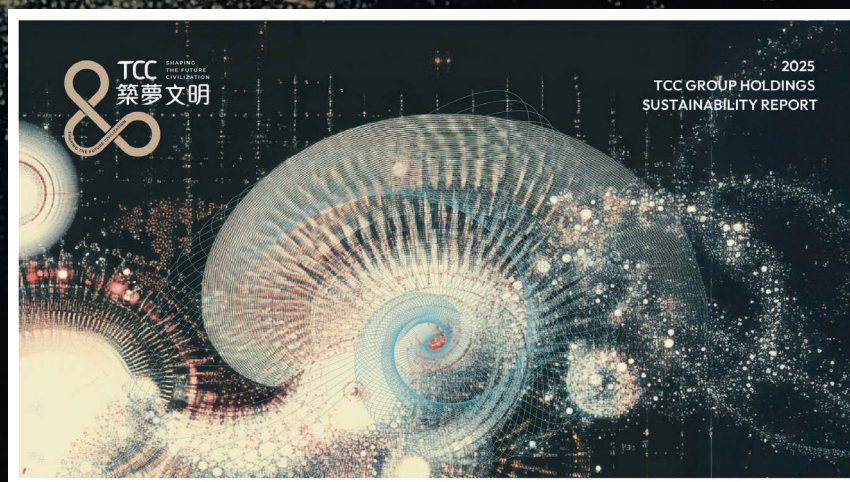




2025
TCC GROUP HOLDINGS
SUSTAINABILITY REPORT





Cover Design Concept

Future, prior to its arrival,
Already permeates the structure of our lives and time.

"Digital Nautilus" symbolizes 500 million years of resilient,
continuous adaptation.

Far more than a witness to history, TCC harnesses the synergy
of sustainability and technology, answering the echoes of
civilization to pioneer a new epoch.

Contents

Letter to Our Stakeholders	04
About TCC Group Holdings	06
Our 2025	07
Shaping the Future Civilization	08
Pillar I Financial Resilience	10
Pillar II Global Operations	12
Pillar III Climate Technology	13
Pillar IV R&D Integration	20
Pillar V ESG Advantages	31
Pillar VI Talent & Culture	36
Just Transition Plan	37
Special Feature – TCC 80th Anniversary	39
Risk Governance Enhancing Operational Resilience	44
Stakeholder and Material Topic Analysis	45
Sustainability Goals and Tracking	52
2025 Honors and Recognition	54
More About the Report	55

①

Governance

Governance Structure	58
Sustainability Management Framework	61
Risk Management Framework	63
TCFD	67
Ethical Management	76
Information Security	81
Supply Chain Management	84
Customer Communication	88
Intellectual Property Management	92

②

Carbon Reduction

Low-Carbon Construction Materials	94
Resource Recycling – City Mining	102
Low-Carbon Production Management	109

③

Energy Transition

Cement and Power Integration	119
Battery Energy Storage	120
Green Energy Supply	123
Renewable Energy Generation & Solution	125
Energy Transition	128
Social Aspects of the Energy Transition	130

④

Employee

Climate Action Talent	133
Employee Development	135
Employee Remuneration and Benefits	140
Occupational Health and Safety	145
Human Rights Protection	151

⑤

Nature

TCC Nature Action: TNFD	157
Forest & Soil Restoration	166
Marine Restoration	174
Nature-based Solutions (NbS)	180
Natural Benefit Sharing	182
Environmental Education	184

⑥

Social Inclusion

Social Engagement	187
Education Equity	194
Cultural Preservation	196

Appendix

ESG Data	198
Sustainability Disclosure for the Listed Cement Companies	218
GRI Index	221
ESRS Index	229
Third-Party Assurance Statement	232



Overview

Letter to Our Stakeholders

About TCC Group Holdings

Our 2025

Shaping the Future Civilization

Pillar I Financial Resilience

Pillar II Global Operations

Pillar III Climate Technology

Pillar IV R&D Integration

Pillar V ESG Advantages

Pillar VI Talent & Culture

Just Transition Plan

Special Feature – TCC 80th Anniversary

Risk Governance Enhancing

Operational Resilience

Stakeholder and Material

Topic Analysis

Sustainability Goals and Tracking

2025 Honors and Recognition

More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Letter to Our Stakeholders |



Keeping Watch over Civilization's Tomorrow

80 years ago, Taipei's architectural and urban development began its unfolding from precisely this place.

At that time, nearly all the building materials and supplies entering Taipei were gathered and transshipped through this very station, before flowing outward to every corner of the city. One might say: this place was not merely a transit node — it was one of the very origins from which modern Taipei was born.

And TCC's 80 years resonate with that same historical rhythm: from the flow of materials inward, to the establishment of civilization.

I have been thinking lately: in this exhilarating era dominated by AI, semiconductors, and extraordinary computing power, the cement industry rarely finds itself in the spotlight. Cement seldom makes that list. Few young people grow up dreaming: "I want to dedicate my life to cement."

But imagine a world without cement — bridges would cease to exist, roads would stop extending, cities would lose the very ground from which they grow. Even the digital civilization we take such pride in would lose the physical substrate on which it stands.

There is a saying within the cement industry that carries quiet pride: cement is civilization's most silent and most resilient skeleton.

And TCC has spent 80 years faithfully tending to that skeleton.

80 years ago, the fires of war had just been extinguished, and the land was scarred with wounds. The founders of TCC began their work amid that rubble. Without today's equipment, without today's capital. Armed with only two things: their hands, and their conviction.

They transformed ore into cement, and cement into roads, bridges, ports, and cities. This was not merely the beginning of an industry. It was a generation's covenant — with the land, with society, with the future. They laid for this land a true sine qua non — an indispensable foundation upon which all else could stand.

Yet the most important asset our founders left behind was not the factories.

It was something far more difficult: the measure of conduct in how one lives and works.

What does this measure look like? Before heaven and earth — humility. Among colleagues — integrity. In running a business — rectitude.

They understood this long ago: what truly sustains the future has never been cement alone. It is trust.

Our Founding Chairman Koo, bequeathed to TCC eight characters: "Humility to achieve harmony; sincerity to build trust."



Overview

Letter to Our Stakeholders

About TCC Group Holdings

Our 2025

Shaping the Future Civilization

Pillar I Financial Resilience

Pillar II Global Operations

Pillar III Climate Technology

Pillar IV R&D Integration

Pillar V ESG Advantages

Pillar VI Talent & Culture

Just Transition Plan

Special Feature – TCC 80th Anniversary

Risk Governance Enhancing

Operational Resilience

Stakeholder and Material

Topic Analysis

Sustainability Goals and Tracking

2025 Honors and Recognition

More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

These are not a slogan.

They are closer to a constitution written into the very bones of this company.

A constant reminder:

Toward nature — humility; do not contend with heaven.

Toward institutions — rectitude; do not contend with others.

Toward partners — integrity; never betray what is entrusted to you.

Toward the world — faithfulness; let every word be matched by action.

Eight decades on, this spirit has crystallized into a commitment: the Total Care Commitment.

Care in full — for our people, for society, for nature, for the future of humanity.

The ancients would have called such an endeavor: the work of the humane.

Today, TCC has grown beyond Taiwan. Our colleagues come from 58 different countries — different languages, different cultures.

But united by one belief: to serve the future, to serve humanity, to serve the planet.

This has taught us, gradually, something important:

*true internationalization
is not about drawing a larger map.*

*It is about carrying our values
further.*

A truly global company does not merely expand its borders on the map —

It establishes its coordinates within conscience.

Yet today's world is also in turbulent transformation.

The climate is shifting, resources are diminishing, glaciers are retreating, and forests are receding.

Data rushes like a flood, but the human spirit so often drifts unmoored.

Human civilization stands at a new crossroads.

In this era, TCC has chosen a path that is not easy.

But we believe it is the more righteous path:

Reverence for nature. Respect for resources. Love for people. Caution in action.

From cement, we move toward low-carbon energy. From industry and energy development, toward the circular economy.

From building cities, toward protecting the planet.

To complete this sweeping transformation, we must begin at the most foundational — and most critical — link in the chain.

At the heart of this journey is energy.

TCC is committed to green energy that is storable, manageable, and renewable — advancing solar, wind, geothermal, and other renewable sources broadly.

Through the construction of energy storage facilities and smart grids that regulate power like a reservoir, we have realized a new mode of energy use: clean, stable, and endlessly renewable — giving civilization's operations the most resilient and sustainable energy lifeline.

We are not being pushed forward by the times. We are being drawn forward by conscience.

Today, TCC's solemn declaration to the world is this: Shaping the Future.

But we are not designing a future that belongs to TCC alone.

We hope to write a new chapter of civilization — together with the world.

Because one truth is remarkably simple:

Without cement, there are no cities.

Without infrastructure and sufficient energy, there are no semiconductors.

Without the physical world, there is no digital civilization.

What TCC does is, in the end, quite simple:

it gives civilization a place to stand.

The ancient Greek philosopher Plato said: true construction begins in the soul.

80 years on, those words still ring clear as a bell: steel and cement do not merely lay foundations for cities — They are building the future of humanity.

80 years, in the long river of human history, is but a single ripple of light.

Yet for a company, it is a journey that spans generations.

On this 80th anniversary, let us look back once more: TCC set out from postwar ruins, step by step — transforming ore into roads, roads into cities, and cities into the skeleton of human civilization.

What our founders left behind was never merely factories or quarries.

What they left was a spirit:

Amid heaven and earth — maintain humility.

Among people — maintain integrity.

Before history — maintain responsibility.

Today's world continues to change.

Technology accelerates; the climate shifts.

Civilization is turning a new page.

Yet one thing will never change:

Civilization always requires foundations. It requires bridges, roads, and cities; clean and stable energy; and the means to manage what we discard.

It requires the land on which human beings can build a life.

And what TCC does is precisely to safeguard this foundation.

We are not merely building cities.

*We are keeping watch over
civilization's tomorrow.*

So let us remember:

Humility as our sail, sincerity as our bridge, trust as our anchor, and harmony as our road.

To walk with the world; to travel far with civilization.

Because when history looks back upon this era, it may not remember every company by name.

But it will remember this: that at civilization's turning point, there were those who still paved the way for humanity.

The cement civilization and circular economy that TCC advances exist to follow and protect the enduring cycle of life in the world ahead.

Nelson An-ping Chang
Group CEO, TCC Group Holdings



Overview

Letter to Our Stakeholders

About TCC Group Holdings

Our 2025

Shaping the Future Civilization

Pillar I Financial Resilience

Pillar II Global Operations

Pillar III Climate Technology

Pillar IV R&D Integration

Pillar V ESG Advantages

Pillar VI Talent & Culture

Just Transition Plan

Special Feature – TCC 80th Anniversary

Risk Governance Enhancing

Operational Resilience

Stakeholder and Material

Topic Analysis

Sustainability Goals and Tracking

2025 Honors and Recognition

More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

About TCC Group Holdings

#1

Leading Low-Carbon Construction
Materials & New Energy Group

TCC Group Holdings, evolving from Taiwan
Cement Corporation (TWSE: 1101), is a global

#3

Largest Global
Cement Player

sustainability-focused enterprise dedicated to
low-carbon building materials, resource

20

Core Markets
Worldwide

circularity, and green energy. The Group has
expanded from Taiwan to Mainland China,
Türkiye, Europe, and Africa, delivering integrated
solutions that support the transition to a net-zero
future.

Founded in 1946, Taiwan Cement Corporation
became Taiwan's first publicly listed company in
1962. Since launching its transformation in 2018,
the Group has focused on its three core
businesses while accelerating its global

expansion. Reflecting its evolution into a global
enterprise, the Group officially adopted the
name TCC Group Holdings in 2024.
Guided by its Total Climate Commitment and
Total Care Commitment, TCC is committed to
producing the world's lowest-carbon local
building materials and delivering integrated
green energy solutions, while harmonizing the
relationship between human civilization and
nature.



	Low-carbon Construction Materials
	Resource Recycling
	Green Energy, Energy Storage, and Batteries
	Energy for Social Transformation and Others





Overview

- Letter to Our Stakeholders
- About TCC Group Holdings
- Our 2025
 - Shaping the Future Civilization
 - Pillar I Financial Resilience
 - Pillar II Global Operations
 - Pillar III Climate Technology
 - Pillar IV R&D Integration
 - Pillar V ESG Advantages
 - Pillar VI Talent & Culture
- Just Transition Plan
- Special Feature – TCC 80th Anniversary
- Risk Governance Enhancing
- Operational Resilience
- Stakeholder and Material
- Topic Analysis
- Sustainability Goals and Tracking
- 2025 Honors and Recognition
- More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Our 2025

Consolidated Revenue

NTD 149.8 BILLION

CAGR: 5.88%
| 2016–2025



Operating Cash Flow

NTD 33.1 BILLION

Total cash and time deposits
NTD 142.7 BILLION



Gross Margin¹

18.7%

Operating Profit Margin¹

8.1%

Net Debt to EBITDA

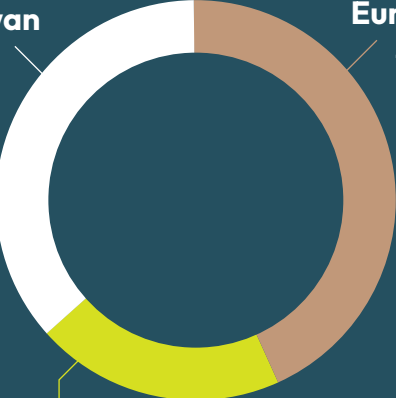
2.1x

Note 1: Gross margin and operating profit margin exclude one-time items.

Regional Revenue Mix

Taiwan 36%

Europe 44%



Asia 20%



58
Employee Nationalities

13,000+
Total Global Employees
(including subsidiaries)

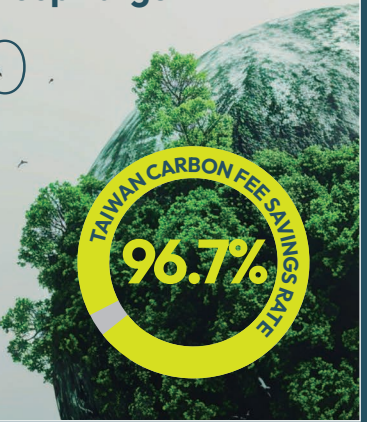
Scope 1 Net | kgCO₂/t cementitious materials

EMEA	578	Asia 622 (-2.7%)
CIMPOR Cement 543 (-9.0%)	OYAK Cement 586 (-4.1%)	
Group 608 (-3.3%)		

Note 2: % decrease compared to 2024; for detailed breakdown, please refer to page 52.

Global Group Target

2050
SBT
Net Zero



AI-Powered Smart Manufacturing

average annual carbon reduction 1.8%

Electrified Quarries

Power Cost Reduction 78%





Overview

Letter to Our Stakeholders

About TCC Group Holdings

Our 2025

Shaping the Future Civilization

Pillar I Financial Resilience

Pillar II Global Operations

Pillar III Climate Technology

Pillar IV R&D Integration

Pillar V ESG Advantages

Pillar VI Talent & Culture

Just Transition Plan

Special Feature – TCC 80th Anniversary

Risk Governance Enhancing

Operational Resilience

Stakeholder and Material

Topic Analysis

Sustainability Goals and Tracking

2025 Honors and Recognition

More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Shaping the Future Civilization

Cement Renaissance: From Commodity to Core Substance

An Engineered Portfolio of Capabilities: TCC Fundamental Construction Materials and New Energy



Self-Renewing & Durable
Survivable under Extreme Stress
Smart with Sensing and Traceability
Scalable Precision



Clean
Controlled
Credible

“The world is changing the rules. Not only is the speed of change accelerating—the structure of the world itself is being rewritten. As we move toward 2050 Net-Zero, and toward a future of carbon borders, the market will no longer reward what is merely heavy and cheap. It will reward what is necessary, verifiable, circular, intelligent, and low-carbon.”

— Chairman Nelson An-ping Chang

Cement has evolved into the core substance supporting AI computing power, energy transition, and future urban resilience. This Cement Renaissance—driven by the integrated innovation of low-carbon construction materials, circular resources, energy storage systems, and smart energy.



Overview

Letter to Our Stakeholders
About TCC Group Holdings
Our 2025

Shaping the Future Civilization

Pillar I Financial Resilience
Pillar II Global Operations
Pillar III Climate Technology
Pillar IV R&D Integration
Pillar V ESG Advantages
Pillar VI Talent & Culture
Just Transition Plan
Special Feature – TCC 80th Anniversary
Risk Governance Enhancing
Operational Resilience
Stakeholder and Material
Topic Analysis
Sustainability Goals and Tracking
2025 Honors and Recognition
More About the Report

Governance

Carbon Reduction
Energy Transition
Employee
Nature
Social Inclusion
Appendix

TCC Sustainable Growth Engine

The Future is Worth It

Total Climate Commitment

Total Care Commitment

Shaping the Future Civilization

MATERIAL INNOVATION

ENERGY TRANSITION

1
GOAL

2
STRATEGIES

6
PILLARS



FINANCIAL
RESILIENCE



GLOBAL
OPERATIONS



CLIMATE
TECHNOLOGY



R&D
INTEGRATION



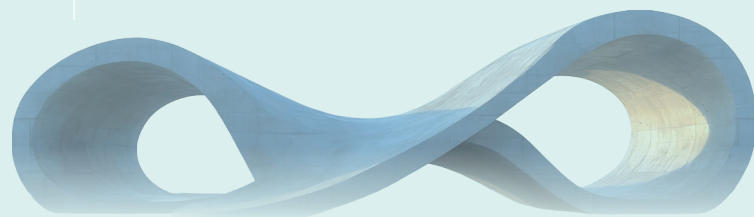
ESG
ADVANTAGES



TALENT
& CULTURE



Hope × (Action + Empathy)ⁿ



FUTURE MOMENTUM



Overview

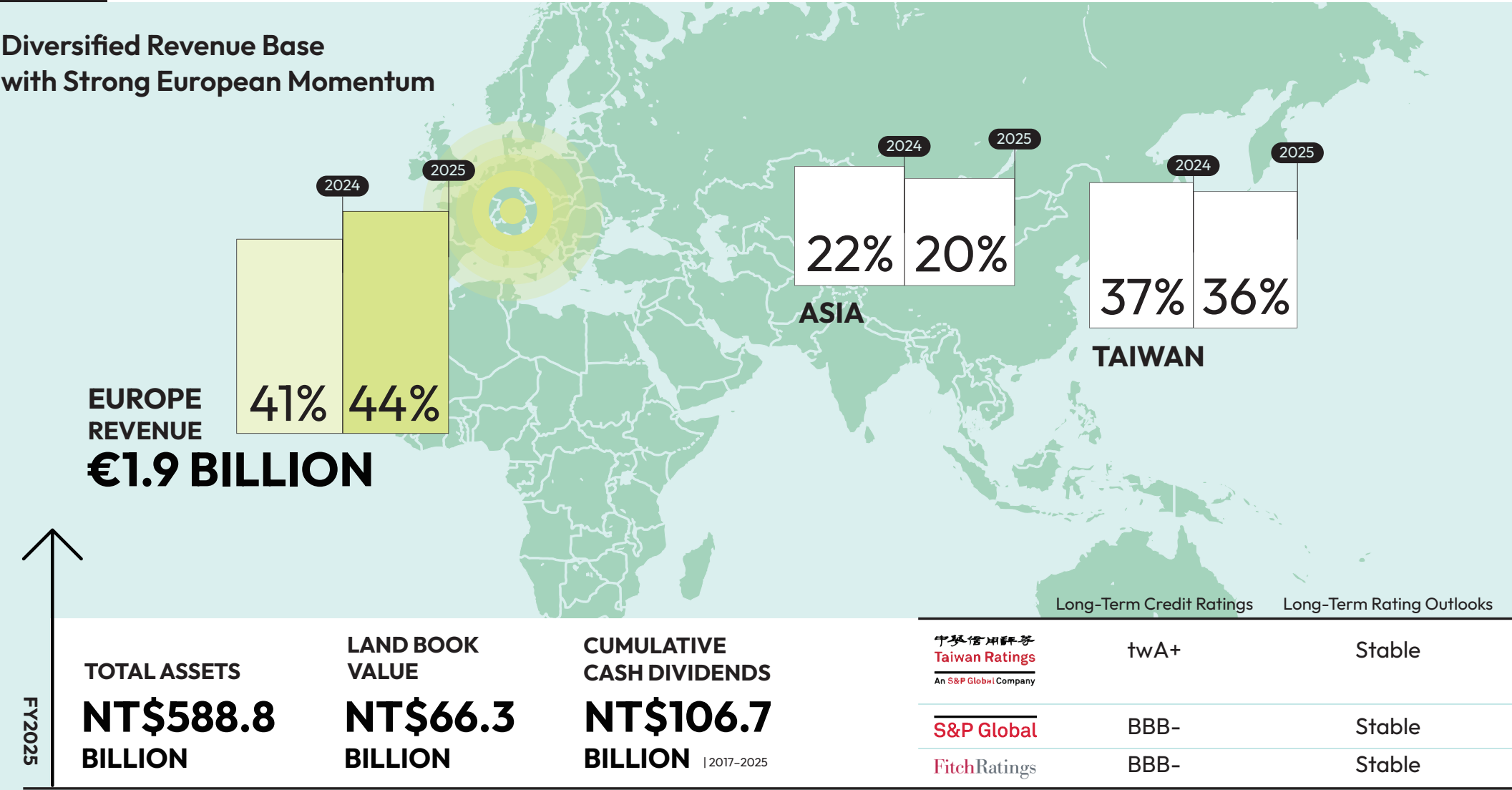
- Letter to Our Stakeholders
- About TCC Group Holdings
- Our 2025
- Shaping the Future Civilization
- Pillar I Financial Resilience**
- Pillar II Global Operations
- Pillar III Climate Technology
- Pillar IV R&D Integration
- Pillar V ESG Advantages
- Pillar VI Talent & Culture
- Just Transition Plan
- Special Feature – TCC 80th Anniversary
- Risk Governance Enhancing
- Operational Resilience
- Stakeholder and Material
- Topic Analysis
- Sustainability Goals and Tracking
- 2025 Honors and Recognition
- More About the Report

- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Appendix



Pillar I – Financial Resilience

Diversified Revenue Base
with Strong European Momentum





Overview

Letter to Our Stakeholders
About TCC Group Holdings
Our 2025
Shaping the Future Civilization
Pillar I Financial Resilience
Pillar II Global Operations
Pillar III Climate Technology
Pillar IV R&D Integration
Pillar V ESG Advantages
Pillar VI Talent & Culture
Just Transition Plan
Special Feature – TCC 80th Anniversary
Risk Governance Enhancing
Operational Resilience
Stakeholder and Material
Topic Analysis
Sustainability Goals and Tracking
2025 Honors and Recognition
More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Four Business Platforms Established

TCC's operational strategy aligns with Europe's four core long-term platforms. Delivering €1.9B in FY2025 revenue, this dual-engine framework connects low-carbon cement with new energy technologies. Production capacity and decarbonization are anchored by OYAK Cement (Türkiye) and CIMPOR (Portugal/Africa), while infrastructure growth is driven by NHOA Energy's battery storage and Atlante's charging-storage solutions.

Low-Carbon Building Materials Growth

Fueled by expanding infrastructure demands and building renovation initiatives, European construction output is projected to grow by 3%–5%, outperforming broader regional GDP growth by over 2x.

Robust Demand Capture & Logistics Excellence

Top-tier brand positioning: CIMPOR and OYAK Cement leverage Türkiye's strategic proximity to key post-conflict and earthquake reconstruction zones.

Logistics excellence: Strategic port & logistics infrastructure across UK & France unlock key EU corridors.



Accelerated Carbon Cost Internalization

Driven by an EU ETS market scale exceeding €600B in 2025, carbon prices are projected to rise from ~€75/ton today to €142/ton by 2030. This coincides with the gradual phase-out of free cement allowances starting in 2026, reaching zero by 2034.

Advanced Low-Carbon Technology & Early Carbon Credits

Strategic regulatory hedging: CIMPOR accumulates 2.4 million tons of early carbon credits.

Production flexibility & adaptability: Mastery of key decarbonization materials and processes including calcined clay and X-clinker.

High-quality product leadership: OYAK Cement supplies premium low-carbon white cement.

Advanced 3D printing: Applications shorten construction timelines and enhance structural strength.



E-Mobility & Electrification Policies

Anchored by targets of 30M electric vehicles and 3M charging points by 2030, Europe's green mobility transition remains at less than 30% of these goals as of late 2025.

Vertical Integration in Energy Products & Services

Prefabricated design: Enables 14-day rapid completion for solar-charging-storage stations.

Patented fireproof EnergyArk®: 331+ contracts across major commercial partners in France, Portugal, and Italy.

Global EV charging platform: Builds and operates EV charging platforms with 5,000+ points worldwide.

Utility-scale battery energy storage: NHOA Energy accumulates more than 5GWh online and under construction across 58 operational plants, driven by turnkey expertise in system design, engineering, and cross-regional delivery.

C&I battery energy services: Provides full-lifecycle O&M solutions for commercial and industrial BESS sites.

VPP operations: Manages VPP energy trading and aggregation services.

All-in-One Integration: Renewable Energy Generation + EV Charging + BESS + VPP Power Trading

For more information, please refer to [p.17](#).





Overview

Letter to Our Stakeholders
About TCC Group Holdings
Our 2025
Shaping the Future Civilization
Pillar I Financial Resilience
Pillar II Global Operations
Pillar III Climate Technology
Pillar IV R&D Integration
Pillar V ESG Advantages
Pillar VI Talent & Culture
Just Transition Plan
Special Feature – TCC 80th Anniversary
Risk Governance Enhancing
Operational Resilience
Stakeholder and Material
Topic Analysis
Sustainability Goals and Tracking
2025 Honors and Recognition
More About the Report

Governance

Carbon Reduction
Energy Transition
Employee
Nature
Social Inclusion
Appendix



Pillar II — Global Operations



Multi-Domestic Model Driving Market Leadership

Utilizing local expertise to scale operations across Europe, Türkiye, and Asia, validated by leading market shares and global strategic alliances.

Asia Market

#1 Cement Market Share
#1 Market Share in Cement Market **Taiwan 32.5%**

#6 Clinker Capacity
Leader of Clinker Capacity
#6 Top Producer in Mainland China

#1 Power Auxiliary Service

Top provider of power auxiliary service in **Taiwan**

Largest energy storage facility in **Mainland China's cement industry**
40.946 MWh energy storage capacity at **Yingde & Guigang Plants**

Europe, Africa & Türkiye Markets

#1 Cement Market Share
CIMPOR #1 **Portugal 52%**
OYAK Cement #1 **Türkiye 16%**

#1 EV Charging Alliance
Atlante Charging Service
Member of ChargeLeague (formerly Spark Alliance)
Europe's largest and most extensive EV charging network
GRESB SCORES
1st Peer Group Ranking (Sector Electric vehicle charging)
96/100

Tier1 Energy Storage Supplier

NHOA Energy
A vital global BESS Integrator
Supply chain mastery for client energy asset development



EPC Firm of the Year from Energy Storage Awards



Overview

Letter to Our Stakeholders
About TCC Group Holdings
Our 2025
Shaping the Future Civilization
Pillar I Financial Resilience
Pillar II Global Operations
Pillar III Climate Technology
Pillar IV R&D Integration
Pillar V ESG Advantages
Pillar VI Talent & Culture
Just Transition Plan
Special Feature – TCC 80th Anniversary
Risk Governance Enhancing
Operational Resilience
Stakeholder and Material
Topic Analysis
Sustainability Goals and Tracking
2025 Honors and Recognition
More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix



Pillar III — Climate Technology

Climate technology drives diversified revenue and core competitiveness. Spanning Asia, Europe, and Africa, TCC leverages vertical integration to combine material science with energy storage and charging networks, delivering innovative low-carbon products and integrated new energy services.



EnergyArk® energy storage system — exclusive patent

UHPC fire-resistant and extinguishing energy storage cabinet reduces carbon by 50% compared to metal cabinets



Energy-as-a-Service (EaaS) integrated charging services for mobile vehicles

Construction and operation of charge & storage integrated charging networks



Utility, commercial and industrial battery energy storage site energy services

Planning and construction of large-scale grid energy storage sites



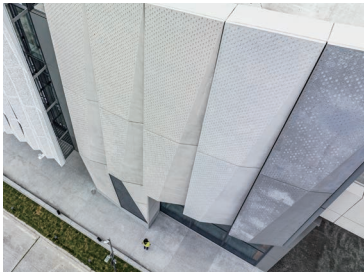
Under development

X-Clinker
Next-Generation Clinker
Biochar
(see [CH 2.1](#))



Portland Limestone (IL) Cement

Replaces Portland cement, reducing carbon emissions by up to 24.6% (see [CH 2.1](#))



Ultra-High Performance Concrete (UHPC)

Reduces carbon emissions by 60% and has a lifecycle of up to 120 years (see [CH 2.1](#))



A-Fluire Mortar self-leveling concrete

Suitable for high-end facilities of semiconductor and AI computing centers



Permeable Concrete

Aggregates or construction and demolition waste recycled materials



deOHclay

Uses local raw materials and establishes low-energy production technologies to provide strong supply resilience



Overview

Letter to Our Stakeholders
About TCC Group Holdings
Our 2025
Shaping the Future Civilization
Pillar I Financial Resilience
Pillar II Global Operations
→ **Pillar III Climate Technology**
Pillar IV R&D Integration
Pillar V ESG Advantages
Pillar VI Talent & Culture
Just Transition Plan
Special Feature – TCC 80th Anniversary
Risk Governance Enhancing
Operational Resilience
Stakeholder and Material
Topic Analysis
Sustainability Goals and Tracking
2025 Honors and Recognition
More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Low-Carbon High-Value Products

A-Fluire Mortar

Targets Top-Tier Strength for Tech Plants to Define New Market Standards

Accelerated by semiconductor expansion and AI data center construction, tech clients require high-specification flooring to protect precision equipment. TCC launched **A-Fluire Mortar**, a flagship 10,000 psi self-leveling flooring that prevents cracking under heavy machinery. It matches top-tier material strength without relying on imports, balancing decarbonization targets with cost control.



