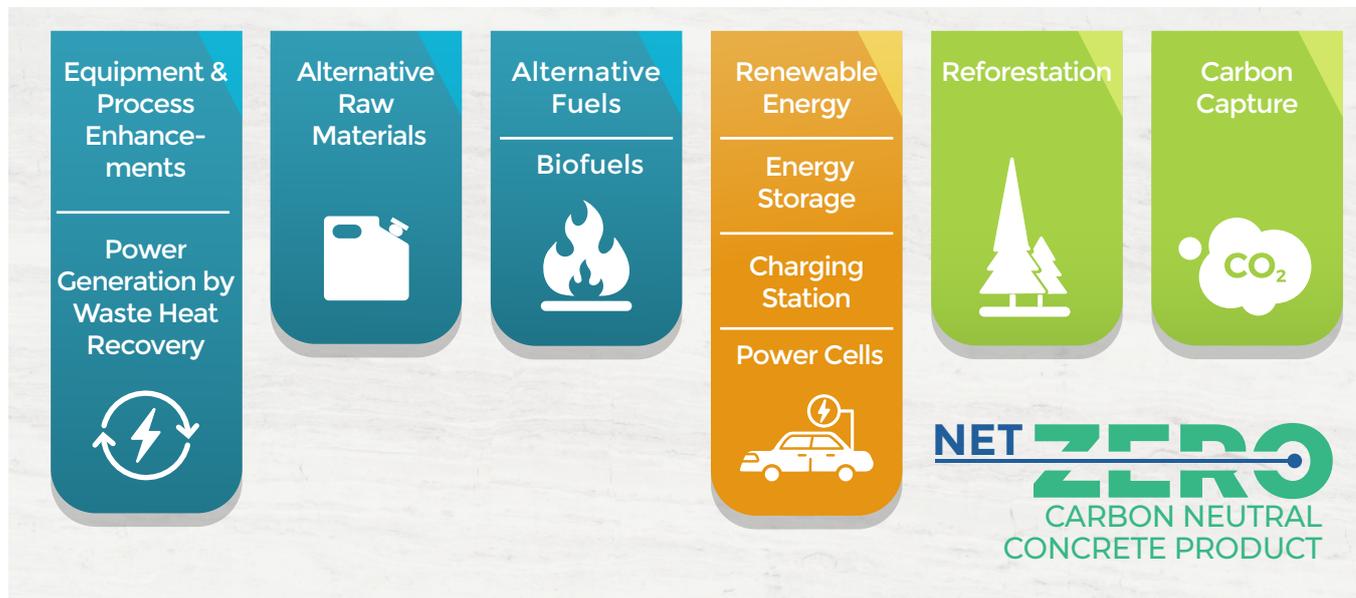
Combined green energy, battery, energy storage, and EV fast charging services



ENVIRONMENT
ENERGY
ECOLOGY

Seven Strategies Based on SBT

In order to advance toward the net zero emissions goal by 2050 from multiple directions, TCC uses seven strategies to reduce carbon emissions:



Sustainability Dialogues with Stakeholders

Pursuant to the AA1000 Stakeholder Engagement Standard (SES), TCC employs the five principles, i.e. Responsibility, Influence, Tension, Diverse Perspectives, and Dependency in the identification and the ordering of stakeholders. In consideration of the international trends of sustainable development, ESG assessment principles (MSCI, DJSI, and CDP), ESG standards (GRI Standards and SASB Standards), industry characteristics, and benchmark corporate practices, TCC compiles a list of sustainability issues covering those of corporate governance, economy, environment, and society. Identified ESG material issues include:

Governance Topics

- Ethical management
- Operational performances
- Risk control
- Legal compliance
- Client relationship management
- Innovation & intelligent optimization
- Sustainable products
- Sustainable supplier management
- Corporate governance

Environmental Topics

- Climate actions and net zero emissions
- Resource co-processing
- Biodiversity
- Green energy and energy storage
- Raw materials usage and management
- Pollution control and management
- Water management
- Green transportation

Social Topics

- Human rights protection
- Workplace diversity & equal opportunity
- Local inclusion
- Workplace health and safety
- Social participation
- Employee care
- Talent cultivation and development
- Labor-management communication

**Regular and consistent engagements with all stakeholders on ESG topics
Including press conferences and bi-monthly press releases**

2021 Stakeholder Engagement

TCC continues to regularly and consistently communicate with stakeholders to deepen the society's knowledge on TCC's performances in corporate management and sustainable development:



For detailed information regarding stakeholder engagement, please visit: www.taiwancement.com/en/esgStakeholder.html

Government Agencies	Employees	Media	Industry Associations/ Industrial & Academic Organizations	Shareholders/ Investors
54	4,076	103,061	52	19
Clients	Environmental Groups/NGOs	Sustainability Associations	Suppliers/ Contractors	Local Communities
102	1,560	56	1,236	80,013

Key Environmental Goals and Achievement Rates

Air and Carbon Emissions

		PERFORMANCE		TARGETS		TCC Group Target 2050
Taiwan	Unit	2020	2021	2025	2030	
Carbon Emissions Intensity	tCO ₂ /metric ton of cementitious materials	-4.2%	-5.1%	-11%(SBT)	-31%	Carbon Neutral Concrete Products
Mainland China						
Carbon Emissions Intensity	tCO ₂ / metric ton of clinker	-3%	-3%	-11%	-20%	
Taiwan						
NOx	%	-16%	-26%	-50%	-70%	
SOx	%	-5%	-3%	-30%	BACT ¹	BACT ¹
TSP	%	-43%	-56%	-50%	BACT ¹	
Mainland China						
NOx	%	-45%	-47%	-50%	-70%	
SOx	%	-53%	-66%	-60%	-70%	BACT ¹
TSP	%	-57%	-61%	-60%	BACT ¹	