10,000 psi Compressive Strength:

Equivalent to the steel structure of Taipei 101, its strength develops 3 to 4 times faster than competing products within 24 hours.

Ultra-Thin Application Thickness:

Only 3 to 5 mm is required to fully meet load-bearing requirements.

Excellent Load-Bearing Capacity:

Suitable for markets and applications requiring machinery with extremely high load-bearing capacity.

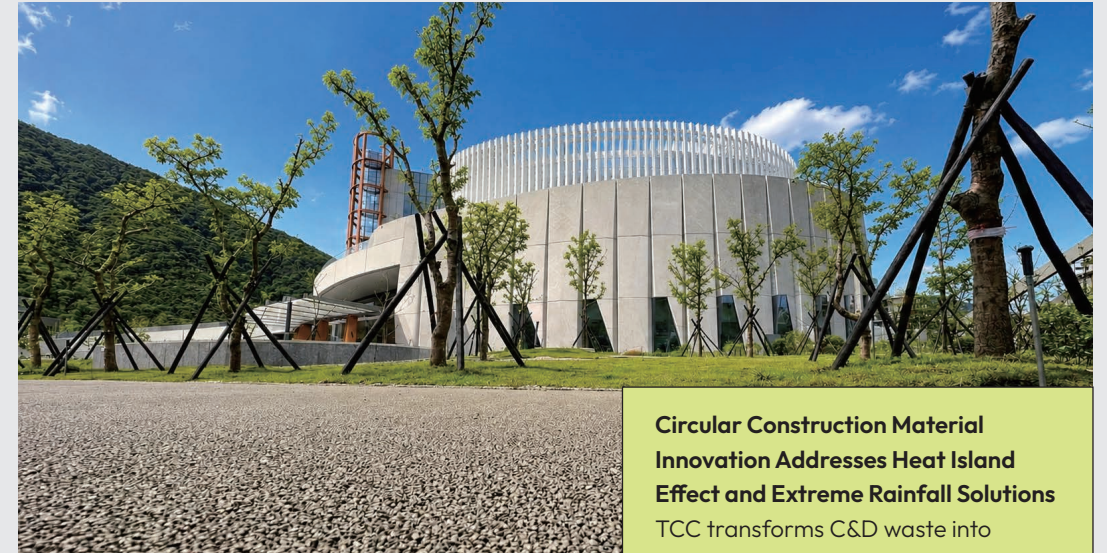
Permeable Concrete

Construction and Demolition (C&D) Waste Recycling to Build Urban Infrastructure Components

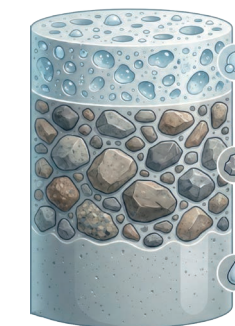
Global urban renewal turns building waste into resources. Ministry of Environment data shows Taiwan's C&D waste reached 2.3 million tons in 2024. TCC refines these materials into sustainable momentum. The Hualien Plant invested in a C&D waste treatment project in 2023 and obtained the permit in 2025, with a monthly treatment capacity of 12,000 tons. It uses the screened 20mm and 10mm crushed stones as concrete aggregates, and sends the fine powder to the cement plant as alternative raw materials. In addition, the Suao Plant plans to introduce related treatment equipment in the future (see CH [2.2](#)).

TCC R&D Center Optimizes Mix Design, Achieving Drainage Capacity 5 Times That of Extreme Rainfall

Permeable concrete requires 15%–25% interconnected voids. To overcome rheological challenges, the paste mix must coat aggregates for strength while preventing drain-down from clogging voids.



Permeable Concrete pavement at Hoping Cement Plant RRRC



Top Layer: Porosity 16%
Volume is 160 Liters

Middle Layer
Coarse Aggregate
Volume 592L, Density 1480 kg/m³

Bottom Layer
Cement Paste
Volume is 247 Liters



Circular Construction Material Innovation Addresses Heat Island Effect and Extreme Rainfall Solutions

TCC transforms C&D waste into Recycled Concrete Aggregate (RCA) for permeable concrete pavement. This highly durable design enables rapid drainage to mitigate extreme rainfall and the urban heat island effect. TCC has signed cooperation agreements across Taiwan, implementing this at the RRRC, TCC Green Energy storage sites, and TCC's future headquarters, Tower Urban Oasis.



Overview

Letter to Our Stakeholders
About TCC Group Holdings
Our 2025
Shaping the Future Civilization
Pillar I Financial Resilience
Pillar II Global Operations
Pillar III Climate Technology
Pillar IV R&D Integration
Pillar V ESG Advantages
Pillar VI Talent & Culture
Just Transition Plan
Special Feature – TCC 80th Anniversary
Risk Governance Enhancing
Operational Resilience
Stakeholder and Material
Topic Analysis
Sustainability Goals and Tracking
2025 Honors and Recognition
More About the Report

Governance

Carbon Reduction

Energy Transition

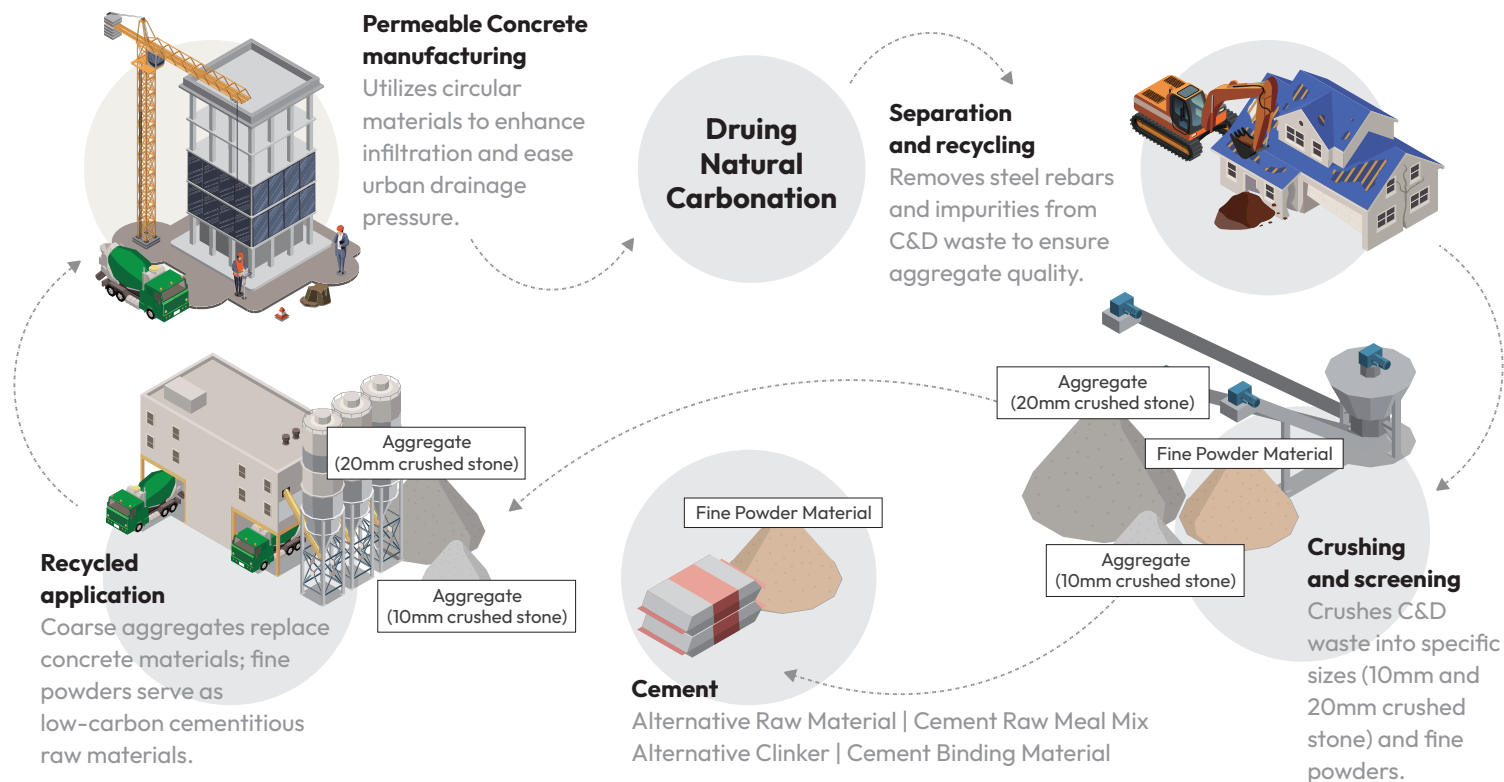
Employee

Nature

Social Inclusion

Appendix

C&D Waste Treatment Process



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Sustainability Partner

TCC collaborates with PUJEN Construction to recycle urban renewal waste into new materials, targeting to jointly promote 5 sites to obtain sustainable building certifications.



OYAK Cement Builds a Circular Construction Material Value Chain to Accelerate Post-Disaster Reconstruction

In Türkiye, OYAK Cement is researching the use of recycled aggregates to accelerate post-disaster cleanup and reconstruction.

CIMPOR bets on construction and demolition materials to promote concrete recycling into its basic constituents.

CIMPOR is testing the extraction of recycled sand, aggregates, and fine cement paste powder from concrete waste. Sand and aggregates reduce natural resource extraction, while fine powder replaces clinker in traditional OPC and next-generation X-Clinker, cutting thermal energy and carbon emissions.



Overview

Letter to Our Stakeholders
About TCC Group Holdings
Our 2025
Shaping the Future Civilization
Pillar I Financial Resilience
Pillar II Global Operations
→ **Pillar III Climate Technology**
Pillar IV R&D Integration
Pillar V ESG Advantages
Pillar VI Talent & Culture
Just Transition Plan
Special Feature – TCC 80th Anniversary
Risk Governance Enhancing
Operational Resilience
Stakeholder and Material
Topic Analysis
Sustainability Goals and Tracking
2025 Honors and Recognition
More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

deOHclay

Low-Carbon Key Technology Enters Mass Production

The École Polytechnique Fédérale de Lausanne (EPFL) research shows Limestone Calcined Clay Cement (LC3) reduces CO₂ emissions by up to 40% with lower Capex and Opex than traditional pathways, making calcined clay vital for carbon reduction and profitability. TCC's subsidiary, CIMPOR, has mass-produced deOHclay calcined clay, with an annual installed capacity of 1.5 million tons supporting over 5 million tons of low-carbon composite cement. This process lowers production temperatures and replaces clinker incorporation, offering an annual carbon reduction potential of 1.2 million metric tons.



-31% Reduced Energy Consumption

Reduction in Process Electricity Consumption **-63%**

40% Replacement of Cement Clinker



📅 2020

📍 Abidjan, Ivory Coast

Africa's first 300k tpa calcined clay plant features a rotary kiln directly connected to a dryer and is equipped with CIMPOR's self-designed innovative cooling system, helping to reduce carbon emissions by 31% to traditional OPC cements. This kiln uses local cashew shells and cocoa waste as biomass fuel to replace coal.

📅 2023

📍 Kribi, Cameroon

The world's first 250k tpa kiln-free plant uses flash calciner technology, helping to reduce carbon emissions by 23% to traditional OPC cements.



CIMPOR CAMEROON FIRST CALCINED CLAY PRODUCT

📅 July 2026

📍 Tema, Ghana

The world's largest 450k tpa vertical flash calciner technology significantly enhances the supply capacity of alternative raw materials such as calcined clay.

📍 Souselas, Portugal

Europe's first 500k tpa calcined clay production line built from the retrofit of an existing clinker rotary kilns. Once commissioned, it will gradually integrate into the existing product portfolio to progressively replace high-carbon cement.



Overview

- Letter to Our Stakeholders
- About TCC Group Holdings
- Our 2025
- Shaping the Future Civilization
- Pillar I Financial Resilience
- Pillar II Global Operations
- Pillar III Climate Technology**
- Pillar IV R&D Integration
- Pillar V ESG Advantages
- Pillar VI Talent & Culture
- Just Transition Plan
- Special Feature – TCC 80th Anniversary
- Risk Governance Enhancing
- Operational Resilience
- Stakeholder and Material
- Topic Analysis
- Sustainability Goals and Tracking
- 2025 Honors and Recognition
- More About the Report

Governance

- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Appendix

New Energy Products and Services

EnergyArk® Energy Storage System

Material Advantages and Energy Innovative Integration

In response to fluctuating AI data center power demands, energy storage and grid dispatching are now core infrastructure. TCC vertically integrates energy storage, charging, and power trading by transforming cement material advantages into competitive storage cabinets. Combining fire prevention technology with new

energy products, the system holds or has under review 57 patents across 14 markets, holds IEC 62443-3-3 info-security certification, and features black start and islanding capabilities. It maintains power during outages and supports virtual power plant (VPP) architecture via real-time load adjustment (see [CH 3.1](#)).

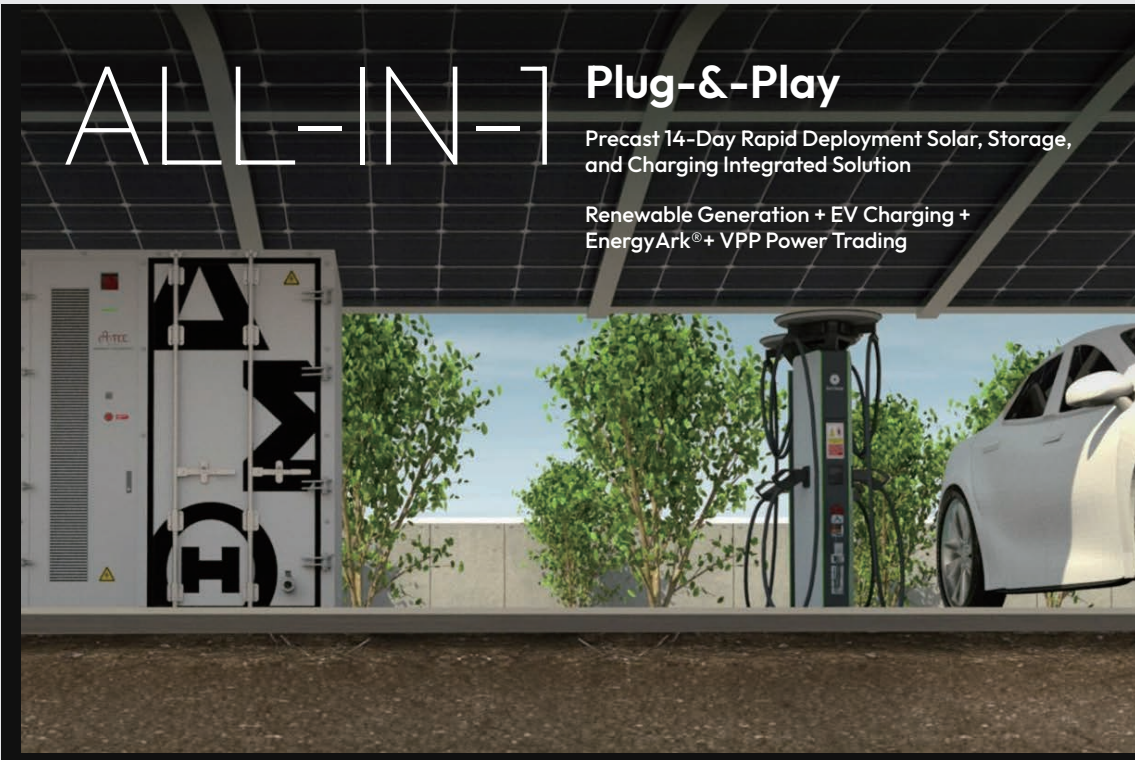
Flagship Product EnergyArk®418 Energy Storage System

TCC independently developed the EnergyArk®418 Energy Storage System, a plug-and-play solution integrating batteries, modules, and PCS within an UHPC cabinet.

This modular design lowers deployment barriers, making it ideal for power dispatch and peak shaving in charging stations,



commercial offices, and industrial sites, providing a safe, efficient infrastructure solution for distributed energy transition.



UHPC Precast Solar Carport

- **Reduced On-Site Engineering Costs:** Factory-manufactured precast concrete foundations significantly reduce on-site engineering requirements and site operation impacts.
- **Minimized Deployment Time:** Reduces excavation area and construction items, minimizing overall deployment time.

Energy Storage System (EnergyArk®)

- **All-in-One Integrated Design:** EnergyArk®418 is a plug-and-play energy storage system.
- **Ultimate Safety:** Adopts multi-level fireproof and explosion-proof designs, including gas suppression and immersion technology.
- **Century-Lifespan Cabinet Design:** Uses UHPC to build durable energy storage cabinets.

EV Charging Infrastructure

- **Fast Charging Configuration:** Paired with energy storage to meet high-power charging demands and enhance user experience.
- **Minimized Grid Demand:** Draws power from both grid and energy storage simultaneously, minimizing required grid capacity applications.



Overview

Letter to Our Stakeholders
About TCC Group Holdings
Our 2025
Shaping the Future Civilization
Pillar I Financial Resilience
Pillar II Global Operations
→ **Pillar III Climate Technology**
Pillar IV R&D Integration
Pillar V ESG Advantages
Pillar VI Talent & Culture
Just Transition Plan
Special Feature – TCC 80th Anniversary
Risk Governance Enhancing
Operational Resilience
Stakeholder and Material
Topic Analysis
Sustainability Goals and Tracking
2025 Honors and Recognition
More About the Report

Governance
Carbon Reduction
Energy Transition
Employee
Nature
Social Inclusion
Appendix

Energy-as-a-Service (EaaS)

Smile Strategy Creates Synergistic Value

TCC is one of the few global operators spanning charging, energy storage, and power trading. It flexibly allocates resources across business entities to formulate optimal business models for different regulatory environments. In the European market, TCC launched the Smile Strategy through its subsidiary Atlante in 2025: using an ultra-fast charging network as the foundation, it expands its user base via digital platforms and loyalty rewards, while participating in electricity trading and grid ancillary services through EnergyArk® storage

systems and smart energy management platforms to enhance efficiency, flexibility, and long-term resilience (see [CH 3.1](#)).

Sites, Demands, and Regulation: TCC and Clients Co-Create Business Models

Since entering French shopping malls in 2024, TCC has penetrated the European mobility ecosystem, accurately positioning itself in fast-growing charging and power trading markets to become a key participant in the European energy transition.

Large Retail Malls

TCC collaborates with European retail leaders, including Aldi, Pingo Doce, CCV, Groupe Duval, and Klépierre, to deploy ultra-fast charging at major hypermarkets and malls. TCC targets urban hubs, penetrating commercial districts, central markets, and core streets in metropolitan areas like Milan, while installing EnergyArk® storage systems to optimize electricity usage. Simultaneously, it partners with hypermarkets to launch a point ecosystem, allowing car owners to redeem charging discounts in the myAtlante App after spending. This mutually beneficial model drives traffic to hypermarkets and accurately attracts target customer groups.



Partner Feedback



David Carim,
Director of ALDI

Installing EV charging stations at supermarkets aligns with ALDI's commitment to sustainability and energy efficiency. Partnering with Atlante enables ALDI to provide customers with more convenient and efficient services.



Pauline Boucon,
General Manager of
Groupe Duval

Groupe Duval is pleased to partner with Atlante to launch an electrification project across its real estate portfolio. Both parties will deploy over 180 fast and ultra-fast charging points in France.



Raphaël Ventre,
Director of VINCI Autoroutes

The addition of Atlante charging stations significantly increases ultra-fast charging points in our service areas, meeting the growing demand of EV users.



Traffic Arteries

The Alpine cross-border corridor is Europe's busiest heavy truck route. Atlante has secured charging stations at three key nodes: Simplon Pass, Great St Bernard Pass, Ponte Chiasso border crossing in Norther Italy and Switzerland, transforming facilities into integrated nodes connecting logistics data, energy dispatch, and supply chain Scope 3 decarbonization management.



Overview

Letter to Our Stakeholders
About TCC Group Holdings
Our 2025
Shaping the Future Civilization
Pillar I Financial Resilience
Pillar II Global Operations
Pillar III Climate Technology
Pillar IV R&D Integration
Pillar V ESG Advantages
Pillar VI Talent & Culture
Just Transition Plan
Special Feature – TCC 80th Anniversary
Risk Governance Enhancing
Operational Resilience
Stakeholder and Material
Topic Analysis
Sustainability Goals and Tracking
2025 Honors and Recognition
More About the Report

Governance

Carbon Reduction
Energy Transition
Employee
Nature
Social Inclusion
Appendix

Low-Carbon Sustainable Construction – Practices and Innovations



Hangzhou C.F. Koo Building

Featuring a "water sleeves" design, the structure uses TCC Jurong Plant's low-carbon cement with washed fly ash. Integrated BIPV solar glass generates 172.6 MWh annually, saving 2.47% of energy and reducing 535 tCO₂e per year. A solar-storage-charging integrated system with a 6.18 MWh EnergyArk® and 54 fast chargers, meeting EV demand, optimizes power grid use, and capitalizes on peak-valley tariff differences.



DAKA Renewable Resource Recycling Center (RRRC)

Inspired by the "golden ratio" of local mountain valleys, the project features TCC low-carbon cement and UHPC exterior walls. Permeable concrete roads provide high load-bearing capacity while mitigating the heat island effect and extreme rainfall to enable a sponge city design. Rooftop solar, wind turbines, optimized HVAC, and efficient lighting together target a 60-year life-cycle carbon reduction of over 12,000 tCO₂e. The park integrates TCC's energy capabilities, featuring storage-and-charging parking lots planned by NHOA.TCC.



TCC Tower Urban Oasis (TUO)

Designed as an "Urban Green Valley," the project utilizes TCC's UHPC and low-carbon materials. To drive net-zero goals, solar PV capacity is scaled to 16 times and charging stations to 5 times regulatory standards, backed by large-scale energy storage. Additionally, an integrated vertical farm regulates the microclimate and cools indoor spaces through green barriers, effectively lowering HVAC energy use.

Bringing together TCC's low-carbon, new energy, and innovative technologies, TUO forms more than a building — a world-class, healthy, all-smart, and nearly zero-carbon sustainable icon is taking shape.





Overview

Letter to Our Stakeholders
About TCC Group Holdings
Our 2025

Shaping the Future Civilization

Pillar I Financial Resilience

Pillar II Global Operations

Pillar III Climate Technology

Pillar IV R&D Integration

Pillar V ESG Advantages

Pillar VI Talent & Culture

Just Transition Plan

Special Feature – TCC 80th Anniversary

Risk Governance Enhancing

Operational Resilience

Stakeholder and Material

Topic Analysis

Sustainability Goals and Tracking

2025 Honors and Recognition

More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix



Pillar IV — R&D Integration

*“ The AI era is not built on the cloud.
It is actually built on steel, energy, cables, and concrete.
And this is why I believe the cement industry is being
re-understood by the world.*

— Chairman Nelson An-ping Chang

TCC enters the industrial digital revolution, promoting Digital Twin and AI technology to leap from traditional automation to full-process AI autonomous optimization for unmanned smart factories. It drives human-machine collaboration with AI Agents, using AI as the core to trigger management innovation, reshaping work methods and organizational culture.



AI Smart Manufacturing

Hoping Plant builds a Digital Twin factory.

Mainland China cement plants connect smart mines and smart factories, integrating AI Agent into the decision-making flow.

Portugal's first 5G Industrial IoT smart cement plant promotes preventive maintenance through smart equipment operations.



Electric Transportation

Jurong Plant autonomous electric mine saves approximately RMB 6.12 million in fuel and labor costs annually, reducing carbon emissions by over 1,800 tCO₂e per year, and boosts transport efficiency by 40%.

Electric mining trucks at Hoping Cement Plant quarry reduce carbon footprint by 848 tCO₂e annually and lower power costs by 78%.

CIMPOR's first electric mixer truck will operate in Lisbon by May 2026; Taiwan expects rollout in 2026.



3D Printing Construction

CIMPOR supports 3D concrete printing for social housing in Portugal, implementing inclusive housing.

OYAK Cement aims to leverage new energy solutions to build fully solar-powered homes with 3D concrete printing, recognized as a COP31 green highlight.



Process Innovation

X-Clinker full electrification of novel clinker production.

Souselas Plant plans hydrogen energy for petcoke reduction.



Overview

Letter to Our Stakeholders
About TCC Group Holdings
Our 2025
Shaping the Future Civilization
Pillar I Financial Resilience
Pillar II Global Operations
Pillar III Climate Technology
Pillar IV R&D Integration
Pillar V ESG Advantages
Pillar VI Talent & Culture
Just Transition Plan
Special Feature – TCC 80th Anniversary
Risk Governance Enhancing
Operational Resilience
Stakeholder and Material
Topic Analysis
Sustainability Goals and Tracking
2025 Honors and Recognition
More About the Report

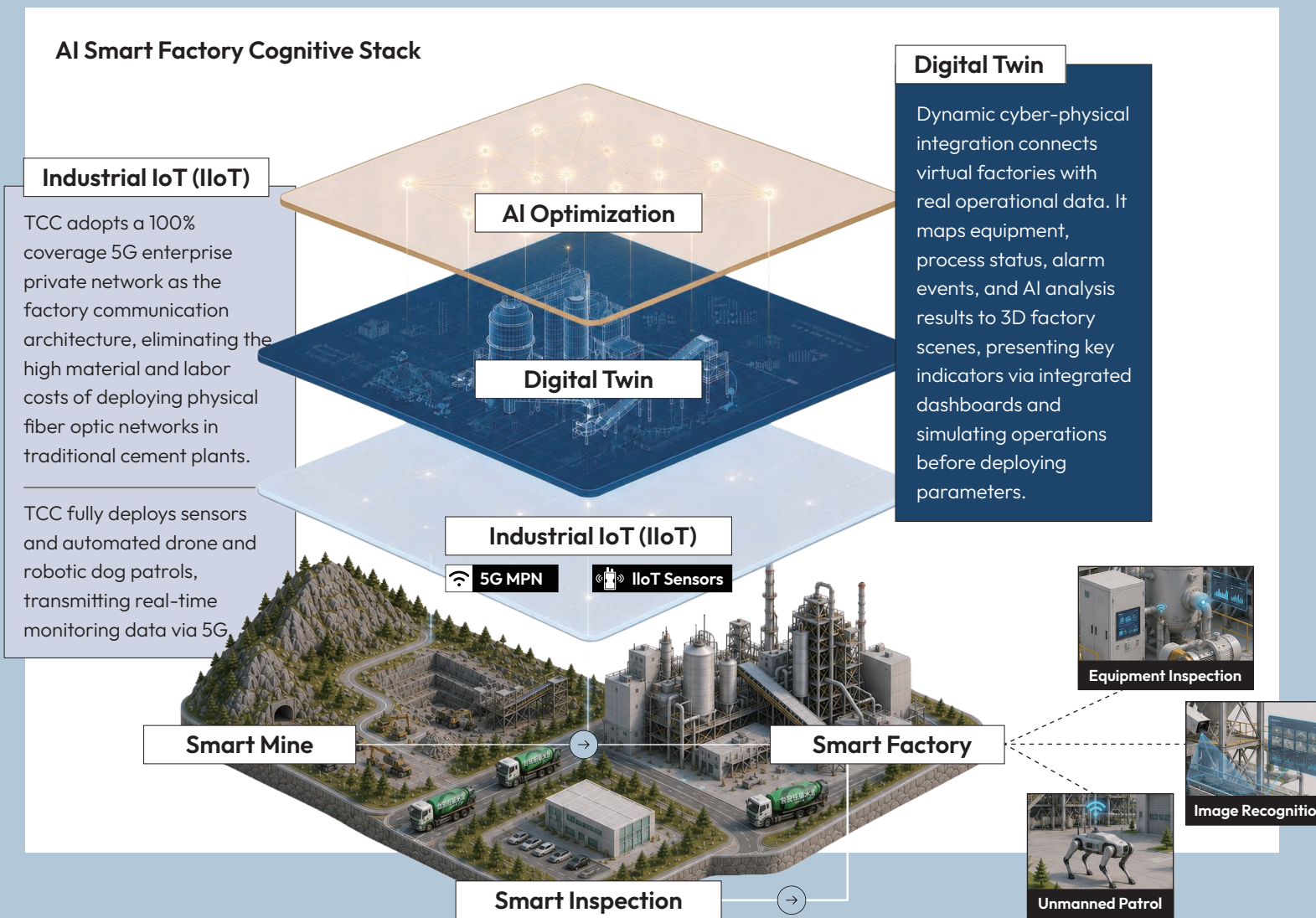
Governance

Carbon Reduction
Energy Transition
Employee
Nature
Social Inclusion
Appendix

AI Smart Manufacturing

Cement manufacturing is a continuous, complex operation spanning quarrying, raw material proportioning, rotary kiln calcination, cooling, and grinding. It involves real-time quality control, alternative material/fuel feeding tests, and occupational safety across plants and quarries.

Traditionally, each process stage used independent management platforms, creating data silos with high integration costs, lack of visualization, and heavy reliance on manual experience. To address these pain points, TCC established a 5G private network to drive Industrial IoT, deploying wireless sensors, drones, and robotic dogs for real-time data and image collection. By combining massive historical parameters with senior frontline experience, TCC built a cyber-physical digital twin factory that drives AI-optimized predictions and AI Agent automated execution. Rather than pursuing quick fixes, TCC transforms big data into high-resilience corporate digital assets to reshape internal decision-making and operational processes.





Overview

Letter to Our Stakeholders
About TCC Group Holdings
Our 2025
Shaping the Future Civilization
Pillar I Financial Resilience
Pillar II Global Operations
Pillar III Climate Technology
→ **Pillar IV R&D Integration**
Pillar V ESG Advantages
Pillar VI Talent & Culture
Just Transition Plan
Special Feature – TCC 80th Anniversary
Risk Governance Enhancing
Operational Resilience
Stakeholder and Material
Topic Analysis
Sustainability Goals and Tracking
2025 Honors and Recognition
More About the Report

Governance

Carbon Reduction
Energy Transition
Employee
Nature
Social Inclusion
Appendix

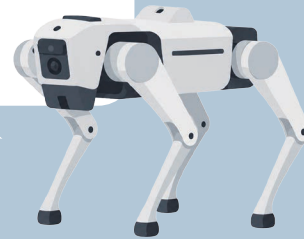
Unmanned Smart Factory

The Cement and Environmental Protection Business (Asia) builds a comprehensive smart management mechanism. TCC introduced the advanced process control (APC) system as an AI Agent to coordinate information integration across units. Jurong Plant and Yingde Plant leverage years of smart mining experience as priority implementation sites. Meanwhile, other plants install individual smart equipment systems in batches, resolving previous information barriers between smart mining and smart factories that prevented generative AI optimization suggestions from executing in real-time underlying controls.

TCC monitors key processes and occupational health and safety equipment 24/7,

detecting potential risks early and issuing real-time alerts!

Smart inspections by drones or robotic dogs!



Smart Mine

Connects data across the entire raw material quarrying process, presenting 3D visualizations of mine topography and ore distribution to optimize quarrying areas, ore ratios, and autonomous truck routes, precisely controlling materials from the source.

Optimized Raw Material Transportation

Routes: Reduces power costs for mining trucks by 78%.

Reduced Raw Meal Fluctuations: Adds an online analyzer to instantly inspect and transmit ore quality, automatically calculating the optimal ore ratio and adjusting the quarrying area.

Precise Control of Ore Resources: Drones regularly conduct point cloud scanning and mapping, reducing traditional manual mapping errors.

Smart Laboratory

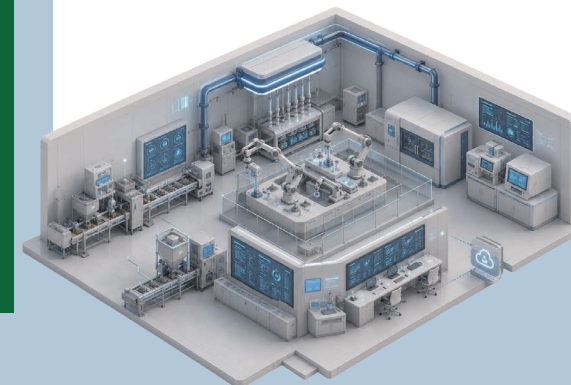
Automates sampling and analysis across the entire production line from raw materials to finished products, requiring no manual intervention, fully digitizing quality control data for subsequent big data analysis.

Enhancing Quality Control Reliability:

Eliminates manual sampling data fluctuations; automated robotic transmission significantly improves sample quality.

Shortening Inspection Cycles: Conducts high-frequency, fully automated inspections for raw meal from the mill, raw meal to the kiln, pulverized coal, and clinker.

Breaking Data Silos: Quality control data automatically uploads to the cloud for efficient multi-system collaboration.



Smart Factory

Integrates sensing data across the production line to optimize process control and preventive maintenance, driving smart manufacturing.

Optimized Operations: Advanced Process Control simulates production results in real-time at millisecond speeds to maintain safe, stable lines, proactively adjusting based on optimal Real-Time Optimization (RTO) recommendations.

Preventive Maintenance: AI identifies key component status via sensors and wireless cameras, enabling early maintenance or precise lubrication. On-site personnel wearing smart glasses can project technical drawings via voice commands and connect to experts for remote support.



Overview

- Letter to Our Stakeholders
- About TCC Group Holdings
- Our 2025
- Shaping the Future Civilization
- Pillar I Financial Resilience
- Pillar II Global Operations
- Pillar III Climate Technology
- Pillar IV R&D Integration**
- Pillar V ESG Advantages
- Pillar VI Talent & Culture
- Just Transition Plan
- Special Feature – TCC 80th Anniversary
- Risk Governance Enhancing
- Operational Resilience
- Stakeholder and Material
- Topic Analysis
- Sustainability Goals and Tracking
- 2025 Honors and Recognition
- More About the Report

Governance

- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Appendix

Human-Machine Collaboration

Master Craftsmen and Engineers at the Jurong Plant Jointly Build a Digital Mine

The Jurong Plant built TCC's first smart autonomous mine using V2X technology. Mining trucks operate fully autonomously via "one-click dispatch" for automatic tracking, unloading, and charging, achieving centimeter-level positioning and smart obstacle avoidance, with remote manual takeover for emergencies.

To capture decades of frontline tacit knowledge, the plant adopted a co-creation model between senior

employees and the AI team. Senior drivers initially served as safety officers, helping the technical team observe intervention timing to build operation and fault prediction models. Through agile development, path sensors and routes were rapidly refined.

High participation from frontline employees transformed technological anxiety into a driving force for change. This allowed the AI model to calibrate based on human judgment, transforming it into a dedicated "machine apprentice" and ensuring core on-site experiences are fully inherited across generations.



Human-Machine Collaboration

Robotic Dog Afu Smart Inspection

TCC's 2025 work partner, "Afu the robot dog," operates at the Hangzhou Gongliang Building.



Using AI visual analysis and terrain mapping, Afu navigates autonomously, uses stairs or elevators, and conducts smart inspections across offices, equipment rooms, and remote corners. It performs scheduled

nighttime inspections, shifting corporate monitoring from heavy manual reliance to real-time, precise smart tracking. TCC plans to deploy Afu to plant areas, equipped with HD cameras, infrared thermal imaging, laser rangefinders, and gas sensors to penetrate high-temperature, high-noise, and high-dust narrow spaces, allowing remote central control in real time.

AI Model Validation

Tail Coal Chute Temperature Control

Manual control

Temperature fluctuation ±30°C, adjustment lag 1-2 minutes, up to 10 adjustments per hour

VS

AI control

After comprehensively analyzing 26 parameters such as chute temperature, coal feed limits, coal injection pressure, and air temperature, it predicts and adjusts tail coal usage in advance, making rolling adjustments by the second, with temperature fluctuation of only ±10°C

COMPREHENSIVE COMPARISON

Temperature stability improved ~29%	fluctuation improved ~43%
Physical coal consumption reduced ~5.6 kg/t	



Overview

Letter to Our Stakeholders
About TCC Group Holdings
Our 2025
Shaping the Future Civilization
Pillar I Financial Resilience
Pillar II Global Operations
Pillar III Climate Technology
Pillar IV R&D Integration
Pillar V ESG Advantages
Pillar VI Talent & Culture
Just Transition Plan
Special Feature – TCC 80th Anniversary
Risk Governance Enhancing
Operational Resilience
Stakeholder and Material
Topic Analysis
Sustainability Goals and Tracking
2025 Honors and Recognition
More About the Report

Governance

Carbon Reduction
Energy Transition
Employee
Nature
Social Inclusion
Appendix

Constructs Digital Twin Management Framework

Hoping Plant, Taiwan

In February 2026, Hoping Cement Plant launched the Digital Twin project, introducing NVIDIA Omniverse for virtual-real integration, transitioning from manual to technical defense and evolving from passive monitoring to active judgment. The project focuses on equipment preventive maintenance and alternative material/fuel optimization as the core, implemented in phases, deconstructing the massive site onto a 3D digital model and visual platform.

**AI Model Validation**

Ongoing

To verify if AI can identify the most stable, energy-efficient parameters, the team focused on raw material elevator speed and feed valve angles for PID simulation tests, allowing machine learning to capture senior technicians' intuition. The team first simulated the AI-generated speed and valve combinations in a Digital Twin to test response and predictive capabilities. After confirming AI decision data is reliable, future plans involve reverse-assisting on-site equipment control, upgrading automation while digitally inheriting industrial craftsmen's wisdom.

Establishing AI Agent Ecosystem

The system uses the AI hub "IoTClaw" as its core to connect and direct the following five dedicated AI agents to automatically execute tasks:



Phase 1

Equipment Health and Early Warning Mechanism |

Rotary Kiln, Preheater Tower, and Cement Mill
AI analyzes real-time images and data from 469+ sensor data points, shedding past case-by-case system baggage. When anomalies are detected, AI proactively pushes categorized early warnings and streams real-time 3D visualizations of anomaly locations and alert statuses to assist quick human judgment.

2026/02–2026/05

Achieved Benefits:

- Data integration setup time reduced from 3 days to 1 hour, improving efficiency by 95%.
- Monitoring rule establishment reduced from 2 days to 1 hour, improving efficiency by 93%.
- Anomaly response time reduced from 60 minutes to 5 minutes, improving efficiency by 91%.
- Anomaly localization time reduced by 80%.
- Cross-departmental communication time reduced by 80%.

Phase 2

UNDER PLANNING

Optimization of Alternative Raw Materials and Fuels Ratio

In the past, quality control was mostly "post-inspection," preventing real-time production parameter adjustments. TCC plans to predict combustion efficiency and optimize calorific value during alternative fuel sampling to help increase alternative fuel usage rates.



Overview

Letter to Our Stakeholders

About TCC Group Holdings

Our 2025

Shaping the Future Civilization

Pillar I Financial Resilience

Pillar II Global Operations

Pillar III Climate Technology

Pillar IV R&D Integration

Pillar V ESG Advantages

Pillar VI Talent & Culture

Just Transition Plan

Special Feature – TCC 80th Anniversary

Risk Governance Enhancing

Operational Resilience

Stakeholder and Material

Topic Analysis

Sustainability Goals and Tracking

2025 Honors and Recognition

More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

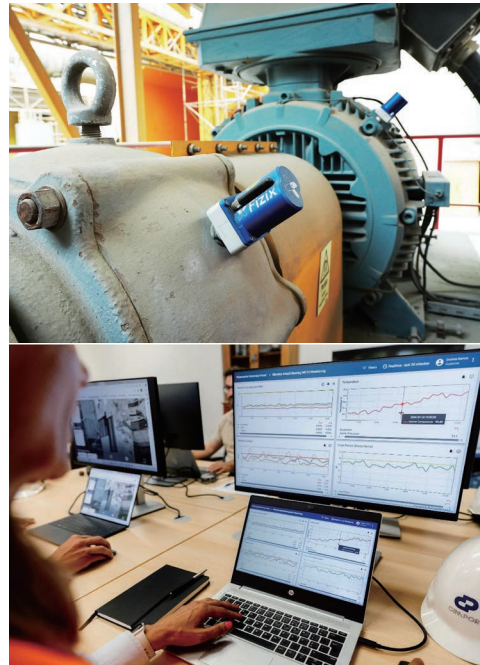
Appendix

AI Smart Equipment Inspection Portugal's First 5G IIoT Factory

Alhandra Plant, Portugal

In 2024, CIMPOR collaborated with Vodafone, Ericsson, and SAP to deploy Portugal's first site-wide 5G private network at the Alhandra Plant. Connecting all facilities, this network cuts traditional fiber cable and labor costs while offering exceptional deployment flexibility. Backed by tens of thousands of plug-and-play, long-battery FIZIX smart sensors, the plant transmits real-time vibration, temperature, noise, and magnetic flux data 24/7. Combined with smart glasses and drone inspections, AI analyzes facility conditions for preventive maintenance weeks in advance, avoiding unplanned downtime.

FIZIX sensors are active in 25 plants across six countries (Europe and Africa). As of December 2025, they have collected 1.4 trillion pieces of information across 120,000 different I/O nodes, anchoring future Digital Twin models and AI predictions.



FIZIX Smart Sensors

Sensors are wirelessly connected to collect real-time data like vibration and temperature, uploaded to a cloud system for edge computing and real-time AI analysis. This accurately identifies equipment wear and confirms anomalies for early warnings.

Smart Glasses

CIMPOR introduced the world's top three RealWear Navigator 500 AI glasses, deeply integrated with the SAP equipment maintenance system. On-site personnel use voice control to access maintenance records, operating procedures, or videos on-screen, completely freeing their hands from paper checklists. The system superimposes real-time data (e.g., temperature, vibration) on-screen, monitoring status without physical equipment checks. Connected to TeamViewer, the glasses enable remote expert connections or AI-driven operational guidance, acting as a technical assistant to improve maintenance accuracy and safety.



Drone Inspection & Wireless Cameras

CIMPOR deployed Elios 3 confined space drones and DJI Mavic 3T outdoor thermal imaging drones to inspect and measure thicknesses of rotary kilns, preheater towers, cyclones, and silos. These drones automatically cruise according to set routes and schedules.



Overview

- Letter to Our Stakeholders
- About TCC Group Holdings
- Our 2025
- Shaping the Future Civilization
- Pillar I Financial Resilience
- Pillar II Global Operations
- Pillar III Climate Technology
- Pillar IV R&D Integration**
- Pillar V ESG Advantages
- Pillar VI Talent & Culture
- Just Transition Plan
- Special Feature – TCC 80th Anniversary
- Risk Governance Enhancing
- Operational Resilience
- Stakeholder and Material
- Topic Analysis
- Sustainability Goals and Tracking
- 2025 Honors and Recognition
- More About the Report

Governance

- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Appendix

Electric Transportation

Mainland China, Portugal, and Taiwan

The cement and environmental protection business advances toward low-carbon transportation by replacing oil with electricity.

Plants in Mainland China and Taiwan's Hoping mine introduced autonomous electric mining trucks for raw material transportation with

significant benefits. In April 2024, TCC and its subsidiary Taiwan Transport deployed electric tractors for cement transport, expected to reduce transportation carbon emissions by 32%.

TCC plans to leverage this experience to create a replicable global model, expanding from Asia to Europe. TCC also leads frontline employees into

the AI era. Through job redesign and training, the mining truck driving team transitioned to dispatchers, entering a new stage of human-machine collaboration.

This reduces exposure to high-risk environments, upgrading workplace safety and digital capabilities (see [Pillar VI Talent and Culture](#)).

Introduction of Electric Mining Trucks



14 Unmanned Electric Mining Trucks
at Jurong Plant

Mainland China's First Fleet Unmanned Electric Mine
TCC utilized 5G private networks and intelligent dispatching to achieve fully unmanned processes from loading and transportation to unloading and charging, saving approximately RMB 6.12 million in fuel and labor costs annually and reducing carbon emissions by over 1,800 tCO₂e per year.

Ongoing Implementation

10 Unmanned Electric Mining Trucks
at Yingde Plant

3 Electric Mining Trucks
at Longshan Plant

3 Electric Mining Trucks
at Guigang Plant

12 Unmanned Electric Mining Trucks
at Hoping Cement Plant

Located at an altitude of over 1,000 meters in Hualien, with an estimated annual production of 5 million tons, the carbon footprint is expected to be reduced by **848 tCO₂e** annually.



CIMPOR Launches Portugal's First Electric Ready-Mix Truck, Reducing Carbon by 63%

In May 2026, CIMPOR launched Portugal's first fully electric ready-mix truck in Lisbon, featuring zero tailpipe emissions to improve metropolitan air quality. Operating with significantly lower noise than diesel vehicles, it overcomes historic city center restrictions and can operate in residential areas at night. Electric vehicles eliminate engine vibration and exhaust emissions, reducing driver fatigue and improving road safety.

CIMPOR will pair the vehicle with a digital fleet management system to improve energy cost predictions. TCC will also introduce the VOLVO FM 64RE to Taiwan; it reduces carbon emissions by 63% compared to diesel trucks and is expected to hit the road in 2026 (see [Reels](#)).



Overview

Letter to Our Stakeholders
About TCC Group Holdings
Our 2025
Shaping the Future Civilization
Pillar I Financial Resilience
Pillar II Global Operations
Pillar III Climate Technology
→ **Pillar IV R&D Integration**
Pillar V ESG Advantages
Pillar VI Talent & Culture
Just Transition Plan
Special Feature – TCC 80th Anniversary
Risk Governance Enhancing
Operational Resilience
Stakeholder and Material
Topic Analysis
Sustainability Goals and Tracking
2025 Honors and Recognition
More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

3D-Printed Buildings



In December 2025, the EU announced the European Affordable Housing Plan, requiring member states to implement inclusive housing. Faced with labor shortages and stricter environmental regulations, reducing labor reliance, shortening construction periods, and lowering costs have

become global issues. Highly efficient 3D-printed construction methods have emerged as a new solution.

CIMPOR began developing low-carbon 3D printing materials in 2024, forming a strategic partnership with Portuguese startup Havelar to lead the industry's low-carbon transition.

In this complementary model, CIMPOR provides material, engineering, market, and global resources, while Havelar focuses on R&D and product innovation. While most market equipment relies on costly proprietary ink containing only 10%-15% cement, CIMPOR optimized its formulas to develop concrete suitable for direct 3D printing. This breakthrough slashed material costs by approximately 83%, enabling commercialization.

Furthermore, the team embeds Circular Construction at the design stage to ensure 100% future recyclability. Integrating the Group's clean energy expertise, buildings are equipped with solar panels for green energy self-sufficiency.

Material selection is localized, utilizing regional resources and recycled urban renewal aggregates to develop optimized, custom building materials.





Overview

Letter to Our Stakeholders
About TCC Group Holdings
Our 2025
Shaping the Future Civilization
Pillar I Financial Resilience
Pillar II Global Operations
Pillar III Climate Technology
→ **Pillar IV R&D Integration**
Pillar V ESG Advantages
Pillar VI Talent & Culture
Just Transition Plan
Special Feature – TCC 80th Anniversary
Risk Governance Enhancing
Operational Resilience
Stakeholder and Material
Topic Analysis
Sustainability Goals and Tracking
2025 Honors and Recognition
More About the Report

Governance

Carbon Reduction
Energy Transition
Employee
Nature
Social Inclusion
Appendix



Technological Foundation

The central laboratory collaborated with academic institutions to develop 3D concrete printing, completing a standard mortar formula that complies with the European standard EN 1015 Methods of Test for Mortar for Masonry.

The Alhandra Plant installed large-scale 3D printing equipment to develop low-carbon slurry combining calcined clay, slag, white cement, and recycled construction materials.

Natural cork is an iconic, local resource of Portugal. CIMPOR has incorporated it into 3D printing materials as a bio-based filler, balancing lightweighting, thermal insulation, and acoustic performance, while reducing mineral consumption and lowering carbon footprints. Because harvesting cork requires no tree felling—as the bark regenerates naturally and cork oak forests

continuously sequester carbon—this initiative demonstrates a development model that

drives low-carbon innovation through local natural capital.



Comprehensive Promotion

Supplying 3D-Printed Low-Carbon Concrete

—
32 Social Housing Units
in Portugal

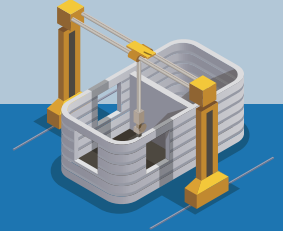
Participating in Europe's Largest 3D Printing Construction Project

—
53 Buildings
in Alfena, Portugal

Building Smart Green Housing with 3D Printing

—
Post-Disaster Reconstruction
in Hatay Türkiye

Türkiye COP31 **Green Key Project**



OYAK Cement 3D Printing Next-Generation Low-Carbon Construction Method

Key Project for the COP 31
Climate Summit



To assist Hatay Province's reconstruction following the 2023 Türkiye earthquake, OYAK Cement partnered with the provincial government to build 20 resettlement apartments and a community library using 3D printing. The project creates smart green housing with self-generated solar power and self-sufficient water, utilizing recycled materials from C&D waste and employing efficient, zero-waste methods to assist the green living transition. As one of the key green projects of COP 31, this initiative highlights TCC's global contributions to sustainability through low-carbon technologies.



Overview

- Letter to Our Stakeholders
- About TCC Group Holdings
- Our 2025
- Shaping the Future Civilization
- Pillar I Financial Resilience
- Pillar II Global Operations
- Pillar III Climate Technology
- Pillar IV R&D Integration**
- Pillar V ESG Advantages
- Pillar VI Talent & Culture
- Just Transition Plan
- Special Feature – TCC 80th Anniversary
- Risk Governance Enhancing
- Operational Resilience
- Stakeholder and Material
- Topic Analysis
- Sustainability Goals and Tracking
- 2025 Honors and Recognition
- More About the Report

Governance

- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Appendix

Alternative Fuel Process Improvement

Portugal and Taiwan

The cement and environmental protection business uses alternative fuels as one of its main net zero strategies. TCC implements process improvements across plants to expand the use of alternative fuels, enhance combustion efficiency, and reduce rotary kiln operational fluctuations.

Suao Plant Introduced Oxygen Enriched Combustion

Reducing Annual Carbon Emissions by 5,358 tCO₂e

Alternative fuels are prone to incomplete combustion, generating carbon monoxide, which causes kiln fluctuations and increases heat consumption. Suao Plant invested in an oxygen-enriched combustion system in 2025, increasing combustion efficiency by 22% and reducing carbon monoxide to stabilize kilns and increase alternative fuel usage. In 2025, this system reduced carbon emissions by 5,358 tCO₂e and cut average daily coal consumption by approximately 11.8 tons.



Alhandra Decarbonization Upgrade

One of the Representative Industry Cases in the EU

CIMPOR secured Next Generation EU funding, investing 87.68 million euros for a large-scale technical upgrade of Kiln 7 at the Alhandra Plant. The thermal substitution rate (TSR) increased from 40% to 80%, carbon emission intensity dropped from 790 to 698 kg/ton of clinker, and production capacity rose from 3,100 to 3,600 ton/day.

Upgraded raw mills to VRM (vertical raw mill) to efficiently process high-moisture, complex alternative raw materials, stabilizing raw meal quality.	Reconfigured kiln gas circuits and expanded calciner volume to extend alternative fuel residence and combustion times.	Optimized cooler systems to recover high-temperature gas for the kiln and calciner, reducing energy use.
Added pre-combustion space to extend burning time, ensuring complete combustion of large alternative fuel particles to maximize thermal energy.	Installed chlorine bypass systems to discharge salts, preventing process interference with kiln operations.	Added indoor alternative fuel storage silos to minimize spontaneous combustion risks.

For more information on alternative fuels, please refer to [CH 2.2](#).

Thermal Substitution Rate (TSR)
Reach Over **80%**

Improves Thermal Energy Efficiency by **2%**
Reduces Power Consumption by **10%**



Reduces **carbon emissions**
by up to (annually)
200,000 tCO₂e



Overview

Letter to Our Stakeholders
About TCC Group Holdings
Our 2025
Shaping the Future Civilization
Pillar I Financial Resilience
Pillar II Global Operations
Pillar III Climate Technology
Pillar IV R&D Integration
Pillar V ESG Advantages
Pillar VI Talent & Culture
Just Transition Plan
Special Feature – TCC 80th Anniversary
Risk Governance Enhancing
Operational Resilience
Stakeholder and Material
Topic Analysis
Sustainability Goals and Tracking
2025 Honors and Recognition
More About the Report

Governance

Carbon Reduction
Energy Transition
Employee
Nature
Social Inclusion
Appendix

X-Clinker Full Electrification of Novel Clinker Production

Alhandra Plant, Portugal

Operating in the EU's competitive low-carbon materials market under strict carbon regulations, CIMPOR directly joins multinational peer R&D projects. It serves as TCC's model plant for deploying next-gen technologies across Europe, Asia, and Africa, pioneering hydrogen energy and green electricity calcination for net-zero transition.



CIMPOR's new-generation low-carbon material, X-Clinker, adopts an Electrified Process, reducing carbon emissions by nearly 400 kg/ton of clinker. Engineering design for the semi-industrial demonstration plant is complete.

It has potential to produce low-carbon white clinker and cement for high-end materials like UHPC. TCC is currently applying for the EU Innovation Fund to support technical verification. The melting process of raw materials to produce the new clinker type will be fully electrified (100% green electricity). The calcination process plans to introduce 100% green electricity. The gas released during high-temperature calcination has a CO₂ purity over 90%, significantly eliminating preliminary carbon capture costs and reducing traditional chemical scrubbing.

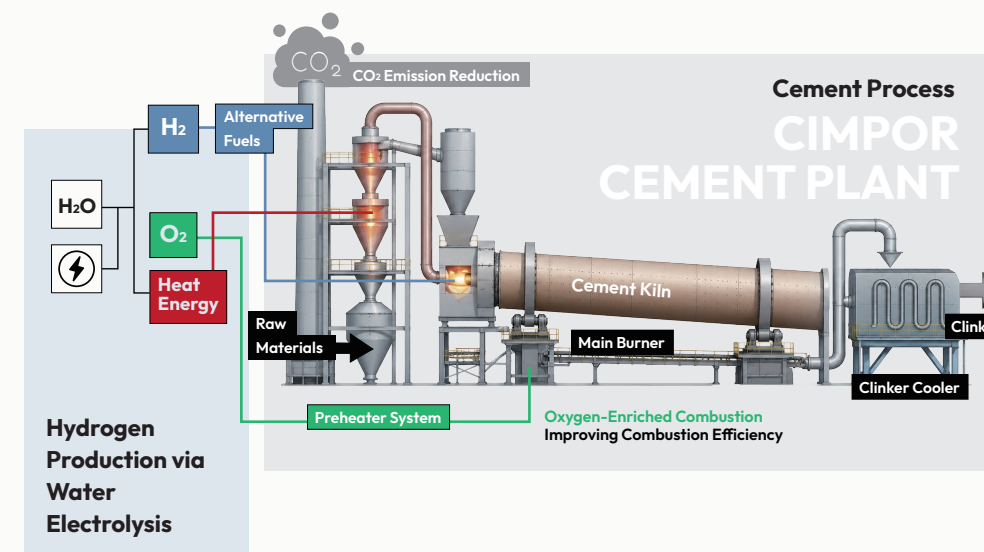
X-Clinker
Reduces CO₂ Emissions **~48%**
Compared to Traditional OPC Clinker

Introducing Hydrogen to Reduce Petcoke Consumption

Souselas Plant, Portugal

CIMPOR plans to introduce water electrolysis for green hydrogen production for cement manufacturing, utilizing hydrogen as an energy vector and alternative fuels. Oxygen from electrolysis can be used, in the future, for oxygen-enriched combustion to improve kiln efficiency. The Souselas Plant starting the installation of a 10 MW electrolyzer in 2025 to produce green hydrogen. Considering global energy fluctuations and high electricity prices, TCC plans to have the flexibility to quickly switch from one fuel to

another and co-fire some amounts of natural gas and hydrogen together with other alternative fuels, whenever feasible, profiting from gradual decarbonization of natural gas grid. It completed the natural gas pipeline connection in 2025 and expects operations in 2026. Additionally, this green hydrogen can be used as raw material to be combined with manufacturing carbon emissions to produce e-fuels (e.g., aviation fuel, methanol) for transportation and chemical industries, forming a cross-industry carbon cycle.





Overview

- Letter to Our Stakeholders
- About TCC Group Holdings
- Our 2025
- Shaping the Future Civilization
- Pillar I Financial Resilience
- Pillar II Global Operations
- Pillar III Climate Technology
- Pillar IV R&D Integration
- Pillar V ESG Advantages**
- Pillar VI Talent & Culture
- Just Transition Plan
- Special Feature – TCC 80th Anniversary
- Risk Governance Enhancing
- Operational Resilience
- Stakeholder and Material
- Topic Analysis
- Sustainability Goals and Tracking
- 2025 Honors and Recognition
- More About the Report

Governance

- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Appendix



Pillar V — ESG Advantages



SBT
Carbon Reduction
Targets Towards
2050 Net Zero

TCC set its SBT in 2020 as East Asia's first SBTi- validated cement company. In January 2025, Cement and Environmental Protection Business passed the 1.5°C validation and committed to 2050 Net-Zero. In March 2026, TCC submitted group-wide, consolidated net zero targets for SBTi validation, while Charging and Storage Business (Europe) completed near-term 1.5°C target setting.