1. BACT (Best Available Control Technology) Minimum.

Waste

		ACHIEVEMENT	TARGETS			
Taiwan	Unit	2021	2021	2025	2030	2050
Waste Recycling	metric tons	1.14 million		1.25 million	1.57 million	2.5 million
Biomass % of Total Fuel	%	Under Assessment		10%		
Mainland China						
Waste Recycling	metric tons	8.07 million		10 million	12.5 million	15 million

Renewable Energy & Carbon Capture

		ACHIEVEMENT	TARGETS			
Taiwan	Unit	2021	2021	2025	2030	2050
Renewable Energy	MW	Over 190 by end of 2023		Manage 570MW	Manage 700MW	Manage 1GW
Carbon Capture	metric tons /year	Planning for the scale up verification of the carbon capture technology			100,000	1.6 million

Water Management

	Unit	ACHIEVEMENT		TARGETS	
		2021	2025	2025	2050
Taiwan					
Water Usage Intensity (Compared to 2016)	m ³ /Metric Ton of Cementitious Materials	-38%	-45%	-45%	-50%
Mainland China					
Water Usage Intensity (Compared to 2016)	m ³ /Metric Ton of Cementitious Materials	-9%	-25%	-25%	-30%

Energy Storage & Energy Transmission

	Unit	TARGETS
		2024
Energy Storage		
Global Energy Storage Capacity	CWh	2.9
Energy Transmission		
Advanced Lithium Battery Production Capacity	CWh	3.3



Environmental Metrics

Carbon Emissions	Unit	2017 ³	2018 ³	2019 ³	2020	2021
Taiwan Total¹		4,405,123	4,501,739	4,519,991	4,647,231	5,048,912
Scope 1		4,146,431	4,230,680	4,268,620	4,413,285	4,798,945
Scope 2		249,819	256,018	229,346	210,612	220,392
Scope 3	Metric ton CO ₂ e	8,873	15,041	22,025	23,334	29,575
Mainland China Total		-	-	32,676,037	32,512,981	26,962,075
Scope 1		-	-	31,362,071	31,255,099	25,867,678
Scope 2		-	-	1,313,966	1,257,882	1,094,397

GHG Intensity²

Taiwan	tCO ₂ /metric ton of cementitious materials	0.838	0.820	0.814	0.813	0.806
Mainland China	tCO ₂ /metric ton of clinker	0.880	0.875	0.871	0.859	0.852

Energy Management

Taiwan Total Energy Consumption		18,836,989	17,497,691	17,824,559	17,889,547	19,329,594
Coal		17,012,323	15,689,903	16,157,228	16,300,593	17,632,953
Diesel		79,854	69,059	56,612	38,461	50,409
Gasoline	GJ	-	3,918	5,159	5,877	5,097
Natural Gas		-	-	-	251	139
Purchased Electricity		1,744,812	1,734,811	1,605,560	1,544,365	1,640,996
Self-consumption Renewable Energy		-	92.79	166.59	329.97	982.224
Electricity from Waste Heat Recovery	MW	-	74,094	100,335	119,024	138,257
Purchased/Used Electricity		-	85%	79%	71%	69%
Waste Heat Recovery/Used Electricity	%	-	15%	21%	29%	31%
Mainland China Total Energy Consumption		-	82,605,583	77,324,991	135,007,136	121,363,307
Coal		-	76,182,142	72,990,784	126,508,867	113,150,251
Diesel	GJ	-	92,821	76,575	21,648	34,054
Gasoline		-	525	525	-	-
Purchased Electricity		-	6,330,096	4,257,108	8,476,621	8,179,002
Electricity from Waste Heat Recovery	MW	-	1,317,532	1,292,718	1,283,372	1,034,320
Waste Heat Recovery/Used Electricity	%	-	39	38	39	37

1. Scope includes TCC's operation sites in Taiwan, including cement plants, RMC plants and headquarters.

2. Taiwan carbon emissions include cement production, while Mainland China covers only clinker production based on regulatory differences.

3. Mainland China's 2017-2019 figures only include three plants: Yingde, Guigang and Anshun. 2020-2021 figures include all plants.

Toxic Emissions	Unit	2017	2018	2019	2020	2021
Taiwan						
NOx		7,035	6,744	6,388	6,164	6,473
SOx		82	85	79	106	113
TSP		587	643	305	249	214
Direct Mercury Emissions		-	-	0.22172	0.27546	0.06969
VOC	Metric Tons	0.00656	0.00636	0.00616	0.00457	0.00422
Mainland China						
NOx		-	-	14,973	12,089	9,908
SOx		-	-	1,632	1,293	997
TSP		-	-	1,051	827	569
Direct Mercury Emissions	mg/m ³	-	-	<0.0001	<0.0001	0.005

Toxic Emissions Intensity¹

Taiwan						
NOx ¹		1,437	1,293	1,219	1,146	1,105
SOx ¹		16	16	15	19	19
TSP ¹		80	74	58	46	36
Mainland China						
NOx ¹		586	523	397	314	313
SOx ¹		75	56	44	33	32
TSP ¹		45	37	27	19	18

Water Usage Intensity

Taiwan	m ³ /Metric Ton of Cementitious Materials	0.47	0.43	0.38	0.36	0.30
Mainland China		0.34	0.34	0.33	0.33	0.32

Alternative Fuels & Materials

Taiwan						
Alternative Fuels Used		8	8	8	10	11
Alternative Materials Used		18	19	19	23	22
Clinker Content in Cement	%	95	95	94	93	93
Mainland China						
Alternative Fuels Used		1	3	4	5	4.8
Alternative Materials Used		8	10	17	20	20
Clinker Content in Cement		79	81	81	81	79.6

Waste Co-processing

Mainland China – General & Hazardous Waste	Tons	-	1,304,926	83,686	7,955,442	8,239,132
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Environmental Investments

Taiwan	Million NT \$	52	64	180	210	212
Mainland China	Million CN ¥	-	-	-	384	557

1. In 2021, the emission intensity of NOx, SOx and TSP per ton of clinker decreased by 26%, 3% and 56% compared to 2016.

Environmental Certifications

Certification	Cement Plants	RMC Plants	Operations
ISO 14001 - Environmental Management Systems	☑	☑	☑
ISO 14064 - Greenhouse Gases	☑	In Progress	☑
ISO 14067 - Carbon Footprint of Products	☑	In Progress	
ISO 50001 - Energy Management System	☑		
ISO 46001 - Water Efficiency	☑		
BS8001 - Circular Economy	Hoping Plant & Suao Plant		

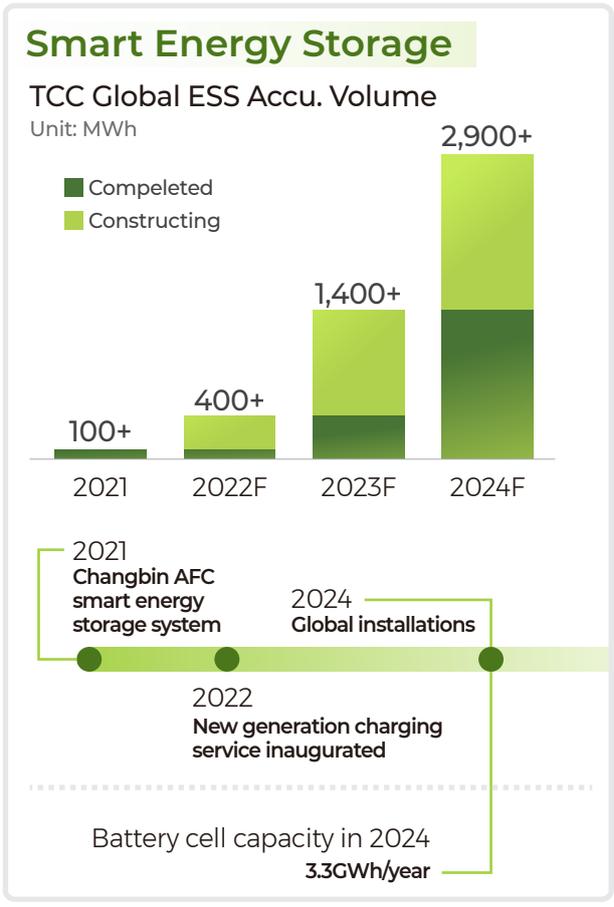
Member of EP100 since August 2022

TCFD | TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES
CLIMATE GROUP
 EP100 Initiative

NHQA – New Horizons Ahead

Combined with the key advanced lithium battery product of TCC subsidiary, E-One Moli Energy, the Automatic Frequency Control (AFC) Energy Storage System in Taiwan came online in 2021. TCC acquired 69% stake of Engie EPS, an Italy-based, France-listed company, and renamed into NHQA (New Horizons Ahead) for strengthening TCC's design and manufacturing capabilities of Energy Management System (EMS) and Power Conditioning System (PCS). Furthermore, TCC invested in Phihong Technology, a power supply manufacturer, at the end of 2021.

TCC has become the sole energy enterprise with the R&D and production capabilities for green energy, battery, energy storage, and EV fast charging infrastructures.



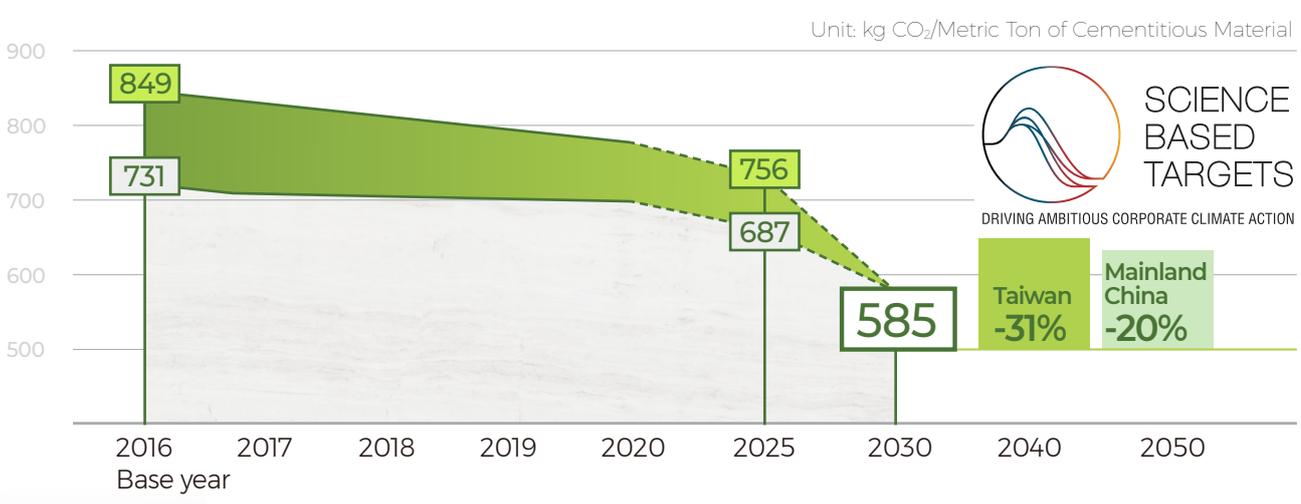
Battery Cells (Energy Transmission)

E-One Moli Energy Corp. launched a spec leading cell with highest energy in global high power cell market: 4.5Ah high capacity 100W high-rate discharge.