TCC Group Holdings

Currently submitting for official validation in 2026/03

2050 Net Zero Target

-90%

Total Scope 1, 2, and 3 Emissions

Total Emissions of 15 Scope 3 Categories

Cement and Environmental Protection Business¹

Scope	Unit	Base Year Value	2024	2025	2030
Cement and Environmental Protection (Asia)					
Scope 1 ²	kg CO ₂ e/t Cementitious Materials	2016: 724	642	637	-23.9%
Scope 2 ²	kg CO ₂ e/t Cementitious Materials	2016: 30	25	26	-64.4%
Scope 3 ³	tCO ₂ e	NA	NA	2,457,018	NA
CIMPOR					
Scope 1	kg CO ₂ e/t Cementitious Materials	2022: 659	662	632	-19.5%
Scope 2	kg CO ₂ e/t Cementitious Materials	2022: 28	24	15	-55.7%
Scope 3 ⁴	tCO ₂ e	NA	482,490	1,068,531	NA
OYAK Cement					
Scope 1	kg CO ₂ e/t Cementitious Materials	2021: 740	672	640	-20.5%
Scope 2	kg CO ₂ e/t Cementitious Materials	2021: 49	42	41	-56.3%
Scope 3 ⁴	tCO ₂ e	2021: 3,059,619	1,802,816	1,884,152	NA

Charging and Storage Business (Europe)

Scope	Unit	Base Year Value	2025	2030
NHOA Energy				
Scope 1 + 2	tCO ₂ e	2024: 253	122	Absolute emissions reduced by 42%
Scope 3 ⁵	tCO ₂ e / per battery cell installed	2024: 0.05	0.10	C11 Use of Sold Products carbon emission intensity reduced by 51.6% per battery cell installed
Scope 3	-	84%	87%	C1 Purchased Goods and Services 86% of suppliers by emissions to set SBT by 2029
Atlante (Under the SME pathway)				
Scope 1+2	tCO ₂ e	2024: 159	120	Absolute emissions reduced by 42%

Note 1: Targets are set via SBTi methodology as gross GHG emissions per ton of cementitious product. Scope 2 uses market-based method.

Note 2: Scope 1 & 2 targets for Cement and Environmental Protection (Asia) cover Taiwan and Mainland China plants, excluding Longshan and Liaoning plants, RMC plants, and grinding stations due to operational factors.

Note 3: 2025 Scope 3 emission boundary for Cement and Environmental Protection (Asia) covers Taiwan and Mainland China cement plants (including Longshan and Liaoning plants), RMC plants, and grinding stations; submitted for SBTi validation in March 2026.

Note 4: CIMPOR's SBT target boundary covers cement plants and grinding plants in Portugal. Its 2024 Scope 3 inventory covered Portugal cement plants, expanding in 2025 to RMC, aggregate, dry mortar, and paper bag plants. OYAK Cement's Scope 3 emissions increased as its Denizli limestone plant (commissioned in 2024) reached full operation in 2025.

Note 5: Scope 2 emissions are calculated using the market-based method.

Note 6: Driven by global energy storage expansion and evolving project configurations, Scope 3 Category 11 emissions increased in 2025. Associated emissions are primarily dictated by the technology of procured battery cells; anticipated improvements in supplier cell efficiency in the coming years will support progress toward the 2030 decarbonization target.



Overview

- Letter to Our Stakeholders
- About TCC Group Holdings
- Our 2025
- Shaping the Future Civilization
- Pillar I Financial Resilience
- Pillar II Global Operations
- Pillar III Climate Technology
- Pillar IV R&D Integration
- Pillar V ESG Advantages**
- Pillar VI Talent & Culture
- Just Transition Plan
- Special Feature – TCC 80th Anniversary
- Risk Governance Enhancing
- Operational Resilience
- Stakeholder and Material
- Topic Analysis
- Sustainability Goals and Tracking
- 2025 Honors and Recognition
- More About the Report

Governance

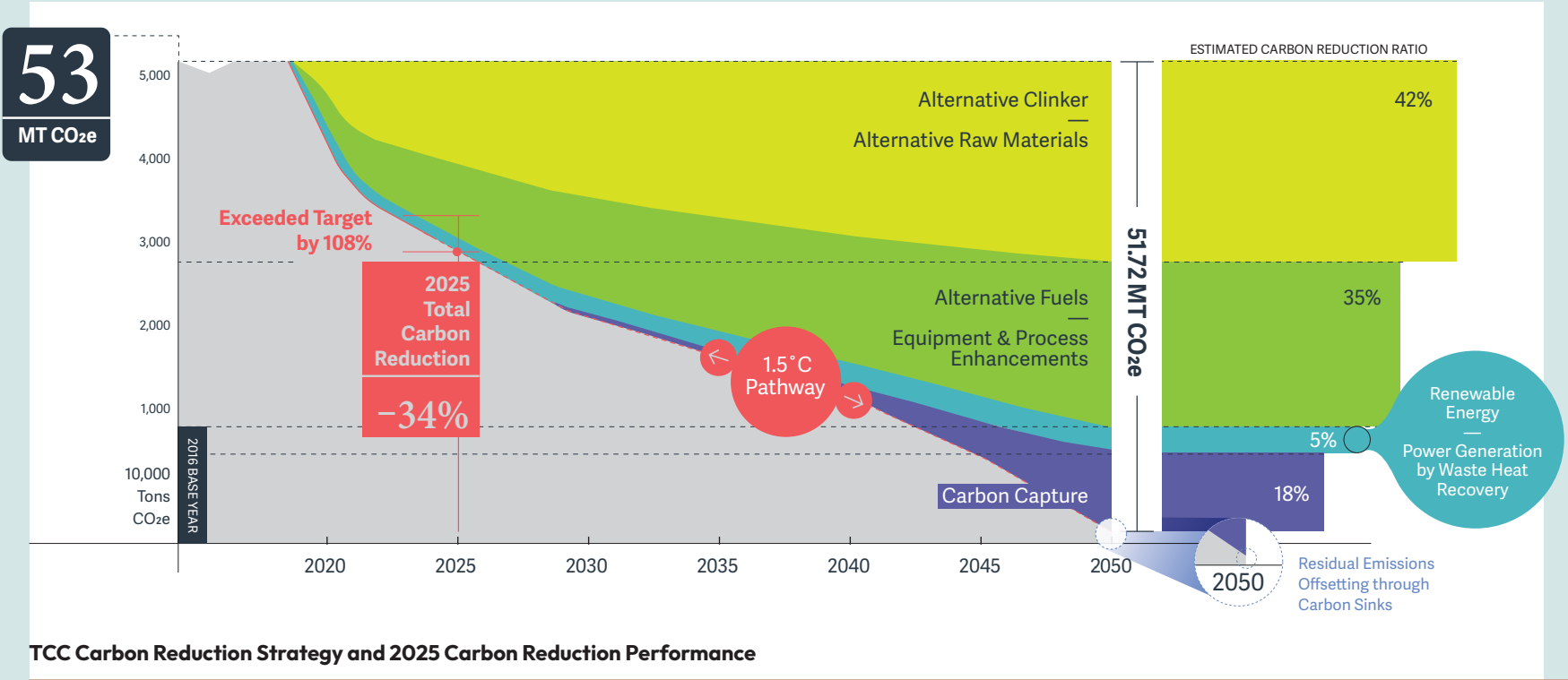
- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Appendix

Cement and Environmental Protection Business Net Zero Pathway

Contributing over 80% of emissions and 70% of revenue, Cement and Environmental Protection Business is TCC's decarbonization core. In 2024, TCC launched "2050 Cement and Environmental Protection Business Net Zero Pathway," covering

all sites in Taiwan, Mainland China, CIMPOR, and OYAK Cement. Aligned with SBTi 1.5°C methodology, ISO IWA 42 Net Zero Guidelines, and IEA's Net Zero Pathway and World Energy Outlook report, key strategies include alternative

clinker/raw materials/fuels, waste heat recovery, process enhancements, renewable energy and carbon capture, with natural carbon sinks for carbon removal. TCC will extend this net-zero planning group-wide in 2026.



TCC Carbon Reduction Strategy and 2025 Carbon Reduction Performance

Carbon Reduction Strategy	Corresponding Scope	Carbon Reduction Amount (Unit: tCO ₂ e)	Contribution to Carbon Reduction
Alternative Raw Materials & Alternative Clinker	Scope 1	10.47 million	58%
Alternative Fuels	Scope 1 & Process Enhancements	6.75 million	37%
Renewable Energy & Power Generation by Waste Heat Recovery & Other Energy-Saving Measures	Scope 2	0.97 million	5%
Total		18.19 million	100%

Hoping & Suao: Taiwan's Only Two Cement Plants Obtaining Best Rates of Carbon Fees

With Taiwan launching carbon fees in May 2026, Hoping and Suao Plants formulated voluntary reduction plans based on SBT, which were approved under Option A by the Ministry of Environment—the only cement industry in Taiwan to qualify. This enables the application of a high carbon leakage risk factor of 0.2. The carbon fee is calculated at the most favorable rate of NT\$10/ton, saving significant costs compared to the general rate of NT\$300/ton.

Meanwhile, E-One Moli Corporation passed voluntary reduction Plan B at NT\$100/ton.

Note 7: Carbon offset feasibility will be evaluated based on net zero progress and domestic/international technological developments. This includes applying future captured CO₂ for carbon credits per government policies, or purchasing certified high-quality external carbon credits.



Overview

- Letter to Our Stakeholders
- About TCC Group Holdings
- Our 2025
- Shaping the Future Civilization
- Pillar I Financial Resilience
- Pillar II Global Operations
- Pillar III Climate Technology
- Pillar IV R&D Integration
- Pillar V ESG Advantages**
- Pillar VI Talent & Culture
- Just Transition Plan
- Special Feature – TCC 80th Anniversary
- Risk Governance Enhancing
- Operational Resilience
- Stakeholder and Material
- Topic Analysis
- Sustainability Goals and Tracking
- 2025 Honors and Recognition
- More About the Report

Governance

- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Appendix

External Carbon Reduction Impact

The WBCSD states that absolute carbon reduction in Scope 1, 2, and 3 is the top priority for enterprises.

Beyond "Do Less Harm," businesses must offer climate solutions to "Do More Good." TCC pairs decarbonization with sustainable products and services, driving business growth while generating avoided emissions for external clients and society.

Beyond self-reduction, TCC drives its value chain toward net zero to offer climate solutions with high carbon reduction impact. Prioritizing Cement and

Environmental Protection Business (Asia), cement plants, product plants, grinding stations, and offices in Taiwan and Mainland China completed 15 Scope 3

verifications across 2023–2024. TCC also empowers suppliers, successfully engaging Guigang Plant transportation to switch to electric trucks. (See [CH 2.3](#))

Business Group					
Cement and Environmental Protection Business		Battery Energy Business		Charging and Storage Business	
Category					
Low-carbon Construction Materials		Resource Recycling		GREEN ENERGY Renewable Energy Generation	
	2025		2025		2025
	-1.002 million		-95,000		-61,000
2030 TARGETS		2030 TARGETS		2030 TARGETS	
-1.69 million		-530,000		-320,000	
					



Overview

Letter to Our Stakeholders
About TCC Group Holdings
Our 2025
Shaping the Future Civilization
Pillar I Financial Resilience
Pillar II Global Operations
Pillar III Climate Technology
Pillar IV R&D Integration
→ **Pillar V ESG Advantages**
Pillar VI Talent & Culture
Just Transition Plan
Special Feature – TCC 80th Anniversary
Risk Governance Enhancing
Operational Resilience
Stakeholder and Material
Topic Analysis
Sustainability Goals and Tracking
2025 Honors and Recognition
More About the Report

Governance

Carbon Reduction
Energy Transition
Employee
Nature
Social Inclusion
Appendix

Biodiversity

“
Biodiversity considerations need to be better integrated into public and business decision-making at all levels.

— European Commission, "EU Biodiversity Strategy for 2030"

Climate change and biodiversity loss are already a dual crisis for global. TCC integrates nature into net zero strategy. Through natural capital management, ecological surveys, quarry restoration, habitat conservation, and soil research, TCC aligns with Kunming-Montreal Global Biodiversity Framework and global "30x30 target".

Multi-Source Satellite Data Integration: Forest Observation from Space

TCC launched the "Global Quarry Carbon Stock Project" in 2026, partnering with CoCoTree Technology, the project establishes a multi-source satellite data foundation by pairing primary Sentinel-2 optical data with cloud-penetrating ESA Biomass radar to characterize forest structure.



ESA Sentinel-2 Multispectral Satellite Imagery

Sentinel-2's 10-meter resolution and 13 spectral bands enable forest canopy monitoring and support scalable, cross-continental applications.

ESA Biomass Radar Satellite Data

The Biomass satellite penetrates clouds and canopies to map forest structure and biomass, enhancing carbon stock estimation reliability.



NASA GEDI:

A globally adopted spaceborne LiDAR dataset providing a high-precision reference for global forest aboveground biomass estimation.

AI Deep Learning Modeling

The core model is based on Convolutional Neural Networks (CNN), transforming images into carbon stock estimates through four stages:

1

Forest structural feature extraction:

Extracts forest structural features, including canopy height, variability, and vegetation index from Sentinel-2 images to build a canopy height model.

2

AI model training:

Combines forest structural features with the NASA Global Ecosystem Dynamics Investigation (GEDl) dataset for training, developing a model that infers above-ground carbon stock density from Sentinel-2 optical data.

3

Carbon stock estimation:

Uses 2026 satellite imagery to extract forest structural features from quarry and applies the trained model to estimate carbon stock.

4

Using Hualien's Hoping Cement Plant plot data as ground truth:

This project calibrates satellite estimates with field measurements. TCC plans third-party carbon credit verification in 2027, aiming to scale this method to all quarries for more efficient global carbon sink monitoring.

Cross-Continental Terrain and Climate Challenges

TCC's operations span highly diverse landscapes, from rainforests to deserts and steep mountains to limestone plateaus. To adapt, the AI model integrates geographic encoding, multi-satellite data, and ground calibration during preprocessing, building a robust carbon stock estimation system for any environment.



CIMPOR Areeiro do Camarnal (Alhandra) Quarry

The purple area represents carbon stock within the quarry.

Overview

Letter to Our Stakeholders
 About TCC Group Holdings
 Our 2025
 Shaping the Future Civilization
 Pillar I Financial Resilience
 Pillar II Global Operations
 Pillar III Climate Technology
 Pillar IV R&D Integration
Pillar V ESG Advantages
 Pillar VI Talent & Culture
 Just Transition Plan
 Special Feature – TCC 80th Anniversary
 Risk Governance Enhancing
 Operational Resilience
 Stakeholder and Material
 Topic Analysis
 Sustainability Goals and Tracking
 2025 Honors and Recognition
 More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

TCC Nature Action

Taiwan's First Marine OECMs Wild Coral Ecological Habitat at Hoping EcoPort

“When people think of industrial zones, they think of cement and cargo ships; but we see corals, fish, and restoration.”

Located within Hoping 3-in-1 of Port, Power, Cement Plant, Hoping EcoPort uses strict controls and rock revetments to keep harbor waters clear. To accelerate coral growth, TCC deploys low-carbon cement Bio-cubes to anchor fragments and seedlings, fostering a thriving marine ecosystem and proving that 'atypical conservation' can successfully balance industry with biodiversity.

Hoping Ark Ecological Program 2.0 — Soil Remediation Experimental Research

Although soil nurtures 95% of global food, 75% of global land is already degraded, with this figure projected to reach 90% by 2050 (EU). To address this, TCC partnered with the Dr. Cecilia Koo Botanic Conservation Center (KBCC), academia, and schools on the Hoping Ark Ecological Program 2.0. Through native ethnobotanical restoration and soil experimental zones, the initiative researches acidification solutions to enhance land resilience and ecological value.

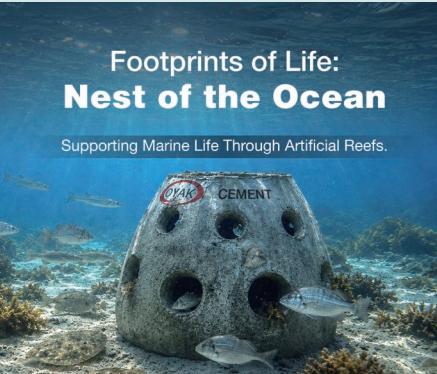
Leave a Safe Home for the Guest from the South — Little Tern! TCC Little Tern Conservation and Incubation Project

Migrating from the Southern Hemisphere, Little Terns first nested outside Hoping Power Plant, the northernmost estuary of the Hoping Low-carbon Green Energy Park in 2024. By 2025, active nests on this beach surpassed 100 with hatching chicks. To safeguard this habitat, TCC and its suppliers established the 'Little Tern Conservation Patrol' for autonomous management.



OYAK Cement Artificial Reef Project

Located by the scenic Sea of Marmara in Türkiye, OYAK Cement's Aslan Plant utilizes artificial reefs to restore marine ecology. These reefs provide vital spaces for marine organisms to inhabit, breed, and shelter from predators.



CIMPOR Quarry Bonelli's Eagle Conservation

To protect threatened Bonelli's Eagles nesting in its Alhandra Plant quarry in Lisbon, CIMPOR joined the EU LIFE LxAquila project in 2025, partnering with SPEA. This cross-sector initiative advances biodiversity conservation, showcasing CIMPOR's active dedication to endangered species protection.



For more information, see [CH.5](#)



Overview

- Letter to Our Stakeholders
- About TCC Group Holdings
- Our 2025
- Shaping the Future Civilization
- Pillar I Financial Resilience
- Pillar II Global Operations
- Pillar III Climate Technology
- Pillar IV R&D Integration
- Pillar V ESG Advantages
- Pillar VI Talent & Culture**
- Just Transition Plan
- Special Feature – TCC 80th Anniversary
- Risk Governance Enhancing
- Operational Resilience
- Stakeholder and Material
- Topic Analysis
- Sustainability Goals and Tracking
- 2025 Honors and Recognition
- More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix



Pillar VI — Talent & Culture

All-Staff
AI Action Year

Spanning diverse industries across Asia, Europe, and Africa, TCC faces a profound transition. Chairman Chang emphasizes three essential anchors for industrial pioneers: a clear mind, a conscience prioritizing integrity over efficiency, and courage in uncertainty.

In 2026, TCC launches the "All-Staff AI Action Year: AI Pilot Program," encouraging employees to integrate AI into daily workflows, operations, and customer service, building a shared resource pool for collective transformation.

Interactive Learning

To drive synergies in a volatile market, TCC bridges European advancements in AI, low-carbon technologies, and regulations with Asian practices in biodiversity and community engagement. These regular cross-border exchanges expand global perspectives, serving as a powerful catalyst for internal innovation.

AI Empowerment Courses

In 2026, TCC Carbon Academy becomes the Institute of NextGen Sustainability, introducing AI empowerment courses. Renowned generative AI experts will conduct on-site classes at the plants. This training is being rolled out across production sites in Taiwan and Mainland China, ensuring frontline teams keep pace with digital transformation. Details in [CH 4.2](#).

AI Internal Proposal Competition

Departments propose tailored AI solutions, personally evaluated and prioritized by the Chairman and the TCCI team. Replicable projects are upgraded to cross-departmental initiatives. Upon approval, the TCCI AI team provides technical support for collaborative or autonomous development. System-integrated projects undergo strict internal controls and cybersecurity checks to ensure safe, rapid deployment.

CIMMY and
Regulation Navigator

TCC's Regulation Navigator AI chatbot provides instant guidance on leave, travel, or overtime. Following beta testing, the tool will launch

in June 2026 to simplify administrative tasks and foster a smarter workplace. To boost decision-making, CIMPOR's Cimmy chatbot, powered by Aura (Autonomous Understanding Rapid Analytics), analyzes massive internal data in seconds to generate real-time insights, charts, and predictions:

Smart Scheduling & Material
Management:

Generates sales charts, Tracks sales, receipts, and license plates to optimize supply chain flow.

Smart Transportation Efficiency:
Calculates fleet efficiency and trip counts while sending proactive anomaly alerts for highly efficient logistics.

Data-Driven Capacity Prediction:
Uses gradient boosting algorithms to predict delivery volumes for strategic planning.





Overview

Letter to Our Stakeholders

About TCC Group Holdings

Our 2025

Shaping the Future Civilization

Pillar I Financial Resilience

Pillar II Global Operations

Pillar III Climate Technology

Pillar IV R&D Integration

Pillar V ESG Advantages

Pillar VI Talent & Culture

Just Transition Plan

Special Feature – TCC 80th Anniversary

Risk Governance Enhancing

Operational Resilience

Stakeholder and Material

Topic Analysis

Sustainability Goals and Tracking

2025 Honors and Recognition

More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Just Transition Plan — People-Centricity and Co-Prosperity

An Equal Collective Evolution with Employees, Communities, and Supply Chain Partners

For TCC, the Dual Net-Zero and Digital Transition is a shared journey rather than a cold technological replacement. Instead of a sunny-day hike following a map, it is a march through reality's storms, adjusting and solving problems along the way. Trust is the cornerstone of sustainability, and true transition is an equal, collective evolution empowering every employee and neighbor to walk alongside us.

Through internal workshops, TCC mapped stakeholders, identifying employees, local communities, suppliers, and consumers as the primary groups, and launched targeted strategies to help them navigate these challenges.

Reskilling and Career Transition

TCC drives dynamic reskilling and career transition rather than a one-size-fits-all approach. Supervisors evaluate employees individually to arrange tailored training and transfers. TCC prioritizes workplace improvements and support over financial compensation, fully funding any required certifications.



AI Electric Trucks: Redefining Mining Talent

In 2022, TCC introduced the cement industry's first autonomous electric mining truck system at Jurong Plant in Mainland China, automating logistics. Later expanded to Yingde Plant as a replicable "companion training" model, this technology launched at Hualien Heping Quarry in November 2025 as Taiwan's first autonomous mining site. Following training, senior drivers transitioned to intelligent operators or road roller specialists. A colleague from the Truku tribe gestured with a smile: "Now we use a keyboard and mouse to set routes. The trucks have AI eyes and see the road themselves."

Empowering Employees and Local Communities

Since 2024, TCC Carbon Academy has offered flexible online and offline courses for shift workers, achieving an 89% "just transition" course pass rate in 2025. In 2026, it becomes the Institute of NextGen Sustainability, adding AI courses and on-site training across Taiwan and Mainland China so frontline employees keep pace with the transition. More details in [CH4.1](#).

AI Empowerment Initiative Promoting Local Digital Inclusion

TCC's AI Future Empowerment Initiative brought generative AI, drone operations, and quarry visits to He-Ping and Dong'ao elementary schools. Over the summer, the program expanded to Heping and Aohua villages, helping mothers and elders master mobile AI to bridge the digital divide, while enabling middle-aged residents to boost workplace skills.



TCC KEY FACTS

100% course satisfaction

Enhanced AI literacy

73% aspire to work
in their hometowns



Overview

Letter to Our Stakeholders
About TCC Group Holdings
Our 2025

Shaping the Future Civilization

Pillar I Financial Resilience

Pillar II Global Operations

Pillar III Climate Technology

Pillar IV R&D Integration

Pillar V ESG Advantages

Pillar VI Talent & Culture

Just Transition Plan

Special Feature – TCC 80th Anniversary

Risk Governance Enhancing

Operational Resilience

Stakeholder and Material

Topic Analysis

Sustainability Goals and Tracking

2025 Honors and Recognition

More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Local Inclusion and Community Engagement

For TCC, trust is the starting point of all actions.

Through household visits and open factory practices, TCC gradually rebuilds relationships with surrounding tribes from "unfamiliar neighbors" into true partners.

DAKA Inclusive Space Creating Diverse Employment Opportunities

The DAKA open ecological circular factory is open 24 hours a day and operates on a non-profit basis. The market supports tribal residents' entrepreneurship with low-cost stalls, driving a 2.5% increase in the local non-manufacturing employment rate.

Women account for approximately 80% of the DAKA operations team. Among the 18 members of the environmental resources team responsible for resource recycling, there are 9 women, 14 indigenous people, and 17 local residents. Some tribal women obtained their first formal jobs through DAKA, while other female colleagues, for their families, entered new shift units on-site and further obtained occupational health and safety certifications.



Aquavoltaics: Green Energy, Low-Carbon Seafood, and Local Co-Prosperity

TCC Green Energy Corp. integrated aquaculture with solar power at its Chiayi site, forming a dedicated team to collaborate with local farmers. In Q4 2025, TCC's self-managed ponds yielded a bumper harvest of sea bass and milkfish exceeding 9.6 tons. The project also secured Chiayi County's first traceability certification for aquavoltaic aquacultuzre.

“ Solar panels do more than generate power. They enable our corporate culture to transform electricity into humanistic care, driving community green care and empowering local young farmers.



Walk in Taiwan:
Light-Seeking Journey

Moving Forward with Supply Chain Partners

As an industry enabler, TCC drives transition alongside its partners. Since 2023, TCC has hosted regular GHG inventory workshops for suppliers. In 2024, it formed the Green Value Chain Alliance, uniting suppliers representing 37% of procurement value to jointly commit to a 10% carbon reduction by 2030. Downstream, the Low-Carbon Construction Pioneers Alliance has expanded to 242 builders and contractors, deploying low-carbon materials across nearly 3,000 project sites.

Just transition is a continuous learning journey with no universal formula. Instead of transplanting a single system, TCC prioritizes local cultures. Through transnational Town Hall and annual meetings, TCC fosters cultural dialogue, allowing the transition to take root in every community while respecting differences.



Overview

Letter to Our Stakeholders

About TCC Group Holdings

Our 2025

Shaping the Future Civilization

Pillar I Financial Resilience

Pillar II Global Operations

Pillar III Climate Technology

Pillar IV R&D Integration

Pillar V ESG Advantages

Pillar VI Talent & Culture

Just Transition Plan

Special Feature – TCC 80th Anniversary

Risk Governance Enhancing

Operational Resilience

Stakeholder and Material

Topic Analysis

Sustainability Goals and Tracking

2025 Honors and Recognition

More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Special Feature – TCC 80th Anniversary

"Shaping the Future Civilization" Special Exhibition

Deepening Communication and Engagement with Society through Corporate Leaders' Voices, Public Exhibitions, and Regular Activities

As TCC approaches its 80th anniversary in 2026, it centers on "Shaping the Future Civilization." This is not a single celebration but a series of actions with stakeholder engagement at its core. Through celebrations, speeches by corporate leaders, immersive public exhibitions, and a series of follow-up activities, TCC continues to articulate its

definition of "civilization" and its next-stage low-carbon transition tasks to society, continuing the spirit of "strengthening dialogue between industry and society" rooted in its open factory concept.

“ Eighty years ago, standing on the ruins of the post-war era, our predecessors used stone as their pen and the earth as their paper to write the first line of modern industrial civilization.

Eighty years later, we deeply understand that only by crossing boundaries can we shape the weight of civilization on a broader map.

Starting from the island, we connect with the world, and in every latitude and longitude, we shape the future civilization.

— Chairman
Nelson An-ping Chang





Overview

- Letter to Our Stakeholders
- About TCC Group Holdings
- Our 2025
- Shaping the Future Civilization
- Pillar I Financial Resilience
- Pillar II Global Operations
- Pillar III Climate Technology
- Pillar IV R&D Integration
- Pillar V ESG Advantages
- Pillar VI Talent & Culture
- Just Transition Plan
- Special Feature – TCC 80th Anniversary
- Risk Governance Enhancing
- Operational Resilience
- Stakeholder and Material
- Topic Analysis
- Sustainability Goals and Tracking
- 2025 Honors and Recognition
- More About the Report

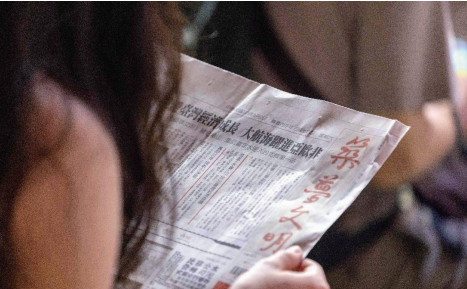
Governance

- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Appendix

Corporate Leaders' Voices:
Defining "Civilization" and
Next-Stage Tasks

In the 80th-anniversary series, TCC Chairman Nelson An-ping Chang has repeatedly articulated, across various occasions, TCC 's understanding of "civilization" and its next-stage tasks: civilization always needs a foundation—roads, cities, clean and stable energy, waste treatment, and the land where humans can settle—and what TCC protects is exactly this foundation. In the future, TCC will no longer measure itself by "how many tons of cement sold," but will focus on the value it creates for customers and the new models it opens up for the industry.

This messaging has since extended from the celebrations to talent-recruitment events and governance forums such as the Taiwan Institute of Directors annual meeting, showing that this is an ongoing effort to communicate with society rather than a one-time corporate celebration.



Cross-Generational, Cross-National, and
Inclusive Stage Appearance

Another anniversary highlight saw TCC bring employee representatives across generations, nationalities, and industries onto the stage together. Drawn from Europe, Asia, and Africa, they showcased TCC as a global team and embodied a culture of cross-generational inclusion and shared commitment to its transformation.