Science-Based Carbon Reduction Initiative

TCC kicked off its Science Based Targets (SBTs) initiative in 2019 and became the first cement company in the Greater China region with its science-based targets validated in June 2020. In addition to the SBTs, as a founding member to Taiwan Alliance for Net Zero Emission (TANZE), TCC responded to the Net Zero X 2030/2050 initiative by committing itself to the targets of a net zero emissions in Operation Headquarters and offices by 2030, and in production sites by 2050.

Carbon Neutrality of Concrete Products by 2050



Internal Carbon Pricing

Management Approaches

- In 2018, TCC began including a carbon emissions KPI of 0.87t CO₂/t clinker
- 100% production equipment adopts carbon pricing to evaluate emission reduction performance
- In 2021, TCC formulated performance appraisal regulations on carbon emission reduction according to the SBT commitment and actual conditions at each plant
- Carbon prices are stipulated with reference to the laws or regulations internationally, in Taiwan, and areas of operation
- In 2022, the internal carbon trade platform was planned on the basis of the carbon markets where the plants are; the carbon credits for each plant is allocated based on the respective production capacity, with which the carbon reduction action is taken

Environmental KPI: prime consideration in determining performance and bonuses
100% of cement plants achieved the target in 2021

Targets

	2022	2025	2030
Taiwan	-3% Emission intensity (Mt CO ₂ /Mt cementitious materials) compared to 2021 Level	-11% Carbon emission intensity At cement plants	-31% Carbon emission intensity At cement plants
Mainland China			-20% Carbon emission intensity At cement plants

Waste Management

Cement Plants

The wastes at TCC plants include the domestic wastes generated from employee activities, waste lubricating oils from maintenance, waste refractory bricks, etc., which are all recycled and turned into harmless reusable resources through high temperature in the cement kilns.

Zero Waste Generated

RMC Plants

The main source of wastes generated from Operation Headquarters is domestic waste. Management regulations are in place for the waste sorting and recycling. Regular clearing services are commissioned by qualified third-party recyclers who are required to present related evidence for tracking purposes.

No Hazardous Wastes

Operation Headquarters

The main source of wastes generated from Operation Headquarters is domestic waste. Management regulations are in place for the waste sorting and recycling. Regular clearing services are commissioned by qualified third-party recyclers who are required to present related evidence for tracking purposes.

Mainly Domestic Waste

2021 Treatment of Wastes in Taiwan

Disposal Method	Category	Cement Plant	RMC Plants	Operation Headquarters
Resource Recycling	Domestic Waste (Category H/D)	-	145.78	27.31
	Industrial Waste (Inorganic sludge)	-	918.65	-
Sold to Recyclers for Reuse		1,532.54	259.27	-
Total		1,532.54	1,323.70	27.31

2021 Water Conservation Projects

	Unit	Total Water Saved	Cost Saved
Recycling of water in shaft tunnels		6,989	78,696
D01 Effluent Recycling Project	1,000 cubic meters & NT\$	70,280	70,280
Works of new pipeline addition and old pipeline repair for cooling water reclamation		157,332	157,332

Green Logistics – Fleet Management

Local procurement; shorter transportation distance; loaded return vehicles/ships; reduce diesel usage and carbon emissions

Environmental Cement Vessels

- Better than IMO standards
- 2 new cement vessels introduced, 20% reduction of carbon emission/trip
- 20% reduction of average fuel consumption per day
- 20% reduction of NOx
- Expect 50% reduction of GHG emissions by 2050

Hoping Vertical Shaft

- 23,000 metric tons reduction of carbon emissions per year by vertical shaft for the limestone transportation in the Hoping Plant

Big Data Management

- Smart Watercraft Management System
- Smart Sailing Ballast Management System
- Ballast water is UV-treated before discharge to avoid ecological impacts from alien species

EV100 Target - Electrification of Company Cars and RMC Trucks

The major operation sites such as Operation Headquarters and TCC DAKA are installed with EV charging stations.

- Invested NT\$80 million
- 100% use of fifth-phase environmental vehicles (297 vehicles)
- Electric RMC trucks to be introduced in response to the EV100 target

Alternative Maritime Power System

- 265.35 metric tons reduction of fuel
- 316.81 metric tons reduction of carbon emissions
- 95.3%+ reduction of SOx (95.3%), NOx (98.6%), and TSP (99.1%) emissions
- AMP in the port of Hoping was completed and operational in November 2020. AMP in the Taichung and Kaohsiung Distribution Branch are expected to be completed in 2022. AMP construction in TAHO AFRICA is expected for May 2022

Incidents

Two incidents of environmental, social, or economic penalties occurred to TCC in 2021 with a total amount of NT\$18,000 fined and without any significant penalty*. Also, relevant nonconformities have been corrected.

Type	Violation Description	Corrective Measures
Environmental	Violation of Paragraph 1, Article 36 of the Waste Disposal Act by the RMC plant.	<ul style="list-style-type: none"> • To capture reporting details and avoid reporting overdue or error, Waste Recycling Operation Manual has been amended for the alignment of reporting and review processes. • The dedicated personnel of health and safety to log in to check and review the reporting.
	Violation of Paragraph 1, Article 22 of Water Pollution Control Act for failure in submitting documentation pertaining to (wastewater) sewage treatment from the Gushan RMC Plant.	<ul style="list-style-type: none"> • A fine paid and the wastewater treatment permit written off at the recommendation by the Environmental Protection Bureau in response to cease its production.

* An incident of significant penalty is defined as an incident with a penalty amount of 10,000 USD or above on TCC

SOCIAL



TCC

TCC puts people first and believes in the value of being a people-oriented enterprise, as employees are the cornerstone of corporate sustainable development. 100% of employees are covered by collective bargaining agreements. Meanwhile, it proactively adjusts the provisions in the agreements in line with the relevant laws and regulations that contribute to the improvement of labor terms and thereby effectively protect the employees' rights. TCC complies with relevant regulations and holds quarterly labor-management meetings, strengthening employee identification towards the company.

Social Metrics

	Unit	2018	2019	2020	2021
Diversified Workforce					
Taiwan					
Share of Employees with Disabilities		1.50	1.10	1.50	1.70
Share of Employees with Indigenous Background		4.70	5.20	6.10	6.40
Gender Equality - Female Employees		16.3	17.2	17.5	18.9
All Management Positions		22.75	23.22	23.49	29.12
Junior Management Positions	%	23.50	23.02	23.35	26.88
Top Management Positions		15.38	25.00	25.00	20.00
Management in Revenue-Generating Functions		4.14	4.52	3.83	4.37
Women in STEM-Related Positions		33.33	33.87	34.41	35.20
Mainland China					
Gender Equality - Female Employees		-	-	23.35	23.54
Employment					
Taiwan					
Turnover Rate		11.03	9.28	6.48	8.20
Open Positions Filled by Internal Candidates	%	14.40	18.40	18.85	22.90
Employee Engagement Rate		-	93.10	94.30	94.30
Mainland China					
Employee Engagement Rate		-	-	97.50	97.50
Training & Education					
Taiwan					
Average Hours of Trainings	Hours	130.7	116.0	81.0	70.9
Amount Spent on Training	NT\$ Mn	25.0	28.0	20.6	23.4
Mainland China					
Total Training Hours	Hours	-	42,967	67,844	106,812.5
Health & Safety					
Taiwan					
Lost Time Incident Rate (LTIR)		0.22	0.18	0.14	0.11
Total Recordable Incident Rate (TRIR)	%	0.25	0.20	0.16	0.11
Mainland China					
Lost Time Incident Rate (LTIR)		0.39	0.28	0.15	0.11
Total Recordable Incident Rate (TRIR)		0.40	0.30	0.16	0.12

Human Rights

To foster a human-centered, healthy workplace environment, in line with international conventions like United Nations Global Compact, UN Universal Declaration of Human Rights, and ILO Declaration of Fundamental Principles and Rights at Work and the local labor regulations in the areas where TCC operates around the world, TCC promulgated human rights policies to safeguard the legal rights of employees. All paid personnel are treated equally with respect.



Please visit our corporate website for details of Human Rights Policy: www.taiwancement.com/en/aboutHumanRightsPolicy.html

Joint Implementation of Sustainable Development Policies

To further encourage suppliers to jointly implement sustainable development policies like environmental protection, human rights protection, and resource circulation, TCC's Supplier Code of Conduct has been amended with human rights requirements incorporated. All new partner suppliers are required to sign the document. The Critical Tier-1 Suppliers are obliged to sign consecutively to ensure TCC values have been implemented throughout the supply chain.

Expanding the ESG spirit across its corporate partners
Expected 100% signing rate by 2022

Employee Remuneration

Salary and Bonus

100% of Employees in TCC Group Enjoy Quarterly and Performance Bonuses. TCC's governance and company management objectives do not only focus on operational results but also include top management's visions, department goals and personal KPIs. **They are also linked with sustainability goals and social responsibility. Everyone in the company must contribute positively to the environment, protect nature and benefit society with every step forward.** To achieve this goal, the company specifically designed the salary and bonus program to reward employees.

Performance Bonuses

KPIs include work objectives and behavior. KPIs also include items such as risk management, sustainability management, and information security control and other items aligned with company goals. The KPI assessment results are completely linked with corporate governance, overall operational performances, and sustainability development (such as work safety, environmental protection, carbon emissions reduction, quality, information security, anti-corruption, anti-bribery, etc.) The bonus amount will be determined by achieving the above items.

Quarterly Bonuses

TCC started the quarterly bonus program in 2018 to share the fruits of labor with those outperforming employees. Quarterly bonuses are based on quarterly EPS targets and other key performance indicators (such as work safety, environmental protection, carbon emissions reduction, quality, information security, anti-corruption, anti-bribery, etc.) To achieve the goal of carbon neutrality by 2050, all plants set their carbon intensity targets in 2021, with the performance of which counted in the quarterly bonuses for an ongoing incorporation of social responsibility in corporate operation for a sustainable business.

Employee Stock Ownership Plans

100% Employee Coverage

97.05% Participation Rate

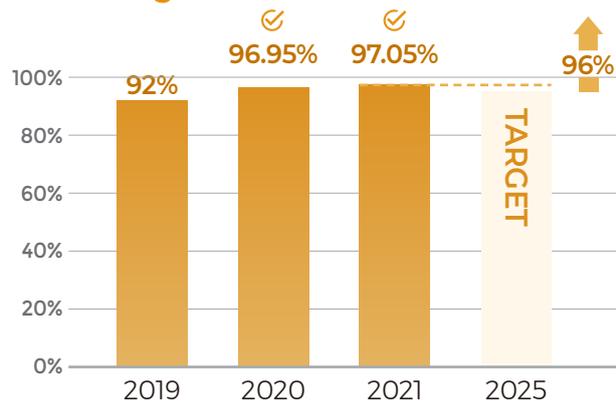
- 100% of the employees are eligible for ESOP

In 2019, TCC initiated the ESOP program. All the employees at TCC and affiliated enterprises are eligible. TCC and individual employee will contribute to the contribution fund deposited in the exclusive trust account by a **1:1 ratio** on a monthly basis. **The employees eligible for retirement at the age of 60 can even contribute further.** So as to retain talent and assist employees in accumulating wealth, planning their life after retirement.

- 36.6% of employees with outstanding performance are entitled to Treasury Shares Program

The program is to encourage the long-term development of management-level employees. Employees in Taiwan and overseas subsidiaries are all eligible to participate in this program. Also, performance indicators to appraisal are tied to the sustainable development goals. Examples of the indicators to appraisal include the performance on the strategic development execution of carbon capture, microalgae cultivation, and renewable energy development.