Supporting the Narrative with Concrete Results

TCC's communication goes beyond vision, backed by results already delivered or under way. For its 80th anniversary, it unveiled the global cement industry's first AI-driven autonomous electric quarry trucks: at the Hoping plant in Hualien—the first site in Taiwan to adopt them fully, 12 trucks now run on electricity instead of diesel, cutting an estimated 848 tons of carbon and 78% of power costs a year. TCC also showcased other low-carbon applications: 3D-printed green housing built from recycled construction waste to power self-sufficient renewable energy in earthquake-hit Türkiye; the EnergyArk® cement energy-storage system; a high-strength 10,000-psi "A-Fluire" self-leveling

mortar; and electric ready-mix trucks rolling out in Taiwan and Portugal. Together, these give the "Shaping the Future Civilization" narrative verifiable substance.

Keeping the Dialogue Going: From Huashan to
the Operational Headquarters

This dialogue did not end when the Huashan exhibition closed. The celebration and immersive show were staged at Huashan 1914 Creative Park, whose lawn once held the Huashan Freight Station, in use from the Japanese-colonial era into the 1970s. From there, TCC's cement shipped across Taiwan and helped shape Taipei's urban form. After the May show, TCC moved some exhibits to TCC Operational Headquarters and, from July, launched a monthly "Civilization Walk," inviting the public inside to continue the conversation on civilization and sustainability. From the Hoping Cement plant's DAKA, to the anniversary's immersive experience, to the headquarters' Civilization Walk, TCC has consistently turned its own sites into platforms for ongoing dialogue and engagement with society.



Li-Chyi Wen

Chief Advisor, The Center
for Green Economy, CIER

TCC transforms "sustainability" from a
disclosure issue into an operational model.



Chia-Wei Chao

Chairperson, Taiwan
Environment and
Planning Association

Comparing the Paris Agreement with the
Code of Hammurabi emphasizes its
influence on human civilization.
Such a design comes from Chairman
Nelson An-ping Chang himself.



Hou-Ju Chen

CEO, VISIONS CYCLE

TCC 's emphasis on stakeholder
engagement is absolutely the best among
Taiwanese enterprises!





Overview

Letter to Our Stakeholders

About TCC Group Holdings

Our 2025

Shaping the Future Civilization

Pillar I Financial Resilience

Pillar II Global Operations

Pillar III Climate Technology

Pillar IV R&D Integration

Pillar V ESG Advantages

Pillar VI Talent & Culture

Just Transition Plan

Special Feature – TCC 80th Anniversary

Risk Governance Enhancing

Operational Resilience

Stakeholder and Material

Topic Analysis

Sustainability Goals and Tracking

2025 Honors and Recognition

More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix



"1000+1" TCC DAKA — Gathering Ten Million Good Intentions for a Co-Prosperity Future

"1000+1" TCC DAKA advances to the next stage, with your warm assistance and the belief in conveying co-prosperity and co-creating value.

To TCC, DAKA's greatest significance is not merely an open factory but a bridge. It lets an industry once walled off begin to be understood by society, and to relearn how to speak with it.

Entering its seventh year, TCC's open factory, TCC DAKA, surpassed ten million visitors in March 2026. At the "1000+1" celebration, Chairman Nelson An-ping Chang praised Hoping, DAKA's home, as "a place where mountains and the sea interweave, and where nature and industry coexist," describing it as a model of harmony between nature, society, and industry. He remarked, "Ten million is history; the '+1' is the future." TCC also thanked Uni-President Chairman Chih-Hsien Lo for his crucial support. Operating as a non-profit, DAKA has turned ten million travelers' visits and spending into the Hoping Emergency Funds to assist local families in crisis.



Hoping Emergency Funds Supported 155 Tribal Families

"I wouldn't know what to do without this fund," shared Hoping Village resident Hsiao-Fen. Following her eldest son's near-fatal drunk driving accident, the emergency fund stepped in to cover critical medical expenses and support her three other children.

4.3



TCC DAKA received a public rating of 4.3 stars on Google Reviews (over 13,000 reviews).

Taiwan Native *Dendranthema Indicum* Seed Postcard

Native to Taiwan's mountains, the wild chrysanthemum (*Dendranthema indicum*) is threatened by invasive species. Conserved by the Dr. Cecilia Koo Botanic Conservation Center, these seeds are now featured in special postcards, ready for you to take home and plant.



“

A cement plant that has drawn over ten million visitors, a popular photo spot and one of Hualien's top 15 must-see attractions; this is TCC DAKA.



Sustainability Key "+ 1" Posing Action

TCC's mascot GEMMA and the protected Little Tern will playfully join you on the mirror. You can become the warmest Earth Helper 🌱 or even the exclusive cover star of TCC DAKA!



Overview

Letter to Our Stakeholders

About TCC Group Holdings

Our 2025

Shaping the Future Civilization

Pillar I Financial Resilience

Pillar II Global Operations

Pillar III Climate Technology

Pillar IV R&D Integration

Pillar V ESG Advantages

Pillar VI Talent & Culture

Just Transition Plan

Special Feature – TCC 80th Anniversary

Risk Governance Enhancing

Operational Resilience

Stakeholder and Material

Topic Analysis

Sustainability Goals and Tracking

2025 Honors and Recognition

More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix



Knowledge Inclusion

From Open Factory to Learning Platform

NAUTILUS BIBLIOTHECA

Carrying Civilization Through Cement Craftsmanship, Making Sustainability an Experiential Learning

After withstanding the 0403 earthquake in 2024, DAKA deepened its role further. In November 2025, TCC opened a new venue, Nautilus Bibliotheca, on the first floor of the TCC DAKA Renewable Resource Recycling Center. For TCC, sustainability means more than carbon reduction and circularity; it also embraces passing on knowledge, building culture, and rooting sustainability awareness. The library marks DAKA's new stage, from open factory to learning platform and from inclusion to co-creation.

Carrying Civilization with Cement Craftsmanship

The Nautilus Bibliotheca explores "civilization, nature, and sustainability." Using TCC's advanced cement craftsmanship, exhibits like the Rosetta Stone and ancient fossils are recreated as tactile relics, transforming building materials into vessels of knowledge. Highlights also include the UHPC-crafted "Infinite Cycle of Universal Peace," a Möbius strip representing continuous renewal, and a Doomsday Clock echoing our 2050 Net-Zero goal.

Ultimately, TCC shows that cement can be a true carrier of civilization, using material innovation and circular thinking to combat climate change.





Overview

Letter to Our Stakeholders

About TCC Group Holdings

Our 2025

Shaping the Future Civilization

Pillar I Financial Resilience

Pillar II Global Operations

Pillar III Climate Technology

Pillar IV R&D Integration

Pillar V ESG Advantages

Pillar VI Talent & Culture

Just Transition Plan

Special Feature – TCC 80th Anniversary

Risk Governance Enhancing

Operational Resilience

Stakeholder and Material

Topic Analysis

Sustainability Goals and Tracking

2025 Honors and Recognition

More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

From the First to the Ninth Floor: A Readable Low-Carbon Building

The first-floor Nautilus Bibliotheca initiates a vertical journey through the TCC DAKA Renewable Resource Recycling Center. On the seventh floor, "Cement Fantasy" showcases TCC's low-carbon transition, allowing visitors to view the central control room's waste-to-resource cement kiln co-processing.

Ascending to the ninth floor, the "Fern Garden"—curated by the Dr. Cecilia Koo Botanic Conservation Center, showcasing nearly 100 rare ferns, echoing the resilience of TCC's industrial evolution. This bottom-up tour perfectly encapsulates TCC's shift from its core cement business to circularity and net zero.



Demonstration Site for Low-Carbon Products and Services

The exterior of the TCC DAKA Renewable Resource Recycling Center features TCC's proprietary UHPC walls, rooftop solar panels, and roads paved with recycled permeable concrete. Adjacent is an integrated charging and storage station powered by TCC's EnergyArk®. Crafted from the same fire-resistant, low-carbon UHPC as the building and its exhibits, EnergyArk® highlights how TCC extends its core cement technology into green energy. From building materials to energy facilities, the Nautilus Bibliotheca site stands as a living textbook on low-carbon transition.



Sustainable Learning and Environmental Education

Beyond a traditional library, Nautilus Bibliotheca is a space for rethinking our future, recently hosting Professor Chia-Wei Li's lecture on the Fern Garden's ecological secrets. Nearby, DAKA's new Graffiti Hall offers highly popular monthly sustainability workshops—ranging from soil painting and miniature ecospheres to low-carbon cement crafts and ecological hunts. Expanding from its 2020 initiatives, DAKA now provides regular courses on the circular economy, ecology, and low-carbon materials. With a 90% satisfaction rate, these programs highlight TCC's commitment to advancing broad public sustainability literacy alongside its own transformation.

Circular Demonstration and Local Co-prosperity

Nautilus Bibliotheca sits within the TCC DAKA Renewable Resources Recycling Center, Taiwan's first circular-economy demonstration base to combine a cement kiln with a gasifier. To date it

has helped Hualien process over 82,000 tons of household waste, cut roughly 43,000 tCO₂e of carbon, and avoid about 4,000 tons of methane emissions. In one venue, visitors move from civilization exhibits into a working circular-economy site, sensing the trust between TCC and its local community.

Transparent Governance

X

Local Feedback



At DAKA, TCC runs a 24-hour real-time environmental data board and regularly invites opinion leaders and residents of the Hoping and Aohua community to tour Nautilus Bibliotheca, the Cement Fantasy area, and the Fern Garden. Surveys show over ninety percent (91.46%) of villagers strongly approve of the park's cleanliness. Revenue also returns to the community: the Hoping Emergency Funds, created from allocated park revenue, have supported 155 Hoping Village families through serious illness, accidents, or major incidents over six years. The park restaurant Quiet Horizon sources ingredients from local Hualien smallholders, extending sustainability all the way to the table.



Overview

- Letter to Our Stakeholders
- About TCC Group Holdings
- Our 2025
- Shaping the Future Civilization
- Pillar I Financial Resilience
- Pillar II Global Operations
- Pillar III Climate Technology
- Pillar IV R&D Integration
- Pillar V ESG Advantages
- Pillar VI Talent & Culture
- Just Transition Plan
- Special Feature – TCC 80th Anniversary
- Risk Governance Enhancing**
- Operational Resilience**
- Stakeholder and Material
- Topic Analysis
- Sustainability Goals and Tracking
- 2025 Honors and Recognition
- More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Risk Governance Enhancing Operational Resilience

Global Business Units: Elevating Risk Governance and Resilience

As TCC’s global presence expands, risks spanning geopolitics, cross-border compliance, and emerging industry safety grow increasingly complex. In 2025, TCC initiated group-level risk governance optimization, planning the implementation of ISO 31000 and ISO 22301 across global units. Furthermore, a July 2025 fire at subsidiary E-One Moli Energy’s Xiaogang battery plant prompted TCC to accelerate stricter Responsible Business Alliance (RBA) guidelines in its energy and battery sectors, anchoring sustainable growth in safety.

Board Project Report: Ensuring Comprehensive and Prudent Response

Responding swiftly to the 2025 fire, TCC established a group-wide risk optimization strategy via a special board report. Based on these discussions, the Risk Management Committee reviewed asset and business interruption insurance, approving mitigation measures, risk appetite, and control limits for major accidental risks. Updating the risk matrix to rank fire risk as the top priority, the Committee submitted all findings to the Board. In 2026, the Committee continues tracking execution, reporting the launch of ISO 31000 and ISO 22301 systems.

Systematically Enhancing Business Continuity Management (BCM)

Formulated in 2024, TCC’s Business Continuity Management Guidelines ensure immediate control over emergencies during natural or human-caused disasters. To systematically optimize BCM, TCC’s Operation Headquarters and Hoping Plant initiated ISO 22301 BCMS implementation, comprehensively inventorying production processes and institutional documents. Through Business Impact Analysis (BIA) and risk assessments, TCC identified key workflows requiring priority recovery to formulate continuity strategies. Furthermore, tabletop exercises, disaster backup, and system recovery drills ensure BCMS effectiveness, supplemented by regular management reviews and third-party verification to maintain or quickly restore key operations during major disasters.

Concurrently, European subsidiaries enhanced resilience: OYAK Cement established an enterprise risk framework referencing ISO 31000 and COSO to prioritize key systems in emergency and continuity planning, while CIMPOR completed ERM implementation in Portugal and launched a BCM plan to protect operations, personnel, and assets.

Three Institutional Pillars: ISO 31000 × ISO 22301 × RBA

			
Framework	Risk Management	BCMS	RBA Guidelines
Scope	Centered on TCC’s risk management framework, covering risk management guidance and oversight for operating plants.	Prioritized at Hoping Plant (Pilot Site), with continuous expansion to production, logistics, and support units.	Prioritized at Taiwan sites of Charging and Storage and Battery Energy businesses, with continuous expansion.
Core Resilience	Establishes consistent risk identification methods and frameworks, defining responsibilities for autonomous checks and supervisory reviews at all levels. BSI third-party audit expected by Nov 2026 (conducted biennially). Risk Management Working Group regularly reviews risks following ISO 31000 principles, framework, and processes.	Analyzes key processes and resources to formulate BCM strategies and plans, ensuring immediate response and rapid recovery during major disasters.	Conducts third-party audits on labor, health & safety, environment, and ethics to identify risks and drive improvement. Performs fire safety inspections per Taiwan fire & occupational safety laws and NFPA standards, with third-party disaster prevention reports.



Overview

- Letter to Our Stakeholders
- About TCC Group Holdings
- Our 2025
- Shaping the Future Civilization
- Pillar I Financial Resilience
- Pillar II Global Operations
- Pillar III Climate Technology
- Pillar IV R&D Integration
- Pillar V ESG Advantages
- Pillar VI Talent & Culture
- Just Transition Plan
- Special Feature – TCC 80th Anniversary
- Risk Governance Enhancing
- Operational Resilience
- Stakeholder and Material Topic Analysis**
- Sustainability Goals and Tracking
- 2025 Honors and Recognition
- More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Stakeholder and Material Topic Analysis

Double Materiality Analysis of Sustainability Issues

TCC conducts a sustainability topic identification and materiality assessment every two years. In 2024, following its rapid global expansion, TCC officially transformed into the group holding company "TCC Group Holdings." In 2025, the Management Team and senior executives from the global low-carbon construction materials and new energy business groups participated for the first time. Referencing the GRI Double Materiality Guide-lines and the European Sustainability Reporting Standards (ESRS), TCC introduced a double materiality framework to analyze these sustainability topics.

This assessment simultaneously adopted "Outside-In" and "Inside-Out" perspectives to examine the financial and operational impacts of external sustainability issues on TCC, as well as the actual impacts of TCC's operations on the environment, society, and economy. For financial materiality, TCC introduced a scientific quantitative model, calibrated and verified using historical operational data. This systematically identifies the sustaina-bility risks and opportunities across different operational sites and industries, ensuring that the assessment results truly reflect TCC's strategic direction, governance mindset, and long-term vision under its global operational framework.

Executive Summary



Global Perspective

Scanning 9 global business groups

Spanning 9 Business Groups

Covers cement and environmental protection, charging and storage, battery energy, and energy for social transformation.

Expanding Across 5 Continents

Focuses on core markets (Taiwan, Mainland China, Türkiye, Europe, West Africa, US, Australia) with region-specific strategic positioning.

Cross-Disciplinary Expert Assessment

Engages 34 senior executives across HQ, Taiwan subsidiaries, cement and environmental protection (Europe), charging and storage (global), and cement business (Mainland China).



Accurate Quantification

Quantifying financial impacts via Monte Carlo Simulation

Establishing Scales with Actual Data

Applies a 5-point Likert scale with intervals based on historical data to align management's qualitative baselines, enabling quantification of risk/opportunity financial impacts.

Monte Carlo Simulation

Models TCC-specific, 5-year dynamic scenarios to estimate financial impact ranges of risks and opportunities through multi-round random sampling.

Empirical Calibration & Tail-Risk Capture

Calibrates simulations against actual historical data (disaster losses, insurance claims, low-carbon revenues) to adjust for risk profiles and capture low-probability, high-impact tail risks.



Grasping Trends

Dynamically tracking international sustainability trends

Aligning with Sustainability Ratings

DJBIC, MSCI, CDP, FTSE Russell, Sustainalytics, etc.

Considering Disclosure Standards

GRI, SASB, IFRS, TNFD, etc.

Mapping Industry & Market Trends

Industry characteristics, peer benchmarks, RBA, etc.



2025 Action Highlights

TCC conducted 4 sustainability issue and risk/opportunity identification workshops, engaging the HQ, Taiwan subsidiaries, cement and environmental protection (Europe), charging and storage (global), and cement business (Mainland China). Additionally, TCC held 1 ESG impact assessment workshop for all units and stakeholders to identify ESG impacts.



Overview

Letter to Our Stakeholders
About TCC Group Holdings
Our 2025
Shaping the Future Civilization
Pillar I Financial Resilience
Pillar II Global Operations
Pillar III Climate Technology
Pillar IV R&D Integration
Pillar V ESG Advantages
Pillar VI Talent & Culture
Just Transition Plan
Special Feature – TCC 80th Anniversary
Risk Governance Enhancing
Operational Resilience
Stakeholder and Material
Topic Analysis
Sustainability Goals and Tracking
2025 Honors and Recognition
More About the Report

Governance

Carbon Reduction
Energy Transition
Employee
Nature
Social Inclusion
Appendix

6-Step Stakeholders and Material Topics

Assessment

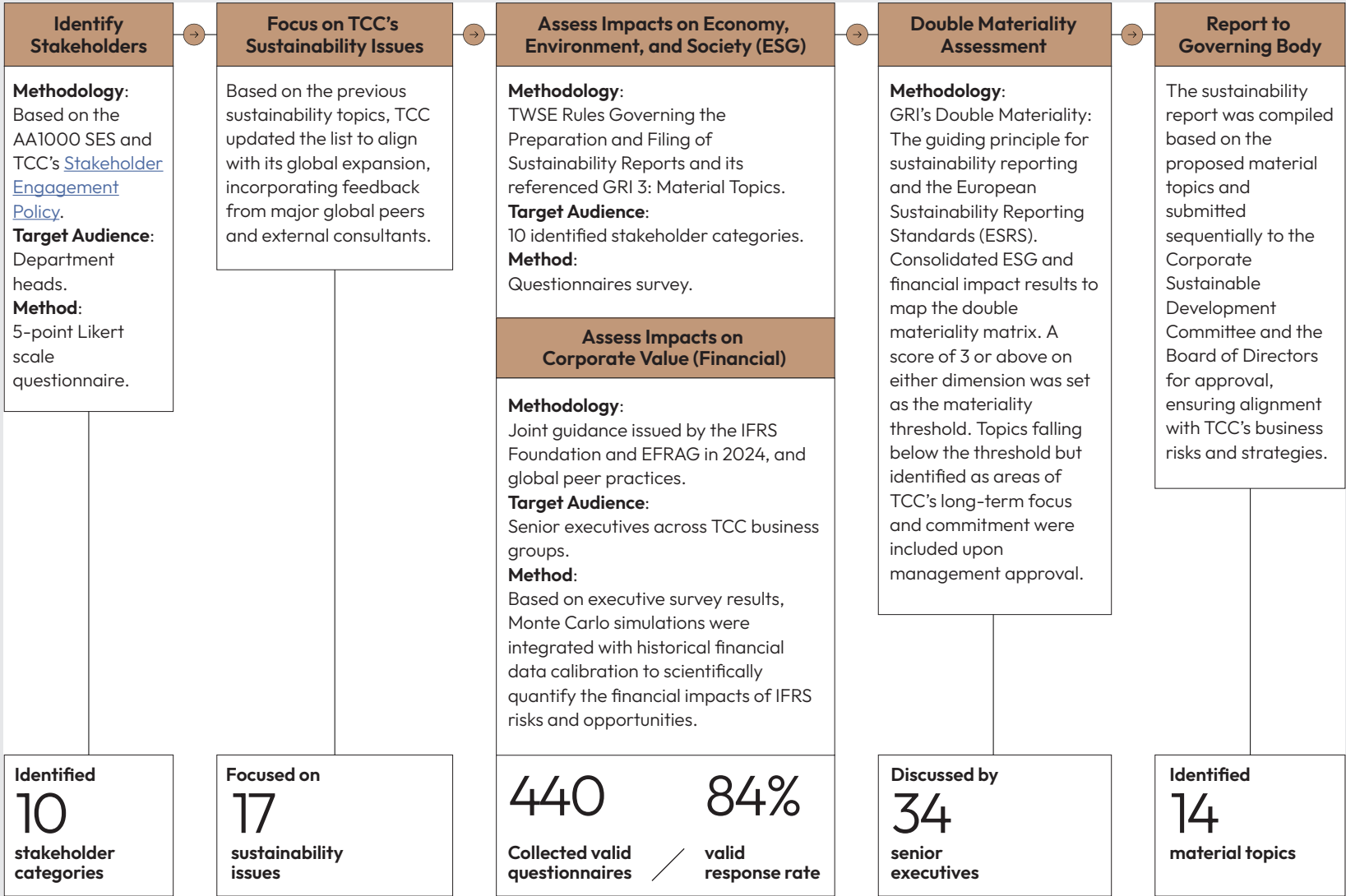
To navigate the complex sustainability topics of globalized and diversified operations, TCC utilizes a consistent and traceable process to

integrate stakeholder perspectives, ESG impacts, and financial analyses. This structured approach minimizes judgment gaps across regions and roles. By establishing clear governance, TCC enhances assessment

transparency and ensures these insights directly strengthen TCC's risk management, strategic planning, and decision-making, supporting long-term sustainable operations.

Stakeholder Identification Results

Referring to the AA1000 Stakeholder Engagement Standard (SES), TCC identifies and prioritizes the key stakeholders based on the five principles, i.e., Responsibility, Influence, Tension, Diverse Perspectives, and Dependency.



- Government and Competent Authorities**
Influence policy implementation and industry development, with a focus on TCC's regulatory compliance performance
- Shareholders and Investors**
Provide primary financial resources and focus on TCC's operational performance and sustainable development
- Clients**
Focus on TCC's product quality and services, prioritizing its operations, regulatory compliance, and environmental protection
- Employees**
The key to TCC's continuous breakthroughs and innovation, serving as vital human capital
- Suppliers / Contractors**
Business partners who co-elevate product quality and collaborate to address environmental and social issues
- Industry Associations / Industry and Academic Institutions**
Partner to advance industry development through mutual consultation and exchange during operations
- Media**
Help TCC disclose and communicate sustainability initiatives to the public
- Local Communities**
Located near TCC's operating sites and care about local operational activities
- Sustainability Associations**
Focus on TCC's sustainability initiatives and share the latest sustainable trends and insights
- Environmental Groups / NGOs**
Care about TCC's actions in environmental protection, employee care, and community engagement, urging continuous improvement



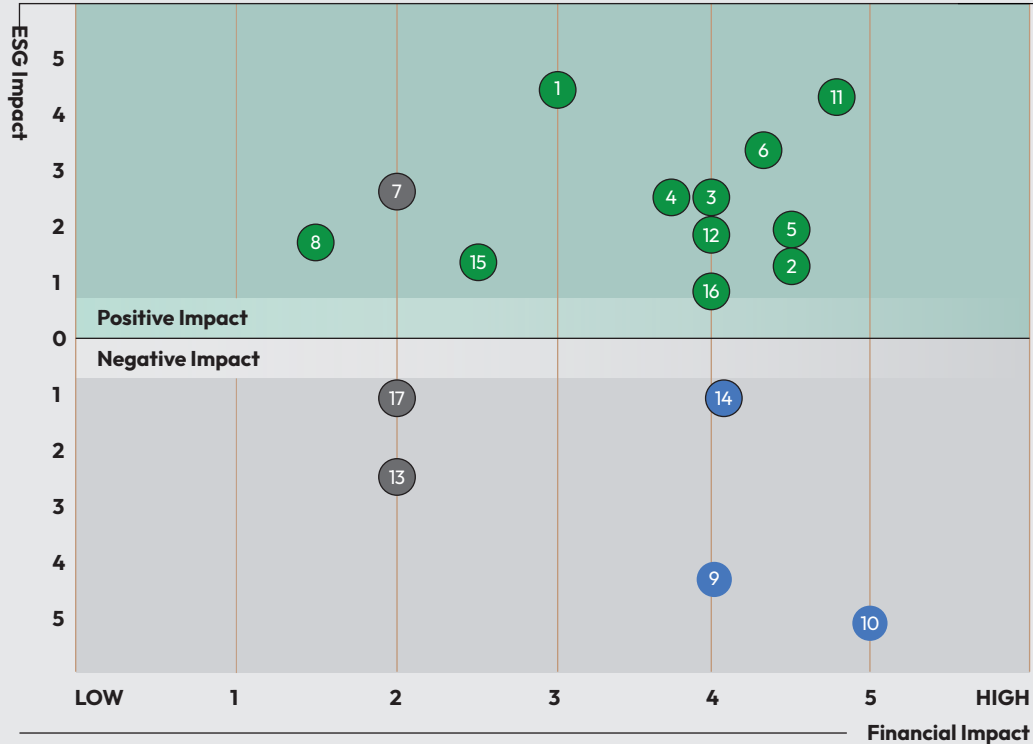
Overview

- Letter to Our Stakeholders
- About TCC Group Holdings
- Our 2025
- Shaping the Future Civilization
- Pillar I Financial Resilience
- Pillar II Global Operations
- Pillar III Climate Technology
- Pillar IV R&D Integration
- Pillar V ESG Advantages
- Pillar VI Talent & Culture
- Just Transition Plan
- Special Feature – TCC 80th Anniversary
- Risk Governance Enhancing
- Operational Resilience
- Stakeholder and Material Topic Analysis
- Sustainability Goals and Tracking
- 2025 Honors and Recognition
- More About the Report

Governance

- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Appendix

TCC Double Materiality Matrix



- 1 Climate Action & Net-Zero Emissions
 - 2 Resource Co-processing & Circular Economy
 - 3 Low-carbon Products & Services
 - 4 Green Energy & Energy Storage Business
 - 5 AI Process & Information Management
 - 6 R&D Innovation
 - 7 Environmental Quality Management
 - 8 Biodiversity
 - 9 Corporate Governance
- 10 Disaster Risk Control
 - 11 Operational Performance
 - 12 Stakeholder Engagement & Just Transition
 - 13 Sustainable Supply Chain Management
 - 14 Workplace Health & Safety
 - 15 Talent Cultivation & Development
 - 16 Workplace Inclusion
 - 17 Human Rights Protection



In 2025, TCC integrates its 14 material topics into three strategic pillars to build a comprehensive low-carbon transition framework: driving long-term business momentum through growth engines for low-carbon transition; ensuring steady transition implementation and operational resilience through robust foundational systems; and supporting the capital efficiency of cross-regional operations and long-term shareholder value through global governance and value creation.