ESOP Targets



Non-salary Benefits

The Employee Welfare Committee has been established at TCC to provide various benefits and subsidies. Also, through regularly-held meetings, it is able to timely acquire opinions and feedbacks from employees and set plans for employee rights protection.

Benefits

Physical and Mental

- Travel subsidies
- Further education subsidies
- Employee Assistance Program
- Recreation club subsidies

Medical

- Medical subsidies (dental and hospitalization)
- Health checkup subsidy
- Childbirth subsidy

Family Support

- Maternity allowance
- Scholarship for employees' children
- Marriage gifts
- Retirement benefits
- Bereavement payments

All employees are covered by applicable benefits

Employee Benefit Claims

Unit: Employees

	2017	2018	2019	2020	2021
Taiwan	3,049	3,201	3,660	4,130	4,122
Mainland China	18,973	21,163	24,693	25,074	25,988

Freedom of Association

Labor union has been established across all TCC plants in Taiwan and collective bargaining agreements were signed.

100% Coverage Rate
Collective Bargaining Agreement

97.09%
Labor Union Participation

Employee Diversity

TCC has been committed to fostering a willingly supportive, friendly, and healthy working environment since its establishment, taking care of its employees and their families to the best of its ability. All employees, regardless of gender and position, are entitled to equal welfare measures so as to uphold a healthy environment of equal rights and realize gender equality.

Taiwan Gender Diversity Performance & Targets

	Unit	2021 Achievement	2025 Target	
Gender Equality - Female Employees		18.9	18	☑
All Management Positions		26.21	25	☑
Junior Management Positions	%	26.88	25	☑
Top Management Positions		20.00	25	
Management in Revenue-Generating Functions		4.37	4.5	
Women in STEM-Related Positions		35.20	35	☑

2021 Diversity Achievements

+11.5%
Female Managers

+13%
Employees with Disabilities

+5%
Indigenous Employees

Employee Health & Safety

TCC has stipulated the Occupational Safety and Health Management System. The Labor Safety and Health Office is obliged to call an Occupational Safety and Health Committee meeting quarterly to track results of work execution, review current status, and engage ongoing efforts for improvement.

100% of operation sites obtained ISO 45001 Certification

Occupational Safety and Health Committee

	Operational Headquarters	Cement Plants	RMC Plants
Chairperson	1	2	3
Executives & Professionals	5	21	28
Labor Representatives	3	15	17
% of Labor Representatives	33%	39%	35%

- In 2021 TCC launched the Occupational Safety Monthly report mechanism
- The Occupational Safety and Health Committee convenes quarterly and monitors the results together with labor representatives
- Joined Taiwan Cement Manufacturers' Association and drafted "Formulating Safety Partnership Implementation Plan" with Occupational Safety and Health Administration, Ministry of Labor to elevate the safety awareness of the workers in the cement industry

Health Promotion Programs in Taiwan

Hoping Plant

- Health lectures
- Education and trainings for operations
- Education and trainings for work overload or musculoskeletal injuries
- Community medical station

Suao Plant

- In-service education for occupational safety and health
- Monthly on-site health services provided by contracted medical staff
- Personnel health checkup by commissioned medical institution

Operation Headquarters

- Monthly provision of on-site services
- Influenza vaccination for all employees

Health and Safety Education and Training

197 individuals received education and trainings with training hours up to **1,385 hours in total.**
(environmental safety and health)
No occupational disease was reported in 2021



Talent Cultivation and Training

Talent is the keystone for a sustainable corporate operation. Facing the issue of talent shortage, we launched the talent recruitment program in various schools.

- Smooth means to job promotion
- Plans for interprofessional inclusion
- Training of three key businesses
- Cross-departmental training and internship
- English courses
- Expatriation opportunities

Three programs for cultivation and development

CULTIVATION PROGRAM

Sustainable Talent Cultivation Program

Form of Education/Training

- Press conference
- Quarterly Town Hall Meetings
- Organization of internship lectures or workshops

Talent Development (Training) Metrics

- 1,833 visits to courses of ESG series 2.0 across the Group in 2021
- Recognitions from HR Asia 2021 Best Companies To Work For In Asia Award and TCSA People Development Award

Digital Intelligence Development Program

Form of Education/Training

- Available courses for Zoom/Teams and VPN hands-on practice and authentication
- Organization of seminars, study groups, and workshops

Talent Development (Training) Metrics

- 241 hours of smart technologies education and trainings in 2021

Risk Management Training Module

Form of Education/Training

- Lectures organized
- Prevention exercises and cybersecurity tests conducted on a regular basis

Talent Development (Training) Metrics

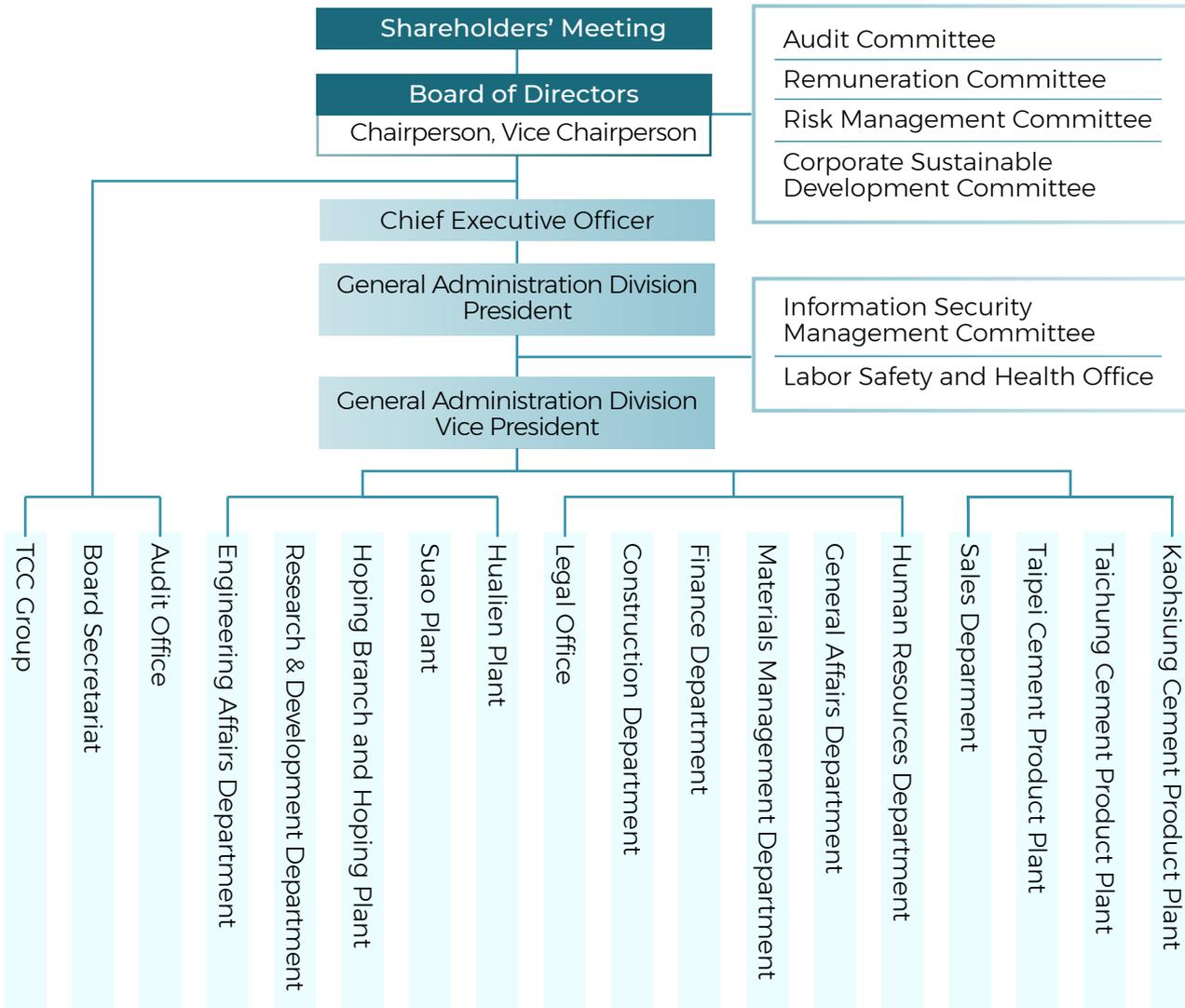
- 1,067 hours of information security trainings in 2021
- 2,674 hours of labor safety and environmental risk prevention trainings

GOVERNANCE



Organizational Framework

The TCC Board of Directors oversees four functional committees while General Administration Division supervises the Information Security Management Committee and the Occupational Safety and Health Management Office.



Note 1: The Taipei, Taichung, and Kaohsiung RMC Plants, including 20 branches and 3 distribution stations

Note 2: The Hualien Plant includes a RMC plant

Note 3: The Corporate Sustainable Development Committee has been upgraded as a functional committee since July 2021

Note 4: The establishment of the Nomination Committee was announced on June 21, 2022.

Note 5: Office of Responsibility and Sustainability was added on August 22, 2022.

Taiwan Cement Corporation (TCC) stands for two sustainability commitments:

Total Climate Commitment & Total Care Commitment for the mutual benefit and harmony with Earth and life.



Accounting for a Sustainable Future



SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION



SUSTAINABILITY DISCLOSURE DATABASE



TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES



Board of Directors

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 with a reduction of 21%, among whom 12 seats are replete with practical cement-related experiences.

96.19% board attendance in 2021
or **100%** by factoring in the presence by proxy

Title	Name	Tenure on the Board (Year)	Attendance	CORE DIVERSITY ITEMS			COMMITTEES & ATTENDANCE			
				Gender	Age 31-50	≥50	AC	RC	RMC	CSDC
Chairperson	An-ping (Nelson) Chang	28	100%	M		☑				100% C
	Jong-Peir Li*	4	100%	M		☑				100%
Director	Kang-Lung (Jason) Chang	10	100%	M		☑				
	Kenneth C.M. Lo	10	100%	M		☑				
	Por-Yuan Wang	13	88%	M		☑				
	Kung-Yi Koo	5	100%	M	☑					
	Chi-Te Chen	37	75%	M		☑				
	Chi-Chia Hsieh	19	88%	M		☑				
	Chien Wen	4	100%	M		☑				
	Chun-Ying Liu	4	100%	F	☑					
Independent Director	Yu-Cheng Chiao	10	88%	M		☑	88%	100% C		
	Victor Wang	9	100%	M		☑	100% C	100%	100%	100%
	Lynette Ling-Tai Chou	4	100%	F		☑	100%	100%	100%	
	Mei-Hwa Lin	Newly Elected	100%	F		☑	88%	100%		
	Shiou-Ling Lin	Newly Elected	100%	F		☑	88%	75%	100% C	

C Convener

* Resigned on August 12, 2022 and succeeded by Eric Chen Sun Te.

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.

Succession Plan for Top Management

TCC emphasizes improvement of the Board of Directors' functions. Diversity requirements in line with the operation, business model, and developmental needs include the following two aspects when creating a candidate pool of directors:

Basic Criteria and Values

Diversity on 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 techniques and industrial experiences of the potential candidates of Directors.