Future Growth Engines for Low-Carbon Transition	Transition Foundation & Operational Resilience	Global Governance & Value Creation
- Resources Co-Processing & Circular Economy - Low-Carbon Products & Services - Green Energy & Energy Storage Business	- Climate Actions & Net-Zero Emissions - AI Process & Information Management - Biodiversity - Stakeholder Engagement & Just Transition - Talent Cultivation & Development - Workplace Inclusion - Workplace Health & Safety - Disaster Risk Control	- R&D Innovation - Operational Performance - Corporate Governance

Core Strategies		
Drive medium- to long-term growth with a multi-engine strategy, transforming low-carbon transition into scalable business momentum	Strengthen people, systems, and risk management to ensure steady transition implementation and resilience against uncertainties	Leverage R&D, governance, and performance as levers to support cross-regional operations and capital efficiency



Overview

- Letter to Our Stakeholders
- About TCC Group Holdings
- Our 2025
- Shaping the Future Civilization
- Pillar I Financial Resilience
- Pillar II Global Operations
- Pillar III Climate Technology
- Pillar IV R&D Integration
- Pillar V ESG Advantages
- Pillar VI Talent & Culture
- Just Transition Plan
- Special Feature – TCC 80th Anniversary
- Risk Governance Enhancing
- Operational Resilience
- Stakeholder and Material Topic Analysis
- Sustainability Goals and Tracking
- 2025 Honors and Recognition
- More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Impact Management of Material Topics

Impacts to Value Chain: Supply Chain TCC Operations Products/Services Local Communities

GRI Topics	Significance to TCC (Operational Materiality)	Significant Impacts	Impacts to Value Chain	Policy Commitment	Management Actions	Chapters of Disclosures
Climate Action & Net-zero Emissions						
GRI 201: Economic Performance 2016 GRI 302: Energy 2016 GRI 305: Emissions 2016	In response to climate change, TCC's three core businesses—low-carbon construction materials, resource recycling, and green energy—adopt emission reduction strategies to reduce carbon emissions in own operations and the value chain (Scope 1, 2, and 3).	+ Climate-related opportunities - Climate-related risks		TCC participates in the global low-carbon transition process and stays aligned with the "Paris Agreement" to limit global warming to 1.5°C or lower, targeting net-zero emissions by 2050.	1.TCC's cement and concrete business units worldwide (including CIMPOR and OYAK CEMENT) achieved the Science Based Targets initiative (SBTi) 1.5°C and net-zero targets. 2.The new energy business (NHOA Energy and Atlante) has achieved the Science Based Targets initiative (SBTi) 1.5°C target validation. 3.TCC establishes the Group's net-zero pathway and carbon reduction strategy.	CH 1 CH 2
Resource Co-processing & Circular Economy						
Self-defined material topic	TCC extends the high-temperature co-processing technology of cement kilns into a service, assisting society in solving waste problems while creating positive benefits such as resource recycling.	+ Circular economy of resources + Good interaction with society		TCC is committed to becoming a city purifier, assisting in the treatment of industrial and domestic waste while using recycled materials with low environmental impact to enable the sustainable use of Earth's resources.	TCC utilized the high-temperature characteristics of cement kilns to co-process industrial waste and established the TCC DAKA Renewable Resource Recycling Center to assist in treating domestic waste in Hualien, transforming urban waste into resources and continuing to develop the reuse of construction and demolition waste (C&D waste).	CH 2
Low-Carbon Products & Services (Construction Methods)						
GRI 301: Materials 2016	The Group's low-carbon products and services cover diverse items such as low-carbon construction materials and transportation services. The Group actively adopts EPD full life cycle management to reduce the carbon content of products and the energy and resources consumed during production, providing clients with low-carbon products and new construction methods to create green value.	+ Technological and product innovation + Climate-related opportunities		TCC targets the lowest carbon and high quality for its products, and requires the value chain to strictly conduct carbon management across production, manufacturing, transportation, and services.	TCC provides low-carbon products and construction methods according to client needs, including new materials (such as calcined clay cement) and 3D printing construction methods, and enhances the green content of products by setting targets such as product carbon emission intensity; TCC introduces various ISO management systems to manage production processes.	CH 2



Overview

- Letter to Our Stakeholders
- About TCC Group Holdings
- Our 2025
- Shaping the Future Civilization
- Pillar I Financial Resilience
- Pillar II Global Operations
- Pillar III Climate Technology
- Pillar IV R&D Integration
- Pillar V ESG Advantages
- Pillar VI Talent & Culture
- Just Transition Plan
- Special Feature – TCC 80th Anniversary
- Risk Governance Enhancing
- Operational Resilience
- Stakeholder and Material Topic Analysis
- Sustainability Goals and Tracking
- 2025 Honors and Recognition
- More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Impact Management of Material Topics

Impacts to Value Chain: Supply Chain TCC Operations Products/Services Local Communities

GRI Topics	Significance to TCC (Operational Materiality)	Significant Impacts	Impacts to Value Chain	Policy Commitment	Management Actions	Chapters of Disclosures
Green Energy & Energy Storage Business						
Self-defined material topic	TCC develops new energy products and services such as renewable energy, energy storage, and batteries, becoming an important driving force for the global energy transition, and is committed to creating positive impacts on the overall economy and society.	+ Technological and product innovation + Climate-related opportunities		TCC actively participates in the global energy transition, developing resilient new energy products and integrated services.	TCC actively invests in the construction of renewable energy and energy storage systems; establishes the Smile Strategy to integrate charging and energy storage services; participates in the power trading market and develops battery systems.	CH3
AI Process & Information Management						
Self-defined material topic	In response to the global AI wave, TCC applies relevant technologies to optimize processes and improve production and resource utilization efficiency. Meanwhile, TCC establishes an information security management system to mitigate information security risks.	+ Technology and process optimization - Information security risks		TCC established the "Information Security Management Committee Charter" and the "AI Policy" to ensure that information security and the use of AI technology are properly managed and comply with regulations and ethics.	TCC actively introduces digitalization and AI tools to improve process efficiency and product quality control, and implements ISO 27001 to strengthen information security management.	CH2
R&D Innovation						
Self-defined material topic	With material innovation as its core mindset, TCC develops new low-carbon and weather-resistant materials, energy storage equipment, and carbon capture technologies, continuously investing in R&D to enhance product value.	+ Technology and product innovation + Climate-related opportunities		TCC continuously invests in product and technology research for low-carbon construction materials, charging and storage systems, and batteries to develop innovative and eco-friendly products and services, enhancing added value.	TCC establishes R&D units at key global locations to develop different materials and products for each region and seeks opportunities to collaborate with international organizations to strengthen innovation capabilities.	CH1 CH2
Biodiversity						
GRI 101: Biodiversity 2024	Limestone quarrying activities in the cement business may affect land ecosystems, and the construction of new energy sites—such as renewable energy and energy storage facilities—also requires consideration of potential ecological impacts. TCC commits to restoring original ecosystem services and maintaining biodiversity to reduce the potential negative impacts of operations.	+ Maintaining biodiversity systems - Loss of biodiversity		TCC has established a "Biodiversity Policy" and a "No Deforestation Commitment" and is committed to preventing and reducing the impacts of development activities on nature while implementing restoration projects to achieve Nature Positive by 2040.	TCC has implemented multiple terrestrial and marine biodiversity protection measures and became a TNFD Early Adopter. TCC actively researches the application possibilities of natural carbon sinks.	CH5
Operational Performance						
GRI 201: Economic Performance 2016	Robust operational performance is the key foundation supporting long-term investment, low-carbon transition, and social responsibility, and a core indicator for the international capital market to evaluate the cross-regional sustainable transition results of the Group.	- Financial and operational risks		TCC commits to steadily improving overall operational performance. By 2025, its operational footprint has expanded to major markets in 20 countries across five continents, continuously developing diverse industries.	TCC continuously strengthens operational performance through cost control, profitability enhancement, and surplus distribution mechanisms, while actively revitalizing assets.	Our 2025



Overview

- Letter to Our Stakeholders
- About TCC Group Holdings
- Our 2025
- Shaping the Future Civilization
- Pillar I Financial Resilience
- Pillar II Global Operations
- Pillar III Climate Technology
- Pillar IV R&D Integration
- Pillar V ESG Advantages
- Pillar VI Talent & Culture
- Just Transition Plan
- Special Feature – TCC 80th Anniversary
- Risk Governance Enhancing
- Operational Resilience

Stakeholder and Material

Topic Analysis

- Sustainability Goals and Tracking
- 2025 Honors and Recognition
- More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Impact Management of Material Topics

Impacts to Value Chain: Supply Chain TCC Operations Products/Services Local Communities

GRI Topics	Significance to TCC (Operational Materiality)	Significant Impacts	Impacts to Value Chain			Policy Commitment	Management Actions	Chapters of Disclosures
Stakeholder Engagement & Just Transition								
Self-Defined Topic	During its low-carbon transition, TCC respects the rights of all stakeholders, responds to their needs through engagement and communication, and incorporates relevant feedback into decision-making.	+ Just transition - Operational risks				Adhering to the Total Care Commitment spirit, TCC established the "Stakeholder Engagement Policy" to develop different engagement strategies and methods for various stakeholders.	1.TCC interacts directly with stakeholders through open factory practices, such as TCC DAKA and the RRRC. 2.TCC organized just transition workshops to identify affected stakeholders and continues to promote relevant programs to provide assistance. 3.TCC actively assists employees who may be affected during the transition process through job redesign and skill enhancement.	CH 1 CH 4 CH 6
Talent Cultivation & Development								
GRI 404: Training and Education 2016	TCC's operations span 11 fields, requiring the active expansion of cross-disciplinary talent, AI technology application, and international operational talent. Enhancing professional standards and aligning with corporate development needs drives innovation and strengthens competitiveness, which helps alleviate talent gaps and builds a dynamic talent system.	+ Increase in the corporate talent asset competitiveness - Talent loss				Talents constitute the crucial cornerstone of sustainable business operations. Committed to cultivating diversified developments of its employees, TCC endeavors to maximize their potential.	TCC launched the "Digital Intelligence Navigators Program" and the "Nemo Talent Program" in 2025 and 2026 to recruit cross-disciplinary integration talent, and provides employee development blueprints and training resources globally.	CH 4
Workplace Inclusion								
GRI 405: Diversity and Equal Opportunity 2016	TCC has established operational sites with diverse cultural backgrounds and brought together employees across six generations. Workplace inclusion helps attract and retain diverse talent, enhances employee identification and collaboration efficiency, and strengthens operational resilience.	+ Cohesion of employee loyalty - Compliance risks				TCC established the "Anti-Discrimination, Anti-Harassment, and Anti-Bullying Policy", committing to a people-centric, diverse, and inclusive workplace environment.	TCC arranges regular education and training, establishes grievance channels and review committees for discrimination, harassment, and bullying, and promotes gender equality inside and outside the workplace to implement a friendly workplace.	CH 4



Overview

- Letter to Our Stakeholders
- About TCC Group Holdings
- Our 2025
- Shaping the Future Civilization
- Pillar I Financial Resilience
- Pillar II Global Operations
- Pillar III Climate Technology
- Pillar IV R&D Integration
- Pillar V ESG Advantages
- Pillar VI Talent & Culture
- Just Transition Plan
- Special Feature – TCC 80th Anniversary
- Risk Governance Enhancing
- Operational Resilience
- Stakeholder and Material Topic Analysis
- Sustainability Goals and Tracking
- 2025 Honors and Recognition
- More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Impact Management of Material Topics

Impacts to Value Chain: Supply Chain TCC Operations Products/Services Local Communities

GRI Topics	Significance to TCC (Operational Materiality)	Significant Impacts	Impacts to Value Chain				Policy Commitment	Management Actions	Chapters of Disclosures
Corporate Governance									
GRI 205: Anti-corruption 2016 GRI 206: Anti-competitive Behavior 2016	TCC's global operations may face complex compliance requirements across regions. Regulatory compliance reduces operational risks and penalties, improving overall performance. TCC establishes an integrity-based corporate culture, ensuring all operational processes comply with relevant regulatory requirements.	- Operational risks such as penalties for violations					TCC establishes strict internal control and regulatory compliance systems to prevent compliance risks and protect TCC's reputation. TCC also prohibits unfair competition practices to maintain free market competition mechanisms.	1.TCC regularly identifies and tracks matters such as legal amendments through the "Internal/External Issues Registry". It simultaneously establishes a reporting system and whistleblower protection mechanism while building employees' compliance awareness. 2.TCC promotes CSDDD human rights and environmental due diligence and continuously implements ISO 37301 and ISO 37001.	CH1
Workplace Health & Safety									
GRI 403: Occupational Health and Safety 2018	TCC values the workplace environment and actively establishes a safe working area. Failure to properly implement workplace safety measures will expose employees to potential occupational safety risks, which may cause safety incidents, increasing losses and legal liabilities.	+ Healthy and safe workplace - Occupational hazards					"OHS Policy" has been stipulated at TCC, 100% applied to all employees and contractors. Also, TCC has been aiming for "zero work-related injuries" among employees and contractors.	1.TCC's global business entities continuously implement ISO 45001 and strengthen personnel's workplace safety awareness through contractor safety management, advocacy, and education and training. 2.TCC implements AI smart monitoring to instantly identify occupational safety risks.	CH 4
Disaster Risk Control									
Self-Defined Topic	TCC's cement, energy, and battery facilities are mostly heavy assets. Human or natural disasters may lead to risks such as equipment damage, business interruption, and casualties, requiring sound prevention and response mechanisms.	- Business interruption risk - Personnel safety risk					TCC formulates a group-wide management mechanism for major risks and sets the Business Continuity Management Guidelines to strengthen disaster prevention and incident response capabilities.	1.TCC's operation headquarters implements ISO 31000 and ISO 22301 business continuity management systems (BCMS). 2.TCC regularly conducts disaster prevention drills, equipment inventory, and risk assessments to establish emergency response and recovery mechanisms.	CH 1

Note: + indicates positive impact; - indicates negative impact



Overview

- Letter to Our Stakeholders
- About TCC Group Holdings
- Our 2025
- Shaping the Future Civilization
- Pillar I Financial Resilience
- Pillar II Global Operations
- Pillar III Climate Technology
- Pillar IV R&D Integration
- Pillar V ESG Advantages
- Pillar VI Talent & Culture
- Just Transition Plan
- Special Feature – TCC 80th Anniversary
- Risk Governance Enhancing
- Operational Resilience
- Stakeholder and Material
- Topic Analysis
- Sustainability Goals and Tracking
- 2025 Honors and Recognition
- More About the Report

Governance

- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Appendix

Sustainability Goals and Tracking

GHG Management - Carbon Emission Intensity | Unit: kg CO₂/t cementitious materials

		2024 Performance	2025 Performance
Scope 1 Net Intensity	Group	629	608
	Asia	639	622
	Europe-Africa	608	578
	- CIMPOR	597	543
	- OYAK Cement	611	586

*Taiwan plants must comply with CNS 61—a 10% maximum limit on supplementary cementitious materials.

		2024 Performance	2025 Performance	Achievement	2025 Target	2030 Target	2050 Target
	SBT Carbon Intensity						
	Cement and Environmental Protection Business (Asia)	668	663	97%	645	552	Under SBTi's validation
	CIMPOR	686	647		-	538	33
	OYAK Cement	713	682		-	610	33

Note 1: Per SBTi methodology, the 2025/2030 carbon intensity target boundaries cover cement plants only (Scope 2: market-based). For Cement and Environmental Protection (Asia), targets cover Taiwan and Mainland China plants, excluding Longshan, Liaoning, RMC plants, and grinding plants due to operational considerations. For CIMPOR, targets cover cement plants and grinding plants in Portugal.

		2024 Performance	2025 Performance
Cement and Environmental Protection Business - Global			
Covers all cement plants and grinding stations		670	655

		2024 Performance	2025 Performance	Achievement	2025 Target	2030 Target	2050 Target
Water Management - Fresh Water Withdrawal Intensity Unit: megaliter/ t cementitious materials							
Cement and Environmental Protection Business (Asia)		0.000377	0.000398	-	-	0.000248	-
CIMPOR		0.000200	0.00017	✓	0.00020	0.00020	-
Thermal Substitution Rate (TSR) of Alternative Fuels							
Cement and Environmental Protection Business (Asia)		15.4%	14.8%	60%	25%	35%	50%
CIMPOR		33.8%	35.3%	-	-	70%	-
OYAK Cement Grey Cement		24.5%	27.95%	92%	30.5%	58%	-
Ratio of Alternative Raw Materials							
Cement and Environmental Protection Business (Asia)		17.4%	21.01%	✓	21%	22%	25%
CIMPOR		3.6%	6.03%	✓	4%	5%	-
OYAK Cement		1.86%	2.29%	✓	2.09%	5%	-
Clinker Ratio							
Cement and Environmental Protection Business (Asia)		0.789	0.764	✓	0.796	0.78	0.57
CIMPOR		0.800	0.764	-	-	<0.65	-
OYAK Cement		0.795	0.7886	✓	0.790	0.75	-
Energy Efficiency Unit: total petrochemical energy consumption (GJ)/ t cementitious materials							
Cement and Environmental Protection Business (Asia)		2.7	2.27	✓	2.46	2.306	1.998
CIMPOR		3.6	1.96	✓	-	3.3	-

Note 2: Freshwater withdrawal intensity for Cement and Environmental Protection (Asia) was affected by higher evaporation and wastewater from new waste heat recovery systems, alongside pipe leaks from aging and corrosion. Additionally, TSR fell short due to fuel quality fluctuations (leading to temporary feed reductions or suspensions), equipment maintenance, and delayed retrofits for feeding and storage systems.



Overview

- Letter to Our Stakeholders
- About TCC Group Holdings
- Our 2025
- Shaping the Future Civilization
- Pillar I Financial Resilience
- Pillar II Global Operations
- Pillar III Climate Technology
- Pillar IV R&D Integration
- Pillar V ESG Advantages
- Pillar VI Talent & Culture
- Just Transition Plan
- Special Feature – TCC 80th Anniversary
- Risk Governance Enhancing
- Operational Resilience
- Stakeholder and Material
- Topic Analysis
- Sustainability Goals and Tracking**
- 2025 Honors and Recognition
- More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Sustainability Goals and Tracking

		2024 Performance	2025 Performance	Achievement	2025 Target	2030 Target	2050 Target	
Air Pollution Management								
Emission Intensity Unit: grams emissions / t clinker	Cement and Environmental Protection Business (Asia)	NOx	309	323	✓	380	370	BACT minimum
		SOx	37	37	✓	40	39	BACT minimum
		TSP	22	23	90%	21	20	BACT minimum
	CIMPOR	NOx	996	1,005	99.5%	<1,000	<500	-
		SOx	291	213	✓	<250	<200	-
		TSP	10.8	7.9	42%	<5	<5	-
		Mercury	0.004	0.004	✓	<0.010	<0.005	-
	Emissions	Cement and Environmental Protection Business (Asia)	Mercury	0.22	0.192	✓	0.192	0.187
Waste Management -Ratio of On-site Waste Converted into Renewable Resources and Energy								
Cement and Environmental Protection Business (Asia) Cement Plants		100%	100%	✓	100%	100%	100%	
Renewable Energy Development and Management Unit: MW								
Group-wide		203	317	✓	235	400	750	
Carbon Capture R&D Budget† Cumulative investment since 2011 Unit: NT\$								
Taiwan and Mainland China		188 million	194 million	Under Adjustment	1.3 billion	-	-	
Carbon Capture Capacity								
Taiwan and Mainland China		TCC now prioritizes oxygen-enriched combustion for immediate emission reductions		Under Adjustment	-	0.1 million ton/year	1.6 million ton/year	
Conservation of Plant Species (Endangered Plants included) Since 2007 Unit: taxa								
Worldwide		34,671	34,556	-	≥ 35,000	≥ 40,000	≥ 45,000	
BMP Proportion of Native Species Maintenance in Quarry								
Taiwan		88.23%	88.55%	-	-	90%	90%	
Community Engagement (CEM) Cumulative investment since 2022 Unit: NT\$								
Cement and Environmental Protection Business (Asia) & Energy for Social Transformation Business		1.265 billion	1.591 billion	✓	800 million	1.8 billion	5.8 billion	
Education Investment Cumulative investment since 2022 Unit: NT\$								
Taiwan (across Business Groups)		30.02 million	36.86 million	✓	33.5 million	73.5 million	230 million	
Employee Training Cumulative investment since 2020 Unit: NT\$								
Taiwan and Mainland China (across Business Groups)		102 million	131 million	✓	125 million	250 million	750 million	
CIMPOR		9.9 million	18.68 million	✓	14.7 million	17.4 million	19.1 million	
Sustainability Questionnaire Collection Ratio of Significant Tier-1 Suppliers Ratio of procurement amount								
Cement and Environmental Protection Business (Asia)		78.65%	87.69%	✓	-	80%	-	

Note 3: BACT: Best Available Control Technology; BMP: Biodiversity Management Plan; CEM: Community Engagement Management.

Note 4: Significant Tier 1 suppliers refer to those who directly provide TCC with goods, raw materials, or services, and meet at least one of the following criteria: having a major impact on product quality or delivery, a high purchasing amount/ratio, or high ESG risks.

Note 5: Unless otherwise specified, the target boundary for Cement and Environmental Protection Business (Asia) is set to cement plants in Taiwan and Mainland China.

Note 6: TSP emission intensity for Cement and Environmental Protection (Asia) was affected by filter bag cost-reduction tests, aging bags reaching end-of-life (replaced in 2026), and frequent temporary kiln shutdowns. Aactual emission concentrations across all plants remained compliant with regulatory standards.

Note 7: Following the commencement of operations at CIMPOR's African plants, CIMPOR updated its 2030 TSR and clinker ratio targets. Additionally, performance on the 2025 specific NOx and TSP emissions intensity targets was impacted by Russia-Ukraine war-related ammonia supply constraints for the SNCR system, as well as reduced performance of main stack bag filters that had reached their operational end-of-life. A phased replacement program is currently underway. Nevertheless, actual NOx and TSP emissions remained well below applicable regulatory limits throughout the reporting period.



Overview

- Letter to Our Stakeholders
- About TCC Group Holdings
- Our 2025
- Shaping the Future Civilization
- Pillar I Financial Resilience
- Pillar II Global Operations
- Pillar III Climate Technology
- Pillar IV R&D Integration
- Pillar V ESG Advantages
- Pillar VI Talent & Culture
- Just Transition Plan
- Special Feature – TCC 80th Anniversary
- Risk Governance Enhancing
- Operational Resilience
- Stakeholder and Material
- Topic Analysis
- Sustainability Goals and Tracking
- 2025 Honors and Recognition
- More About the Report

Governance

- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Appendix

2025 Honors and Recognition

Credit Ratings			
	Long-Term Credit Ratings	Long-Term Rating Outlooks	Short-Term Credit Ratings
 Taiwan Ratings An S&P Global Company	twA+	Stable	twA-1
 S&P Global	BBB-	Stable	-
 Fitch Ratings	BBB-	Stable	-

Sustainability Ratings			
 S&P Global	 CDP DISCLOSURE INSIGHT ACTION		
Retained Dow Jones Best-in-Class Indices (DJBIC) World & Emerging Markets Components	Sole Asian Construction Materials Enterprise Double A Rating in Climate Change & Water		
Asia-Pacific's Best Company Inaugural Selection	 TIME Magazine	 Global 100	Most Sustainable Corporations in the World
 MSCI A ESG Leader	 SUSTAINALYTICS 21.8 Medium Risk	 ISS ESG C+ Prime	

Sustainability Initiatives			
TCC, CIMPOR & OYAK Cement: Joint Initiatives Science-Based Targets initiative (SBTi) Member Global Cement and Concrete Association (GCCA) Member		TCC TCFD Supporter TNFD Early Adopters ISSB Partnership for Early Awareness of Sustainability Disclosure Today Smart Energy Coalition Member (Formerly EP100) Business for Nature Call to Action & It's Now for Nature Signatory	
Sustainability Recognitions			
TCC Ranked 1st in Taiwan: Just Transition Assessment World Benchmarking Alliance (WBA)	Hoping EcoPort Green Port Award System Certification EcoPorts Certification	OYAK Cement Innovation Award Federation of European Risk Management Associations	CIMPOR Innovation Award Federation of European Risk Management Associations
ESG A+ Enterprise, Corporate Governance Thematic Case Award, and Climate Change Thematic Case Award China Building Materials Federation	Corporate Ocean Sustainability Contribution Award Ocean Affairs Council	Top 50 Industrial Enterprises Istanbul Chamber of Industry (ISO)	Legal 500 COTEC Innovative Enterprise Status
Best Companies to Work for in Asia HR Asia	National Environmental Education Award First Prize Ministry of Environment	Corporate Awareness Award (15th Internal Audit Awareness Awards) Institute of Internal Auditing Turkey (TIDE)	UK-Portugal Business Awards International Investment Award
Top 100 Carbon Competitiveness Business Weekly	National Environmental Education Facility Certification Ministry of Environment	Health & Safety Award World Cement Association	Trusted Brand in Cement Category Reader's Digest
1.5°C Pledge / Net Zero Certification CommonWealth	Ta-Ho Maritime Corporation Qualship 21 USCG	Occupational Health & Safety Turkish Cement Industry Employers' Association (ÇEİS)	NHOA Energy EcoVadis Silver Rating
Best Green Loan of the Year The Asset	Ho-Ping Power Company Sustainable Micro-movie Gold Award 9th Taipei Golden Eagle Micro-movie Festival	Fortune 500 Türkiye Fortune	Tier 1 Energy Storage Supplier BloombergNEF
Sports Enterprise Certification Sports for All Agency, Ministry of Sports	Clean Water Sustainability Award Ministry of Environment	Sustainable Development Leader Award InBusiness	EPC Firm of the Year 2025 Energy Storage Awards
Outstanding Green Procurement Enterprise Ministry of Environment (Taipei Plant, Taichung Plant, Dadu Plant, Chiayi Plant, Tainan Plant, and Kaohsiung Plant)	Outstanding Water Conservation Shortlist Water Resources Agency	Global 100 Impact Economy Award Platin	System Integrator of the Year RENMAD Storage Italia
Exemplary Lactation Room Certification & Excellence Award Department of Health, Taipei City Government	Healthy Workplace Promotion Self-Assessment Certification Health Promotion Administration , Ministry of Health and Welfare	Star of Hybrid Learning Award Enocta	Great Place to Work Certification (Australia, Italy, USA)
	Air Quality Purification Zone Special Contribution Award Hualien County Government	Highest Export Growth in White Cement Award Cement, Glass, Ceramic and Soil Products Exporters' Association	Atlante EcoVadis Silver Rating
		PERYÖN Value for People Awards Finalist	GRESB Infrastructure Member

Complete list of awards received by Mainland China operations in the [TCC 2025 Sustainability Report \(Simplified Chinese Version\)](#).



Overview

- Letter to Our Stakeholders
- About TCC Group Holdings
- Our 2025
- Shaping the Future Civilization
- Pillar I Financial Resilience
- Pillar II Global Operations
- Pillar III Climate Technology
- Pillar IV R&D Integration
- Pillar V ESG Advantages
- Pillar VI Talent & Culture
- Just Transition Plan
- Special Feature – TCC 80th Anniversary
- Risk Governance Enhancing
- Operational Resilience
- Stakeholder and Material
- Topic Analysis
- Sustainability Goals and Tracking
- 2025 Honors and Recognition

More About the Report

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

More About the Report

This 2025 Sustainability Report outlines the sustainable development strategies and stakeholder engagement of TCC Group Holdings (hereinafter "TCC" or the “Company”). Rooted in transparency, integrity, and the corporate philosophy "In Service of Life," this report demonstrates TCC's concrete commitments to shared value and ecological reciprocity.

Reporting Period

TCC regularly publishes an annual sustainability report in both Traditional Chinese and English versions. The reporting period for this report spans from January 1 to December 31, 2025.
Previous Publication: August 2025
Current Publication: August 2026
Next Publication: Scheduled for August 2027

Disclosure Boundaries and Scope

TCC operates across businesses including low-carbon construction materials, resource recycling, and green energy. The disclosure scope of this report is consistent with the boundaries of the consolidated financial statements, covering 100% of the consolidated operating revenue. Any variations in the scope of quantitative information will be explained in the footnotes. Key operating sites of each Business Group are listed in the table below:

The Scope of Disclosure – Business Group

Cement and Environmental Protection Business (Asia)

Cement and Environmental Protection Business (Europe-Africa)

Cement and Energy Storage (Europe - Africa)
Charging and Storage Business (Asia)
Charging and Storage Business (Europe)
Battery Energy Business

Energy for Social Transformation Business
Asset Management Business
Investment Business

Others

TCC's Key Operating Bases

Operating under the TCC brand at the following locations:
Cement Plants & Quarries: Taiwan, Mainland China
Ready-Mixed Concrete (RMC) Plants (including affiliated Shipping Station): Taiwan
Grinding Plants: Mainland China
Mining Subsidiaries: Ho Sheng Mining Co., Ltd., TCC Yingde Mining Industrial Co. Ltd., TCC Guigang Mining Industrial Co. Ltd., TCC Jiangsu Mining Industrial Co. Ltd.
Environmental Technology Subsidiaries: Guigang TCC Dongyuan Environmental Protection Technology Co., Ltd., TCC Jiuyuan (Guangan) Environmental Technology Co., Ltd., Kaili TCC Environmental Technology Co., Ltd., etc.
Offices: TCC Headquarters, Operations Center in Hangzhou, Operations Center in Guangdong and Guangxi, European Operations Headquarters
Other Subsidiaries: Feng Sheng Enterprise Co. (RMC Plant), E.G.C. Cement Corp. (Shipping Station), Hong Kong Cement Co. Ltd. (Shipping Station)

Operating under the CIMPOR and OYAK Cement brands at the following locations:
Cement Plants & Quarries: Portugal, Ivory Coast, Cameroon, Ghana, Türkiye
Ready-Mixed Concrete (RMC) Plants: Portugal, Cape Verde, Türkiye
Grinding Plants: Portugal, Cameroon, Ghana, Türkiye
Dry-mix Mortar Plants: Portugal
Paper Bag Plants: Portugal
Aggregate Plants: Portugal (including affiliated quarries), Cape Verde, Türkiye
Gypsum Plants: Cameroon
Shipping Stations: Portugal, Cape Verde, the United Kingdom, France
Warehouses: Portugal, Cape Verde, Ivory Coast
Offices: Portugal, Cape Verde, Ivory Coast, Cameroon, Türkiye, The Netherlands

CIMPOR Energy
TCC Energy Storage Technology Corp. (including Energy Helper TCC Corp.)
NHOA Energy 、Atlante
E-One Moli Energy Corp. & Molie Quantum Energy Corp. (operating under the Molicel brand), TCC Green Energy Corp.
Ho-Ping Power Co.
TCC Asset Management & Development Corp.
Kuan-Ho Refractories Industry Corp., Taiwan Transport & Storage Co., Ltd., Ta-Ho Maritime Corp., Hoping Industrial Port Corp., TCC Information Systems Corp.
Dr. Cecilia Koo Botanic Conservation Center, C.F. Koo Foundation



Overview

- Letter to Our Stakeholders
- About TCC Group Holdings
- Our 2025
- Shaping the Future Civilization
- Pillar I Financial Resilience
- Pillar II Global Operations
- Pillar III Climate Technology
- Pillar IV R&D Integration
- Pillar V ESG Advantages
- Pillar VI Talent & Culture
- Just Transition Plan
- Special Feature – TCC 80th Anniversary
- Risk Governance Enhancing
- Operational Resilience
- Stakeholder and Material
- Topic Analysis
- Sustainability Goals and Tracking
- 2025 Honors and Recognition

More About the Report

- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Appendix

Reference Guidelines for the Report

Publisher	Guidelines/Regulations
Global Reporting Initiative (GRI) Sustainability Accounting	GRI Universal Standard 2021
Standards Board (SASB)	Construction Materials
Global Cement and Concrete Association (GCCA)	GCCA Sustainability Guidelines
International Sustainability Standards Board (ISSB)	IFRS Sustainability Disclosure Standards, i.e., IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information and IFRS S2 Climate-related Disclosures
Financial Stability Board (FSB)	TCFD recommendations on climate-related financial disclosures
United Nations (UN)	Sustainable Development Goals (SDGs)
Taiwan Stock Exchange (TWSE)	Taiwan Stock Exchange Corporation Rules Governing the Preparation and Filing of Sustainability Reports by TWSE Listed Companies

Information Disclosure

Financial performance data is sourced from consolidated financial statements audited by independent CPAs. Financial figures are primarily presented in New Taiwan Dollars (NTD), with specific metrics maintained in their original currencies. Fully compliant with the 2013 regulatory mandate for listed entities, all financial disclosures strictly adhere to International Financial Reporting Standards (IFRSs).

Non-financial data is compiled utilizing generally accepted numerical conventions and standard rounding principles. For public accessibility, this report is published simultaneously on the corporate website.

Information Quality Management

Internal Review

Disclosed data, compiled by the Office of Sustainability and Responsibility, originates from the Corporate Sustainable Development Committee and respective responsible departments. Following rigorous departmental head validation and external assurance, this report received official authorization from the Board of Directors prior to publication.

External Assurance

Independent third-party Green Mountain United Accounting Firm offered limited assurance, following the “Assurance Engagements other than Audits or Reviews of Historical Financial Information” standard, issued by Accounting Research and Development Foundation and referencing the International Standard on Assurance Engagements 3000 (Revised).

External Verification

Independent third-party Universal Certification Service Co., Ltd. (UCS) conducted the verification in accordance with the GRI Standards, SASB, TCFD, and entity developed criteria. The verification achieved a "Moderate" level of assurance under Type 1 and Type 2 of AA1000AS v3, and applied ISSA 5000 limited assurance procedures (limited to the indicators listed in Appendix I of the Assurance Statement), confirming compliance with the assurance criteria. For detailed verification scope, methodologies, and results, please refer to the attached Assurance Statement.



Contact Information

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Governance

1.1	Governance Structure	58
1.2	Sustainability Management Framework	61
1.3	Risk Management Framework	63
1.4	TCFD	67
1.5	Ethical Management	76
1.6	Information Security	81
1.7	Supply Chain Management	84
1.8	Customer Communication	88
1.9	Intellectual Property Management	92



Infinite Cycle of Universal Peace

Created by Chairman Nelson An-ping Chang, it arches like a rainbow on a high platform, overlooking all life. Firm yet supple, flawless within and without, it is a rare feat of craft. Made from TCC's UHPC, it bears the Buddhist lotus, the Islamic star and crescent, the Christian cross, and the symbol of peace. In sunlight, the shifting shadows speak of seeking common ground amid difference, as if all the world's lives and cultures had merged into one family longing for peace.



Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

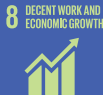
Employee

Nature

Social Inclusion

Appendix

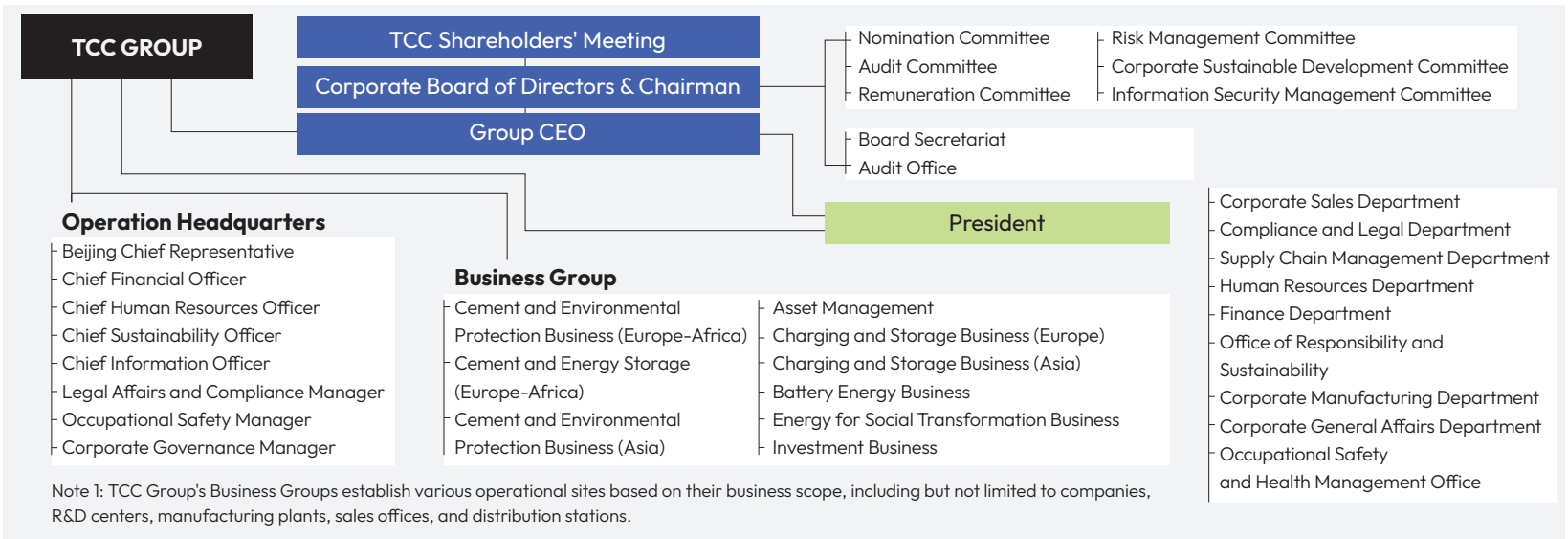
Alignment with SDGs



1.1 Governance Structure

TCC is committed to establishing a sound Governance system that is innovative, diverse, and fair, ensuring the Company's operational resilience, growth, and transparency.

TCC Group Holdings Organization Structure



The 25th Board of Directors

TCC's Board of Directors serves a three-year term and is eligible for re-election. The 25th Board was elected on May 21, 2024, with an average tenure of 10.41 years. Female directors and independent directors each account for 33% of the Board, exceeding the FSC's Listed Companies Sustainable Development Action Plan.

Directors possess diverse industry experience in energy, environmental protection, cement, M&A, and IT, with professional expertise spanning management, international markets,

risk management, accounting, finance, law, and ESG.

All director candidates, including independent directors, are nominated through a rigorous process by the Nomination Committee, which assesses their qualifications, industry expertise, technical skills, experience, gender, and independence, aligning with the Company's short, medium, and long-term development strategies, with priority given to female candidates.

Independent director qualifications adhere to

the Securities and Exchange Act, TWSE independence criteria, and relevant TWSE regulations. All candidates are approved by the Board and elected at the Shareholders' Meeting. The liability of TCC and its subsidiaries' directors and supervisors for their duties is handled in accordance with Taiwan's laws. TCC maintains Directors and Officers Liability Insurance, reviewed annually to mitigate risks for directors, supervisors, key officers, and the Company. Most directors of TCC's subsidiaries in Mainland China and overseas are natural persons.

Board Operations

TCC's Board of Directors convenes at least quarterly. Relevant departments report to the Board on operational status, key work progress, and improvements. Significant resolutions are promptly disclosed on the Market Observation Post System (MOPS) and concurrently on [Investor Relation Section of TCC's Official Website](#).

By the end of 2025, 10 board meetings were held, with an average director attendance rate (including proxies) of 100%. Directors recuse themselves from discussions and voting on matters involving potential conflicts of interest, either personal or for the legal entities they represent, by proactively disclosing such interests during the meeting as required.

TCC KEY FACTS

First cement company selected
2026 Corporate Knights Global 100

Global 100
Most Sustainable
Corporations





Overview

Governance

Governance Structure

- Sustainability Management Framework
- Risk Management Framework
- TCFD
- Ethical Management
- Information Security
- Supply Chain Management
- Customer Communication
- Intellectual Property Management

- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Appendix

Alignment with SDGs

8

DECENT WORK AND ECONOMIC GROWTH

9

INDUSTRY INNOVATION AND INFRASTRUCTURE

Table of the 25th Board of Directors

Name	Age ²			Average Term of Corporate Directors	External Independence ³	Industry Experience ⁴	Professional Expertise
	31-50	51-70	>71				
Nelson An-ping Chang	♂	Representatives of corporate director	✓	7.53	Executive Director	Raw Materials	
Kenneth C.M. Lo	♂	Representatives of corporate director	✓	23.54	Director with Independence	Banking and Investment	
Yu-Cheng Chiao	♂	Representatives of corporate director	✓	1.62	Director with Independence	Information Technology	
Eric Chen Sun Te	♂	Representatives of corporate director	✓	9.53	Director with Independence	Banking and Investment	
Kang-Lung (Jason) Chang	♂	Representatives of corporate director	✓	13.53	Director with Independence	Raw Materials	
Liz Wang	♀	Representatives of corporate director	✓	13.53	Director with Independence	Raw Materials	
Roman Cheng	♂	Representatives of corporate director	✓	7.53	Executive director	Banking and Investment	
Kung-Yi Koo	♂	Representatives of corporate director	✓	7.53	Executive director	Raw Materials	
Por-Yuan Wang	♂	Representatives of corporate director	✓	22.52	Director with Independence	Information Technology	
Chien Wen	♂	Representatives of corporate director	✓	22.52	Director with Independence	Raw Materials	
Victor Wang	♂	Independent Director	✓	12.53	Director with Independence	Industrial - Professional Services	
Lynette Ling-Tai Chou	♀	Independent Director	✓	7.53	Director with Independence	Public Utilities - Educational Services	
Sherry S. L. Lin	♀	Independent Directors	✓	4.45	Director with Independence	Industrials - Professional Services	
Ruu-Tian Chang	♀	Independent Directors	✓	1.62	Director with Independence	Information Technology	
Man-Jung Chan ⁵	♀	Independent Directors	✓	0.6	Director with Independence	Public Services - Education	

● Business Management ● International Markets ● Risk Management ● Accounting and Financial Analysis ● Law ● ESG

Note 2: Board member age distribution: 47% are over 71, 47% are between 51 and 70, and 6% are between 31 and 50. Note 3: Director external independence is assessed based on the following criteria. Non-executive directors must meet at least four of these, including at least two of the first three: (1) The director was not an executive officer of the Company in the past year. (2) In the current year, the director and their family members have not received more than US\$60,000 from the Company or any subsidiary, except as permitted under SEC Rule 4200. (3) No family member of the director is an executive officer of the Company or any subsidiary in the current year. (4) The director is not a consultant to the Company or management and has no material interest in any consulting firm. (5) The director has no material interest in any significant customer or supplier. (6) The director has no personal services contract with the Company or its management. (7) The director has no material interest in any non-profit organization receiving significant contributions from the Company. (8) In the past year, the director was not a partner or employee of the Company's external auditor. (9) The director has no conflicts of interest that would interfere with independent judgment. Note 4: Director industry experience is identified based on the GICS Level 1 classification. Note 5: Elected at the 2025 Annual Shareholders' Meeting (replacing one independent director who resigned for personal reasons on October 9, 2024). Note 6: All Board members (representatives of institutional directors and independent directors) are citizens of the Republic of China. Note 7: Board information as of December 31, 2025.

TCC's Remuneration Committee Charter mandates the regular evaluation of director performance to determine remuneration based on results. For information on individual director remuneration, please refer to [2025 Annual Report](#).

Outstanding External Board Performance Evaluation

TCC has established the Rules for Performance Evaluation of Board of Directors to regularly evaluate the performance of the Board and its functional committees. Internal evaluations are conducted annually, and external evaluations by independent experts are conducted at least

every three years. The evaluation covers five aspects: Directors' participation in company operations, enhancement of Board decision-making quality, Board composition and structure, Director selection and continuing education, and Internal Control.

The 2025 external evaluation results were excellent, and the report was submitted to the Board on March 11, 2026. For details, please refer to [TCC's official website](#).



Overview

Governance

Governance Structure

- Sustainability Management Framework
- Risk Management Framework
- TCFD
- Ethical Management
- Information Security
- Supply Chain Management
- Customer Communication
- Intellectual Property Management

- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Appendix

Alignment with SDGs



Functional Committees

To enhance Board governance, TCC has established functional committees under the Board, each with distinct responsibilities and functions. These committees assist in reviewing proposals and strengthen the quality of Board decision-making.

Audit Committee

▲ 96% ■ 100%

Established and revised Internal Control systems and operational guidelines for significant financial and business matters, reviewed securities-related issues, financial statements, and matters involving directors' conflicts of interest.

Remuneration Committee

▲ 100% ■ 100%

Reviewed and established the remuneration system and performance evaluation for directors and managers, and approved their salaries and compensation.

Risk Management Committee

▲ 100% ■ 100%

Overseeing and establishing the Risk Management Framework, and supervising overall risk management and coordination.



Information Security Management Committee

▲ 100% ■ 100%

Formulates and reviews cybersecurity management policies and frameworks, assesses cybersecurity management performance, and plans the future cybersecurity, privacy, AI Governance frameworks, and quantum computing cryptography protection enhancements for the group.

Corporate Sustainable Development Committee

▲ 100% ■ 100%

The Company promotes and oversees sustainable development goals and initiatives across governance (G), environmental (E), and social (S) dimensions to safeguard the interests of the Company, its employees, shareholders, and other stakeholders.

Nomination Committee

▲ 91% ■ 100%

TCC has established selection processes for directors (including independent directors) and senior executives. TCC also implements ongoing training programs for directors and regularly review director performance, board member evaluations, and senior executive succession plans.

Committee Charter ▲ Actual Attendance ■ Including Attendance by Proxy



Director ESG Training Program

TCC actively enhances board members' sustainability knowledge to support effective oversight and ensure regulatory compliance, focusing on sustainable development issues and risk trends.

In 2025, ESG training averaged 10 hours per director, totaling 156 hours, with courses including Sustainability-Driven Global Transformation and Deepening Risk Management and Building Corporate Resilience. For details on directors' training, please refer to [2025 Annual Report](#).

Tax Governance

TCC has established the [Global Tax Policy and Management Guidelines](#), applicable across the entire group, to align with international tax governance trends. TCC rigorously complies with all relevant tax laws and regulations, adapt to new accounting standards as required by authorities, and provide necessary supporting documents per

tax authority audit requirements, maintaining a robust tax compliance mechanism and governance transparency. TCC carefully assesses the tax implications and associated risks of significant transactions and decisions and consult external professional tax and legal advisors as needed.

Board of Directors	The ultimate decision-making and oversight body for tax governance, responsible for approving tax governance policies and ensuring their effective implementation.
Finance Department of Corporate Headquarters	The tax management unit is responsible for overall tax planning and management. It reports the execution of tax management to the Board of Directors annually after the income tax filing is completed.
Accounting Departments of Subsidiaries	Responsible for tax filing and execution.



Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

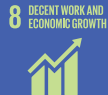
Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY INNOVATION AND INFRASTRUCTURE

1.2 Sustainability Management Framework

Decision-making and Supervision Process for Sustainable Development

TCC's Board of Directors oversees our sustainable development, monitoring its progress and governance structure. The Corporate Sustainable Development (CSD) Committee, reporting to the Board, meets at least twice yearly to drive, approve, and supervise sustainability initiatives. The CSD Committee comprises six members, including the Chairman (Committee Convener),

the President (also a TCC Director), and four other directors, with independent directors accounting for 50%. All members possess ESG expertise. Seven functional groups operate under the Committee, each composed of senior executives and personnel from relevant departments, assigned ESG-related tasks based on their departmental functions, extending to subsidiaries.

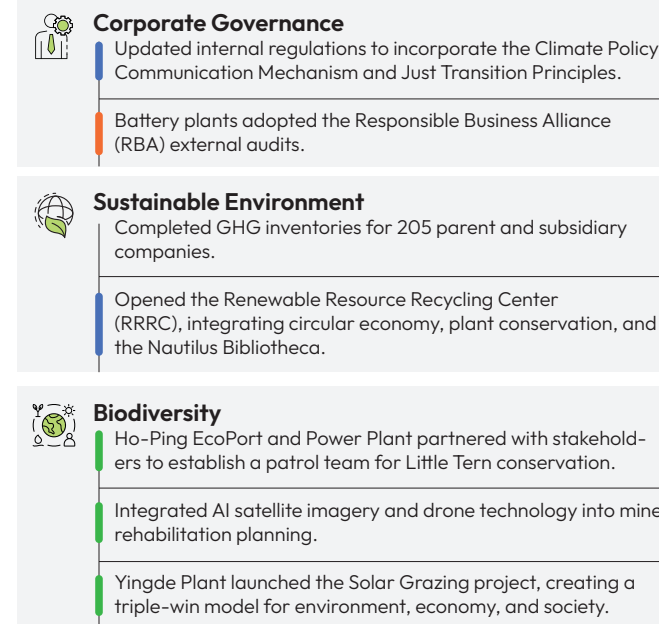
The Chief Sustainability Officer (CSO) coordinates and manages the sustainability projects of these functional groups, reporting regularly to the management team during the bi-weekly operational meetings chaired by the Chairman. Progress is consolidated and presented by the CSO or relevant business unit heads to the CSD Committee for review. The Board of Directors confirms the Company's

sustainable development and ESG management policies based on the resolutions of the CSD Committee, presented by the CSO or relevant business executives. The Board also oversees and tracks the management team's annual sustainable development implementation and the achievement of Sustainability Goals to strengthen the corporate structure. Furthermore, the Board evaluates the effectiveness of related strategies or reviews their progress through quarterly reports from the management team, which include sustainable development matters, and urges the management team to adjust when necessary.

Organizational Chart of the Corporate Sustainable Development Committee



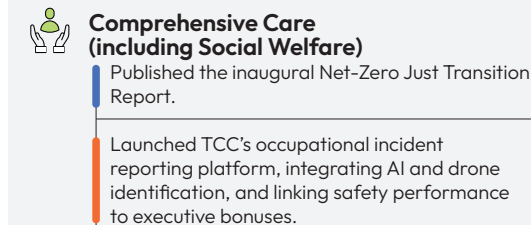
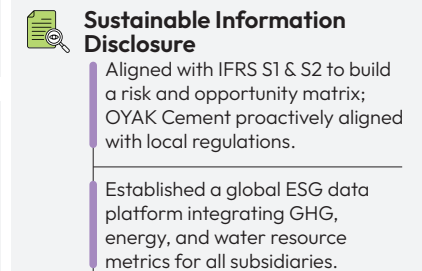
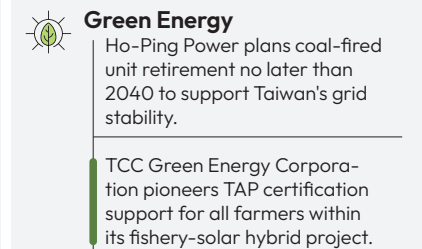
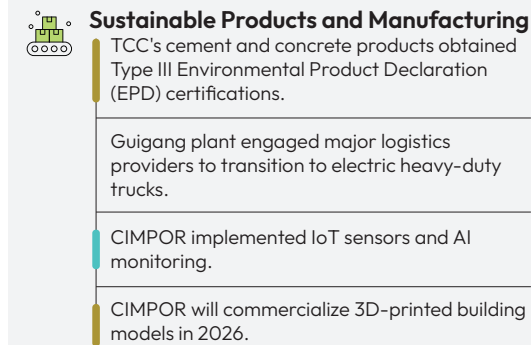
FUNCTIONAL GROUPS



Related to material topics

2025 Board Supervision of Sustainability Project Implementation Results

Stakeholder Engagement & Just Transition	Disaster Risk Control	Biodiversity	Green Energy and Energy Storage Business
Low-Carbon Products and Services (Construction Methods)	AI Process & Information Management	Corporate Governance	



[Sustainable Development Best Practice Principles](#) For meeting minutes and other information, please visit the [Investor Relation Section of TCC's Official Website](#).



Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

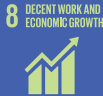
Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



Management Succession Plan

In addition to professional skills, key management personnel must possess organizational leadership, communication and collaboration, business operation, innovative logic, and problem-solving capabilities. TCC plans training courses annually for management personnel, including the Chairman, President, managers, and mid-level supervisors, to enhance their professional knowledge and leadership skills.

Through project assignments, evaluations of mid-to-high-level executives, cross-business unit rotations, and expatriate experience, TCC gradually cultivates and establishes a complete talent pipeline. With a dual focus on long-term training in professional abilities and core competencies, TCC fosters strategic thinking, which, combined with annual performance evaluations, serves as the basis for the succession of key management personnel. TCC has also formulated a CEO succession plan to ensure the continuity of the company's strategy and operations. For more information, please visit the [TCC's official website](#).

Management Team Remuneration Policy

The remuneration policy for TCC's management team and managers is determined by the Board of Directors following review by the Remuneration Committee. The policy considers the Company's business strategy, operational

and financial performance, individual performance, and market salary levels. Variable remuneration includes short-term incentives (quarterly and annual performance bonuses) and a long-term incentive through a treasury stock plan to support long-term business development. The CEO's variable remuneration is entirely granted in stock, vested in installments over a three-year period to the individual's stock account, strengthening the link to the Company's long-term performance.

Starting in 2025, TCC integrated Sustainable Development strategies and targets into the short- and long-term incentive compensation of senior executives to encourage a focus on long-term comprehensive performance and realize our vision of sustainable operations. Sustainable Development performance indicators will account for 40% of the overall performance assessment, directly impacting annual performance bonuses and long-term incentive awards. This aims to guide the

management team to proactively fulfill ESG commitments while pursuing financial growth. Furthermore, the Chief Financial Officer, the head of procurement, and the procurement department will have a specific indicator, Control and Transformation of High Carbon Emission Purchased Goods and Services, accounting for 5% of their variable compensation, to reinforce requirements for suppliers to comply with climate-related regulations and gradually reduce the Scope 3 Emissions intensity of raw materials.

Remuneration Indicators and Material Sustainability Topics

Performance Indicators		Corresponding to Material Sustainability Topics
CEO	Financial Performance: 30%	
	Return on Assets (ROA)	Operating Performance
	Return on Equity (ROE)	Disaster Risk Control
	Net profit after tax	
	Growth rate	
Management Team (including the CEO)	Individual Performance: 30%	
	Task performance and achievement rate	-
	Innovative AI Applications and Benefits Realized	AI Process & Information Management
	Regulatory compliance and risk prevention, assessing long-term risks	Corporate Governance
	Fostering talent, enhancing employee capabilities and qualities, and cultivating a global perspective.	Talent Cultivation & Development
Sustainable Development: 40%		
Commitment to eco-friendly R&D to increase revenue share: Sales ratio of low-carbon products (10%)		Low-Carbon Products & Services (Construction Methods)
Advancing process energy efficiency and decarbonization: SBT carbon reduction performance, green electricity usage (10%)		Climate Action and Net Zero Emissions
Enhancing resource circulation and recycling: Alternative fuels application (10%)		Resource Co-processing & Circular Economy
Strengthening supply chain assessment and local procurement: Sustainable supply chain management (5%)		-
Zero Occupational Health and Safety (OHS) penalties		Disaster Risk Control, Workplace Health & Safety, Corporate Governance, and Stakeholder Engagement & Just Transition
Strategic projects covering corporate governance and social engagement: Zero water resource penalties, share of women in total workforce (5%)		
Related to risk management		



Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

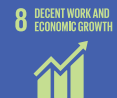
Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



1.3 Risk Management Framework

Risk Management Organizational Structure

To enhance corporate governance and establish a robust risk management system, ensuring the sustainable operation of the Company and its subsidiaries, the Board of Directors serves as the highest decision-making body for risk management at TCC. The Board directly participates in and systematically manages risks. A functional Risk Management Committee has been established to assess the potential impact of various business operations on the Company's operations using qualitative or quantitative methods, and to mitigate potential risks to an acceptable level. International standard frameworks have been introduced to raise risk awareness among all employees, building an effective risk management mechanism and response capability.

TCC has established a three-lines-of-defense Risk Management system. The first line involves each department identifying and assessing risks that could impact business objectives. The second line is the cross-departmental Risk Management Working Group, which regularly discusses and coordinates risk management activities. The third line comprises the Board's Risk Management Committee, along with the Audit Office and the Legal Affairs and Compliance Manager, who provide regular oversight and improvement recommendations. The Risk Management Policy was further revised in 2025 to require departments to integrate risk management measures into new product/service development and investment project evaluations.

For more information on risk management, including ISO 31000 and ISO 22301, please refer to the [Risk Governance Enhancing Operational Resilience](#)

Risk Management Committee

The Risk Management Committee reviews risk management implementation and response measures, regularly identifying operational risks, including approving risk appetite and levels, reviewing risk identification and analysis reports, and identifying physical and transition risks related to climate change. The Committee meets at least once annually (twice in 2025). Each department reports on status, reviews, and response strategies based on risk identification results, submitting these to the Board for oversight and tracking of the management team's risk management execution. To ensure operational effectiveness, internal risk management audits are carried out by the Risk Management Working Group, which regularly reviews risks aligned with ISO 31000 principles, frameworks, and processes.

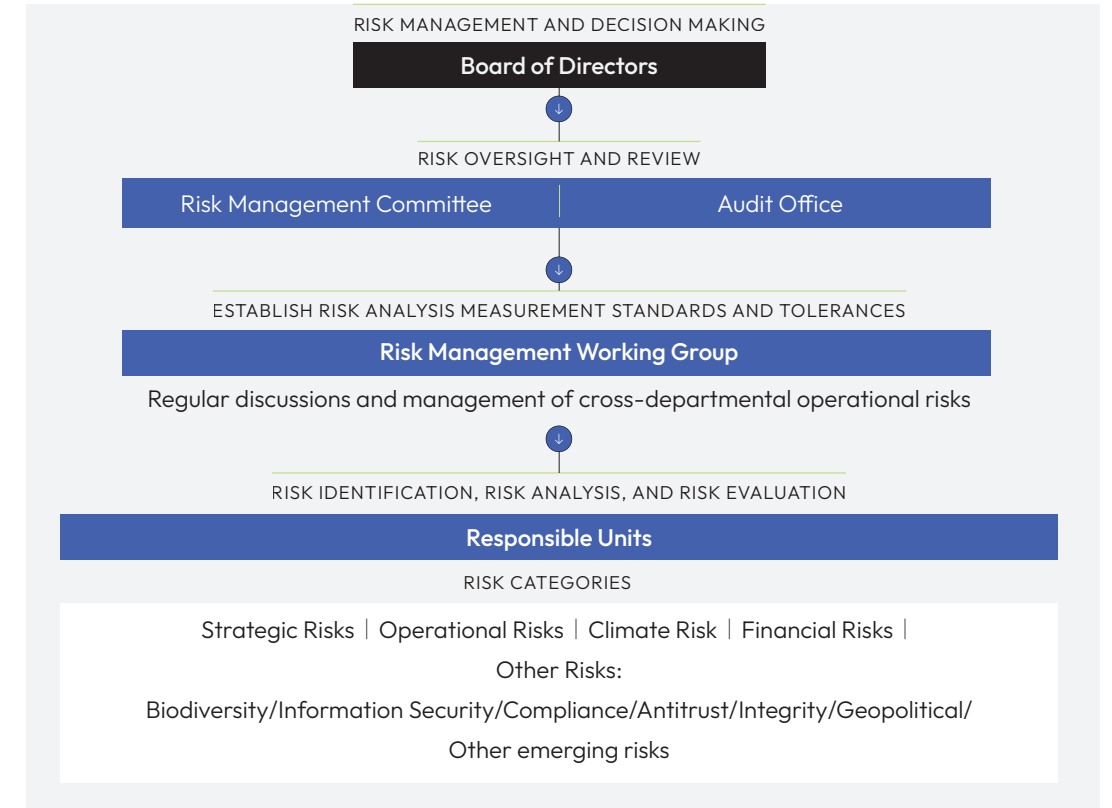
TCC KEY FACTS

Employee risk
awareness training

12,677.7 hours

13,431 person-times

| Global Operations



Risk Assessment Method

TCC identifies potential risks across its 11 industries, 20 core markets, and value chain that could impede objectives or cause losses. This process considers global risk trends, peer risk information, TCC's risk management policy, and SASB standards. Utilizing methods like process analysis, scenario analysis, and surveys, we integrate internal and external risk factors and

stakeholder concerns through top-down and bottom-up approaches. Identified risks are analyzed for probability and impact, quantified, and modeled statistically to determine risk levels, rankings, and corresponding response strategies, forming the basis for subsequent risk assessment and mitigation.