For detailed information regarding Charters of Committees, please visit: www.taiwanement.com/en/ir_company-regulations.html

Functional Committees

Committee	Audit	Remuneration	Risk Management	Corporate Sustainable Development
Responsibilities	 <p>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</p>	 <p>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</p>	 <p>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</p>	 <p>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 the environmental conservation, and exercise its social responsibilities in the protection of the interests of the Company as well as its employees, shareholders and stakeholders</p>
Attendance presence in person (%)	90	90	100	100
Attendance presence by proxy included (%)	100	100	100	100

Note : The tenures of the new Audit Committee started from July 5, 2021, while the remainder from July 15, 2021

Ethical Management

All-round Ethical Management & Trainings

<h4>New Recruits*</h4> <ul style="list-style-type: none"> • Sign on the “Code of Integrity and Ethics Statement” • One-on-one policy elaboration • 100% signing rate of all new recruits was achieved in 2021 	<h4>Directors</h4> <ul style="list-style-type: none"> • Receive the training course materials at least once a year • Sign on the “Letter of Commitment for Compliance with Ethical Management, Anti-corruption, and Anti-Bribery” • ALL Directors have completed trainings in 2021 	<h4>Suppliers</h4> <ul style="list-style-type: none"> • Sign on the Supplier Code of Conduct, in which items related to ethical management are included
<h4>Active Employees*</h4> <ul style="list-style-type: none"> • Participate in the training courses regularly • 134 hours of anti-corruption education and trainings took place in 2021 	<h4>Contractors</h4> <ul style="list-style-type: none"> • Courses are completed at the end of June 2022 • Trainings for outsourcers (e.g., the security guards) have been completed at the end of July 2022 	

* Part-time and casual employees included

Anti-bribery Management

An anti-bribery management system & whistleblower protection system were established. In 2021, TCC became the first domestic cement company to obtain ISO 37001 Anti-bribery Management Systems certification.

Ethical management trainings cover **100% employees**
Total of 134 hours of ethical and moral standards training in 2021

The Whistleblower Channel

- TCC official website and internal portal both have an employee suggestion inbox: TCCsuggestion@taiwancement.com
- Confidential and secure whistleblower channel: employees and external stakeholders can provide suggestions or notify of any wrongdoing. If the report is anonymous, complete relevant information and documents must be provided: tccwhistle@taiwancement.com
- The Reporting Mechanism for Violation of Code of Conduct was amended in 2020 to clearly define the scope of application while introducing mechanisms like confidentiality in the investigation process and whistleblower protection. In 2021, matters concerning the confidentiality in the investigation process and the whistleblower protection mechanism were detailed. The Audit Committee was listed as the additional reporting channel. In any misconduct involving the senior management, the whistleblower may choose to report to the Audit Committee directly

Cases Reported, 2018-2021

	2018	2019	2020	2021
Whistleblower Inbox	4	0	10	4
Audit Committee Inbox	N/A	1	1	7
Employee Grievances Inbox	3	7	12	12
Cases Reported Regarding Violations of Ethical Management Policies	4	2	13	7

Supply Chain Management

TCC Group aims to maintain supply chain consistency on product quality, cost, delivery time, service quality, environmental safety and sanitation, and manufacturing. To achieve this, the Group established Supplier Management Policy, Supplier Code of Conduct, and Green Procurement Policy to jointly protect the environment, human rights, and sustainable resources for businesses with the suppliers. A joint effort to promote corporate social responsibility and a sustainable supply chain.

	Progress	Target	Status
Locally-procured non-raw materials	93.48%	95%	
New suppliers that signed the Supplier Code of Conduct	100%	100%	☑
Existing critical suppliers that signed the Supplier Code of Conduct	86.46%	80%	☑
Contractors that signed the Letter of Undertaking for Health, Safety, and Environment (HSE)	100%	100%	☑
Inspections conducted to Critical Tier-1 Supplier (Document review and on-site inspection)	100%	100%	☑
On-site inspections conducted to the Critical Tier 1 Suppliers in three years	65.1%	80%	
GHG inventory completed for the Critical Tier 1 Suppliers by 2023	61.5%	100%	

2021 Procurement Portal

- 100% of high risk suppliers blocked.
- AI Selection of Suppliers: estimated 13,703 work hours (approximately 1,713 work days) saved annually. On average, 63 minutes saved for each case.
- Estimated 1,957,500 pieces of paper saved annually, equivalent to 14.094 metric tons of carbon emissions reduction.

Sustainable Buildings

TCC cares deeply about environmental balance and sustainable development. Therefore, the Company has encouraged RMC clients to apply for green building certifications to promote the symbiosis of buildings and the environment to achieve sustainability.



Results and Targets

Diamond-level Green Building Certification
Operation Headquarters

LEED Gold Level Certification
TCC Hangzhou Building

Concrete Used on Green Buildings (Revenue)

				TARGETS (% of overall revenue)	
2018	2019	2020	2021	2025	2026
3.2	4.4	7	11.2	5 or more	6 or more

Information Security

Apart from ISO 9001 Quality Management System and ISO 37001 Anti-bribery Management Systems, in January 2021, TCC has been certified with the ISO 27001 Information Security Management System and passed external recertification audits with zero non-conformities in December 2021. Also, in conformity with the standard, it carries out operation of PDCA Cycle. In 2022, a Chief Information Security Officer (CISO) was appointed. The Information Security Management Committee has been operational, and a director well experienced in information security was appointed to oversee it.

Sensitive Data Protection

Completed HR/FIN/EMT

1. Confidential data security zone established
2. Inventory of existing trademarks and patents



Education & Training

100% Completed

1. Education and trainings regarding information security had 111 visits (1,067 hours)
2. E-learning programs being planned



Recovery Simulation

ERP recovery simulation completed (once per year)
ERP data back up to IDC (daily)



Data Security Checks

Third-party data security checks completed
(once per year)



Weakness Inspections

Third-party weakness inspections completed
(twice per year)



External Certification

ISO 27001
Obtained in January 2021