[Risk Management Policy](#)



Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

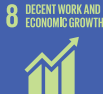
Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



Establish a Scientific Risk Database Model

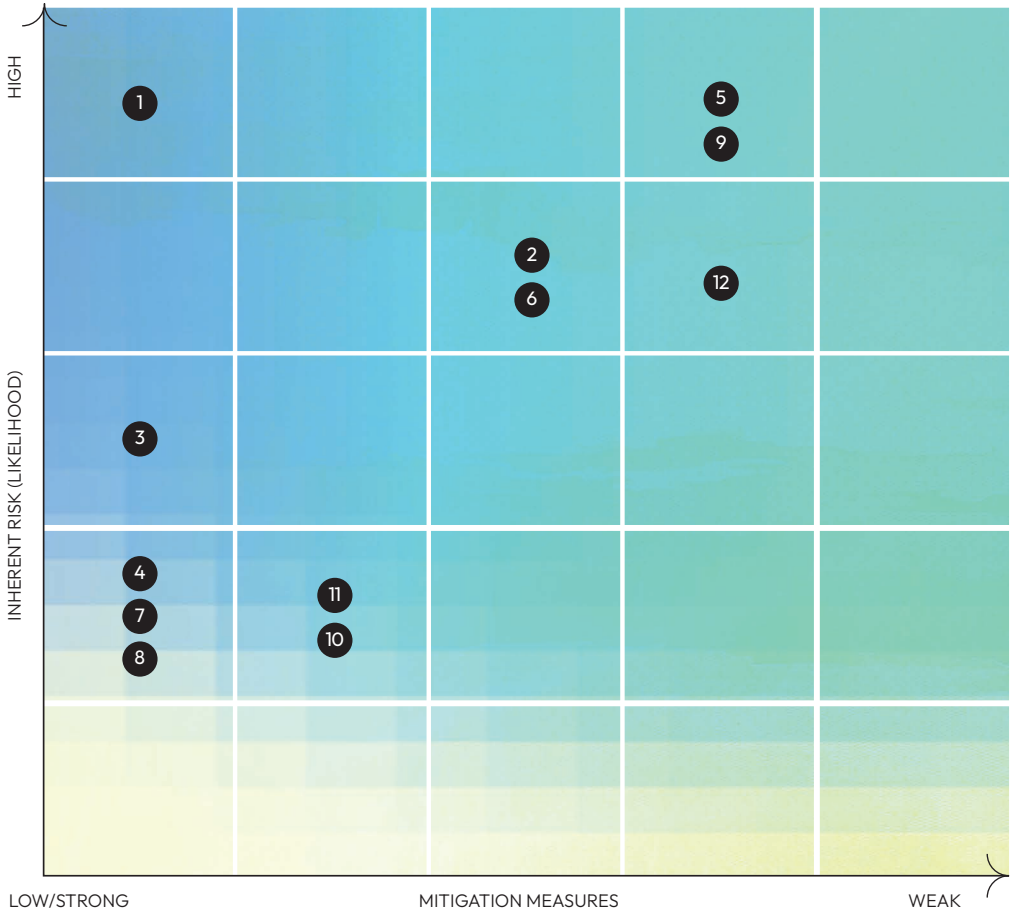
TCC has leveraged data analysis to enhance Risk Management. By integrating historical financial data with existing risk mitigation measures, we assess Residual Risk and prioritize risks based on their impact and likelihood. The assessment results are submitted to senior management for review to ensure alignment with operational

decision-making and inform strategy development. To further strengthen Risk Management, executive compensation includes metrics for risk prevention, Long-Term Risk Assessment, and Occupational Health and Safety (OHS), as detailed in CH 1.2. Additionally, during the materiality assessment process, management analyzes the operational impact and risk

implications of various sustainability topics, incorporating Stakeholder engagement feedback. The materiality matrix and its correlation with Risk Management are available on the ESG section of [Investor Relation Section of TCC's Official Website](#).

TCC prioritizes the prevention and management of Fire Risk and Natural Disaster (Earthquake). We build a robust resilience management system through risk transfer, technical backup, and system upgrades.

2025 Risk Matrix



- 9 Fire Risk
- 5 Natural Disaster (Earthquake)
- 12 Geopolitical Risk
- 6 Fluctuation in Product and Raw Material (Energy) Prices
- 2 Poor Occupational Health and Safety Management
- 1 Industry Development and Competition - Mainland China Cement Market
- 11 Interest Rate/Exchange Rate Fluctuations
- 3 Insufficient Information Security Management
- 10 Support Intensity from Insurance and Financial Institutions for Investment and Financing
- 7 Integrity and Ethics-related Penalties
- 4 Losses Due to Ineffective Strategic Management
- 8 Carbon Trading/Carbon Fees/Carbon Tax for Total Carbon Emissions Control

Related to Material Sustainability Topics | by Materiality

Financial Risk Transfer | Risk transfer through commercial insurance.

Business Continuity | Implemented backup energy storage systems to ensure uninterrupted critical operations.

Strengthening Risk Management | TCC aims to adopt ISO 31000 and ISO 22301 by 2026.

External Audit Standards | Actively aligning with RBA to enhance supply chain and site safety inspections.

Dedicated Firefighting Capability | Established an in-house fire brigade with professional firefighters.

For more information, please refer to TCC's IFRS Sustainability and Task Force on Climate-related Financial Disclosures (TCFD) S1 and S2 pilot versions (expected to be released in Q3 2026).



Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



Emerging Risks

TCC has identified two emerging risks: Global Economic Volatility Risk Due To Geopolitical Conflicts and AI Technology Advancement-Related Risks. These risks could significantly impact the Company's long-term development and stability. Early identification allows for proactive monitoring and mitigation measures to reduce potential impacts.

TCC 2025 Emerging Risks

Global Economic Volatility Risk Due To Geopolitical Conflicts		AI Technology Advancement-Related Risks
Category	Geopolitics	Technology
Risk Factor Description	Rising geopolitical tensions exacerbate macroeconomic uncertainties. Factors such as volatile energy prices, constrained supply of critical raw materials, and supply chain adjustments may persistently impact corporate cost structures and operational stability.	The rapid evolution of AI technology presents both opportunities and challenges. McKinsey & Company research indicates that only 20-30% of companies effectively scale AI deployments, highlighting the urgent need for robust AI Governance and organizational readiness. Without proper model governance and cybersecurity controls, generative AI can become a target for malicious actors. Furthermore, inconsistent data quality can lead to biased outputs, impacting decision-making, operational processes, and introducing new risks to business operations.
Impact	1. Geopolitical conflicts can trigger international financial market volatility, leading to significant exchange rate fluctuations. For a group operating in multiple countries, including Türkiye, Portugal, and Africa, exchange rate volatility impacts foreign exchange gains and losses and the efficiency of capital allocation. Furthermore, high inflation and currency depreciation may increase local operating costs, affecting overall profitability. 2. Inflation driven by volatile international crude oil prices and transmitted through energy markets, indirectly impacts fuel costs for cement production, pressuring the Group's overall cost structure. 3. Disruption to key global shipping routes due to geopolitical conflicts could impact energy and raw material transport stability, increasing supply chain disruption risks.	1. Inadequate access control or insecure generation environments for AI systems handling large volumes of internal and external data can lead to data breaches, model manipulation, or hacking incidents. 2. Data bias or algorithm limitations may lead to incorrect information, affecting operational judgment. 3. The introduction of AI technology is transforming existing processes and job skill requirements. Failure to promptly upskill employees or adapt organizational workflows may lead to challenges in talent adaptation. 4. Rapid development of global AI regulatory frameworks (e.g., EU AI Act) may lead to additional compliance costs.
Mitigation Measures	1. TCC leverages cross-regional fund allocation and natural hedging mechanisms, aligning local income and expenditure currency configurations to mitigate exchange rate volatility and continuously optimize our financial Risk Management strategies. 2. Continuously increasing the proportion of alternative fuels and expanding the use of renewable energy to reduce reliance on fossil fuels, while optimizing procurement and cost control mechanisms to mitigate the impact of raw material price fluctuations. 3. Diversifying sources of key raw materials, assessing and establishing secondary suppliers, strengthening cross-regional supply chain coordination, and planning alternative transportation routes and diversified logistics to enhance overall supply chain resilience.	1. Issued an AI policy to guide the information security team. 2. TCC is developing a proprietary, closed-loop AI system for TCC by integrating mainstream AI models. This approach ensures data security while allowing us to train our own models to minimize bias in generated content. 3. TCC Lyceum introduced MIT AI lectures on demand, empowering employees to alleviate anxiety. 4. Launched All-Staff AI Action Year: AI Pilot Program, an internal AI application proposal competition, marking the start of a company-wide AI action year.



Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY INNOVATION AND INFRASTRUCTURE



2025 TCC GROUP HOLDINGS SUSTAINABILITY REPORT

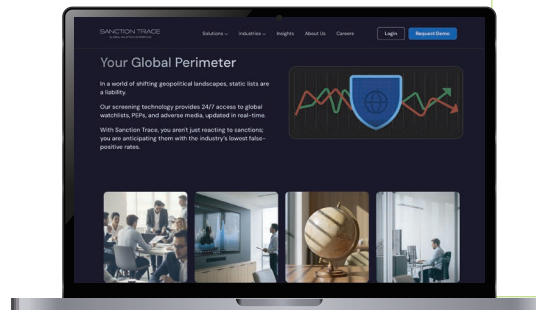
Risk Education and Training

The Risk Management Committee conducts annual risk education and training for directors, mid-to-high-level management, and all employees. The 2025 curriculum, themed Deepening Risk Management - Building Corporate Operational Resilience, aims to enhance corporate resilience based on international standards, build market trust, and improve governance maturity.

The core of risk management has shifted from passive defense to strategic resilience building. We plan to require 100% of non-executive directors to undergo annual training. All employee courses include tests to ensure comprehension, and a 10% All-Employee Sustainability Action indicator, which includes managing or reducing corporate risks, is incorporated into annual performance evaluations to reinforce employee implementation of risk control.

SANCTION TRACE

GLOBAL SANCTION SCREENING



ACTION SPOTLIGHT

CIMPOR & OYAK Cement Implement Sanction Trace to Manage Global Sanctions Risks

From 2017 to March 2025, the number of global sanctions targets surged by 445%, with over 82,000 individuals and entities sanctioned, making sanctions compliance a key governance issue for multinationals. CIMPOR & OYAK Cement operate across emerging markets in Europe and Africa, navigating diverse legal and regulatory landscapes. This necessitates diligent management of Client, supplier, and employee compliance, as well as adherence to port entry bans and international vessel sanctions lists. CIMPOR & OYAK Cement have established a Global International Sanctions Policy and implemented screening and due diligence procedures. In November 2025, We deployed the AI-powered Sanction Trace platform for real-time monitoring and systematic risk management.

Sanction Trace provides dashboards visualizing the number of entities and their risk profiles. It offers real-time detection and translation of news, equity and organizational changes, and sanction list updates, supporting multinational operations. Online questionnaires can be configured based on entity risk attributes for direct responses, accelerating sanction risk investigations. 225 cases were completed in November-December 2025. Integration with the SAP Ariba procurement system and the addition of personnel background and vessel check functions are planned for 2026 to enhance operational efficiency.



CIMPOR & OYAK Cement Awarded 2025 European Risk Management Association Innovation Prize

Risk Integration and Business Continuity Management Plan:

- **Top-down Supervision** | Establishment of a dedicated committee
- **FIZIX Tech Monitoring** | Integrating thousands of sensors for early anomaly detection and automated alerts
- **Learning from Experience** | Adopting ADIS Digital Alert System and Family Emergency Plan based on Türkiye Earthquake Response
- **Global Expansion** | Full implementation in Türkiye, ongoing optimization in Portugal, and expansion to African sites

CIMPOR's Risk Integration and Business Continuity Management Plan in Portugal and Türkiye has been recognized for innovation, strengthening internal controls and corporate resilience. In addition to the FERMA Award, CIMPOR and OYAK Cement prioritize transparency and trust in its operations, aligning its internal audit mechanisms with international standards, and has been honored with the Corporate Awareness Award by the Institute of Internal Auditing - Türkiye (TIDE).



Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

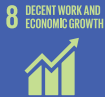
Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



1.4 TCFD

Governance

Regarding the climate governance framework, the Board of Directors serves as the highest supervisory and decision-making body, integrating climate change-related risks and opportunities into environmental and operational decisions. The Board members possess diverse backgrounds in energy, environmental protection, the cement industry, mergers and acquisitions, and information technology. Their expertise covers business management, risk management, financial accounting, law, and ESG. Through continuous training, they strengthen their understanding of climate science, low-carbon transition pathways, and their financial impacts to enhance the quality of climate governance decisions.

Under the Board, TCC establishes the Corporate Sustainable Development (CSD) Committee and the Risk Management Committee as the core governance and execution framework for climate-related issues. The CSD Committee approves and supervises climate and low-carbon transition strategies, performance targets, and related implementation plans. It convenes at least twice a year and reports to the Board (convening four times in 2025), assisting the Board in grasping sustainable development directions and performance achievements to ensure alignment with the overall corporate

strategy. The Risk Management Committee identifies, assesses, and manages various operational risks, including climate change, covering physical risks and transition risks, and leads the planning and promotion of related response measures. Through a systematized risk management mechanism and a tiered reporting framework, the Committee regularly reviews risk control effectiveness and reports to the Board at least once a year (averaging twice a year, convening twice in 2025) to ensure the effective execution and continuous optimization of risk management decisions.

TCC appoints the President as the highest executive responsible for climate-related risk management to promote related response strategies. Since 2023, TCC has established climate-related performance indicators and targets, continuously tracking their execution after Board approval and regularly reporting to the Board to strengthen the supervisory mechanism and performance management of climate governance. In addition, the Audit Committee oversees the effectiveness of internal controls for sustainability information, regularly reviews climate-related audit results, and adjusts

systems as needed. The Remuneration Committee formulates and evaluates managers' sustainability and climate performance to determine compensation, ensuring alignment with corporate strategy. Facing rapid policy and market changes and high climate uncertainty, TCC systematically identifies and assesses climate-related risks and opportunities to grasp potential impacts, and accordingly plans six major climate action plans to continuously strengthen corporate resilience and low-carbon transition capabilities.



Climate-Related Risks and Opportunities Main Governance and Management Framework Responsibilities



Risk Management | Climate-Related Risks and Opportunities Management Process

TCC has passed the [Risk Management Policy](#) and the [Risk Management Committee Charter](#) to construct a systematized risk governance framework. Through regular meetings, it reviews the implementation and effectiveness of climate actions to continuously grasp potential risk changes. Simultaneously, it integrates climate-related risks involved in operational activities into overall assessment and control to ensure they remain within an acceptable range, and refines related operational mechanisms to strengthen its response capabilities to climate change and external environmental uncertainties.

Definition of Time Horizons for Risks and Opportunities
Through identification and assessment, TCC deeply understands the climate-related risks and opportunities it faces, and identifies the time horizons over which each risk and opportunity is expected to impact TCC's outlook:

STEP 1	STEP 2	STEP 3	STEP 4
Risk and Opportunity Identification	Risk and Opportunity Analysis	Response and Adaptation	Management and Supervision
Building on previous climate risk and opportunity identification results, international scientific and technical reports, and industry trends in local operational regulations, TCC updates climate-related risk and opportunity issues. Based on the SASB standards applicable to individual industries involved in key operations and their disclosure topics, TCC is gradually identifying and incorporating climate-related risks and opportunities across various industries.	Hold cross-departmental workshops to understand the substantial impacts, timing, sources, and expected financial impacts of various risks and opportunities on TCC. Analyzed and evaluated questionnaire results, incorporating perspectives from external experts and senior executives to identify key risks and opportunities.	By linking climate policies, operational production, products and services, and external communications to existing climate mitigation and adaptation strategies, TCC developed and implemented six major climate action plans.	Regularly convenes meetings to track the progress of the six major climate actions addressing risks and opportunities, utilizing the carbon reduction management platform to track and manage cement plant carbon reduction performance. Finally, the Risk Management Committee submits climate-related risk metrics and targets tracking reports to the Board.
RESULT	RESULT	RESULT	RESULT
TCC listed 5 key climate-related risks and 5 climate-related opportunities based on TCFD classification.	TCC identified three major risks and three key opportunities based on IFRS S2 Climate Disclosure.	Six Major Climate Actions	Management Metrics of the Six Major Climate Actions and Performance of Various Non-Financial Metrics.

Period Definition	Linkage to Strategic Decision-Making	Description
Short-Term Within 2 years (2026 to 2027)	Annual review and rolling adjustment of strategic initiatives planned for the upcoming 1–2 years.	TCC implements a rolling biennial review of key strategic items to ensure operational and sustainable transitions align with the rapidly changing environment. Facing intensifying environmental risks and policy challenges, we systematically review potential risks and opportunities by integrating expert advice, global research reports, and market observations to guide corporate strategy adjustments.
Medium-Term Over 2 years to under 4 years (2028 to 2029)	Aligned with the typical 4-year cycle for major strategic decisions; periodic reassessment and recalibration.	TCC's major decision-planning cycle averages 2 to 4 years, featuring regular reviews and rolling adjustments to align long-term strategies with external conditions. Facing climate risks and transition opportunities, we integrate expert opinions, research data, and international market trends to continuously evaluate the impacts of environmental changes on operations and the industry.
Long-Term Over 5 years (after 2030)	Strategies are expected to yield tangible results post-2030, while TCC's cement and concrete businesses are mapped toward net-zero by 2050 in alignment with policies across our operating locations.	TCC targets net-zero emissions for its cement and concrete businesses by 2050, formulating action plans aligned with Taiwan and Mainland China's net-zero pathways. These strategies are expected to show synergies post-2030, laying the foundation for long-term transition.

Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

8 DECENT WORK AND ECONOMIC GROWTH

9 INDUSTRY INNOVATION AND INFRASTRUCTURE

Identification and Assessment Methods for Climate-Related Risks and Opportunities

The Board of Directors is the highest risk decision-making body, identifying and analyzing risks across four dimensions—strategy, operations, climate, and finance—based on departmental scopes. Climate-related risks are integrated into the Enterprise Risk Management (ERM) framework. For risk assessment, the working group defines the risk appetite and formulates risk management strategies to ensure financial resilience. Climate-related risk assessments cover current and emerging regulations, legal, technology, market, and reputation risks, as well as acute and chronic physical risks, evaluated over short, medium, and long-term timeframes.

When identifying and assessing climate-related risks and opportunities, TCC uses differentiated climate scenarios to enhance analytical completeness and foresight. For physical risks, the SSP5-8.5 high emissions scenario is adopted to evaluate potential impacts of extreme weather on operations and assets under intensifying climate change. For transition risks and climate-related opportunities, the Net Zero Emissions by 2050 (NZE) scenario by the International Energy Agency (IEA) is used to reflect challenges and opportunities from rapid policy tightening and accelerated market and technology transitions. These representative scenarios enable TCC to systematically identify and quantitatively assess risks and opportunities, grasping the potential impacts of different climate pathways on corporate strategy, operational models, and financial performance as a key basis for strengthening climate resilience and strategic planning.

Business Scope Identified and Assessed	Cement and Environmental Protection Business (Europe-Africa), Cement and Energy Storage (Europe-Africa), Cement and Environmental Protection Business (Asia), Asset Management Business, Charging and Storage Business (Europe), Charging and Storage Business (Asia), Battery Energy Business, Energy for Social Transformation Business, Investment Business
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Scenario Setting	
Climate-Related Physical Risk	SSP5-8.5
Climate-Related Transition Risk	NZE 2050
Climate-Related Opportunity	NZE 2050

Analysis of Climate-Related Risks and Opportunities

Short, Medium, and Long Term Climate-Related Risks and Opportunities

Facing climate change and net-zero transition impacts, TCC integrated climate risks into its overall Risk Management Policy and systematically assessed climate-related risks and opportunities in 2025 based on international frameworks. The scope covers nine major business groups—including Cement and Environmental Protection, Charging and Storage Energy, Battery Energy, and Asset Management—extending across Türkiye, Europe, West Africa, the United States, and Australia. Adhering to SASB standards and international norms, the analysis accounted for cross-regional and cross-industry operational characteristics, focusing on compliance, product resilience, and competitiveness. The assessment identified three major risks—financial institutions' ESG support intensity (R1), extreme precipitation events (R2), and carbon pricing/taxes (R3)—and three key opportunities: low-carbon products/services (O1), smart low-carbon production/waste co-processing (O2), and attracting long-term investments (O3). For more information, please refer to [TCC 2025 TCFD REPORT](#).





Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



The Climate-related Risks and Opportunities Identified by TCC in Accordance with TCFD and IFRS S2 Climate Disclosure

Climate-Related Risk		Climate-Related Opportunity	
Transition Risk	Physical Risk		
R1 Support Intensity from Financial Institutions in Investment, Financing, and Insurance	R2 Frequency and intensity of extreme precipitation events	O1 Expand Markets for Low-Carbon Products and Services	O4 Construction and Development of New Energy Projects
R3 Carbon trading/carbon fees/carbon tax for total carbon emissions control	R5 Water Scarcity	O2 Smart Low-Carbon Production and Co-Processing of Waste	O5 Participate in Power Trading Markets
R4 Low-carbon technologies, equipment, and management performance being ineffective		O3 Attract Long-Term Investor Interest	

Strategy

TCC identifies climate-related risks and opportunities with high impact and likelihood, evaluates

whether current measures and strategies are sufficient to respond, and reviews TCC's resilience under different climate-related risks

and opportunities. Through this process, TCC simultaneously analyzes the impact of the aforementioned risks and opportunities on its

current financial position, serving as a decision-making basis for strengthening risk management and resource allocation.

Climate-Related Risk			
	R1 Support Intensity of Financial Institutions' Investment, Financing, and Insurance	R2 Frequency and Intensity of Extreme Precipitation Events	R3 Carbon Trading/Carbon Fees/ Carbon Tax for Total Carbon Emissions Control
Risk Type	Transition Risk Market Risk	Physical Risk Acute	Transition Risk Policy and Legal Risk
Risk Description	Cement and Environmental Protection Business As a high-carbon sector, failing to plan a low-carbon transition will severely lower financial institutions' engagement, decreasing investor interest and creating financing/insurance difficulties. Additionally, since TCC issues green financial products linked to carbon reduction, missing decarbonization targets will increase financing costs. Energy for Social Transformation Business Under the global coal phase-out trend, financial institutions ceasing coal-fired plant financing, insurers refusing coal project coverage, and declining investor interest will significantly impact organizational operations.	Cement and Environmental Protection Business Business interruptions or damage to owned equipment at cement and concrete operating sites cause decreased revenue or increased operating costs. The occurrence of heavy rain and wind disasters may cause fluctuations in raw material quality and interruptions in raw material supply, and may also affect product transportation, causing delivery delays or inability to ship, leading to operational impacts.	Cement and Environmental Protection Business Failing to reduce greenhouse gases under carbon fee mechanisms will increase operating costs. Furthermore, unfair competition arises if a country lacks carbon border taxes while imports bypass carbon costs. Conversely, the EU's Carbon Border Adjustment Mechanism (CBAM) increases import carbon costs, while the EU Emissions Trading System (EU ETS) reduces annual free allowances, exposing EU-based plants to rising carbon cost risks. Energy for Social Transformation Business Without strategic greenhouse gas reduction, TCC will face carbon control regulations like carbon fees, raising operating costs. Failure to fully pass on these costs will trigger profit decline risks.



Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY INNOVATION AND INFRASTRUCTURE

Climate-Related Risk				
	R1 Support Intensity of Financial Institutions' Investment, Financing, and Insurance		R2 Frequency and Intensity of Extreme Precipitation Events	R3 Carbon Trading/Carbon Fees/ Carbon Tax for Total Carbon Emissions Control
Reasonably Expected Timeframes of Occurrence	Short- to medium- and long-term		Short- to medium- and long-term	Short- to medium- and long-term
Impacted Business Models and Value Chains	Business Models Financing activities and insurance		Business Models Cement production and power generation Value Chains Upstream raw material supply; downstream product transportation	Business Models Cement production and power generation Value Chains Downstream construction industry, ready-mixed concrete operators, and other clients; downstream power clients
Strategies and Decision-Making	- Continues to engage with financial institutions and respond to international sustainability ratings - Aligns with IFRS Sustainability Disclosure Standards - Issues green finance instruments to attract investors - Plans the decommissioning of Ho-Ping Power Plant by 2040		- Constructed detention basins and installed 2-meter earth berms on quarry slopes to mitigate flood impacts. - All RMC plants have emergency response procedures; cement plants have formulated typhoon and flood response plans. - Established flood control teams at plants for regular drills and enhanced inspections. - Insured all critical high-risk equipment against natural disasters.	- Execution strategies include alternative clinker, alternative raw materials, alternative fuels, process improvements, waste heat recovery (WHR) power generation, renewable energy, carbon capture, and carbon sinks. - Promotes internal carbon pricing within the cement business.
Corresponding to Six Major Climate Action Plans	Low-Carbon Circular Production Industry-Leading Low-Carbon Construction Materials Low-Carbon and Negative Carbon Technology Innovation Smart New Energy Business		Climate and Natural Disaster Adaptation	Low-Carbon Circular Production Low-Carbon and Negative Carbon Technology Innovation Low-Carbon Supply Chain
Response Cost Estimation	Approximately NT\$5.38 billion		Approximately NT\$91 million	Approximately NT\$10.246 billion



Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



Climate-Related Opportunity				
	O1 Low-Carbon Products and Services Expand Markets	O2 Smart Low-Carbon Production and Co-Processing of Waste	O3 Attract Investors' Long-Term Investment Willingness	
Opportunity Type	Products and Services	Resilience	Markets	
Opportunity Description	Cement and Environmental Protection Business Growing global demand for low-carbon materials drives TCC to develop low-carbon products via alternative raw materials/fuels, process improvements, and energy-saving technologies to boost competitiveness and profits. Promoting new products globally, including Ultra-High Performance Concrete (UHPC), combined with regulations and carbon pricing, heightens clients' carbon reduction awareness and stimulates market demand.	Cement and Environmental Protection Business Government climate regulations and carbon fee incentives reward early low-carbon transitions, granting competitive advantages to advanced operators. TCC Group leads in deploying alternative raw materials/fuels and AI smart manufacturing to enhance energy efficiency and reduce costs. Simultaneously, the Group cuts coal usage through waste co-processing, generating carbon reduction benefits and revenues while strengthening overall carbon competitiveness.	Cement and Environmental Protection Business TCC launches low-carbon products. As an industry leader in responsible production, TCC actively demonstrates its philosophy to institutional investors, media, and product capacity, conveying that TCC has transformed from a sales tonnage-oriented raw material supplier into a high-quality building materials brand.	
Reasonably Expected Time Horizon of Occurrence	Short- to medium- and long-term	Short- to medium- and long-term	Short- to medium- and long-term	
Affected Business Models and Value Chain	Business Model Sales of low-carbon products and services Value Chain Downstream construction industry, ready-mixed concrete operators, and charging service clients	Business Model Cement production	Business Model Cement production and sales of low-carbon products and services	
Strategy and Decision-Making	- Actively develop low-carbon cement and concrete, and UHPC and other low-carbon products - Low-Carbon Circular Production	- Introduce AI for efficient production - Cement kiln co-processing of municipal solid waste and hazardous waste	- Develop Total Climate series low-carbon products and UHPC series products - Raise funds through international capital markets and obtain diverse and flexible financing channels, such as international investment-grade credit ratings, to increase long-term investors	
Corresponding to Six Major Climate Action Plans	Low-Carbon Circular Production Industry-Leading Low-Carbon Construction Materials Low-Carbon Supply Chain	Low-Carbon Circular Production	Low-Carbon Circular Production Industry-Leading Low-Carbon Construction Materials Low-Carbon and Negative Carbon Technology Innovation	
Response Cost	Approximately NT\$138 million	Approximately NT\$12 million	Approximately NT\$6 million	

Scenario Analysis

TCC identified transition risk and physical risk among its top three climate-related risks. To further analyze the financial impact and duration of these risks, TCC selected, "frequency and intensity of extreme precipitation events R2", and "carbon trading/carbon fees/carbon tax for total carbon emissions control R3", for future scenario analysis. This process analyzes potential financial impacts on TCC under various global warming scenarios and policy environments, incorporating results into future resilience strategies to achieve net zero targets.

Risk Type	Scenario Description	Key Parameters	Impact Content	Estimated Temperature Rise	Scenario Source
TRANSITION RISKS	STEPS Existing climate change measures and specific policies formulated by governments	Changes in trading prices across different regions ⁸	Additional expenses over 5–10 years caused by carbon fees or carbon trading	2.4 °C	IEA ⁹
	APS Incorporates the latest climate commitments of various countries, including NDCs and long-term net zero targets			1.7 °C	
	NZE 2050 The global energy sector achieves net zero greenhouse gas emissions by 2050			1.5 °C	
PHYSICAL RISKS	SSP1-2.6 The low emissions scenario refers to the world attempting to achieve sustainability targets but with slow progress	Precipitation changes caused by climate extremes	Business interruption and asset impairment caused by flooding	1.8 °C	IPCC
	SSP5-8.5 Extremely high emissions refer to ultra-high emissions caused by the massive use of fossil fuels globally without climate policies			4.4 °C	

Note 8: Referenced from IEA WEO 2025, Carbon Fee Regulations (2025), and Options for Carbon Pricing in Taiwan (2020).
Note 9: Cited from the IEA World Energy Outlook 2025 (WEO).

Transition Risk | Analysis of Domestic and International Carbon-Related Regulations and Resulting Carbon Pricing Impact

The carbon-intensive cement industry requires close monitoring of greenhouse gas regulations across operating sites. Following Taiwan's 2024 Carbon Fee Charging Regulations, TCC will pay carbon fees in 2026 based on 2025 emissions. Currently, the Ho-Ping and Su'ao plants have secured "Preferential Rate A" and high carbon leakage risk status via approved voluntary reduction plans, achieving a first-year rate of NT\$10 per ton to significantly lower costs. Concurrently, Mainland China included cement in its national carbon emissions trading market in 2025, deploying a phased approach: an initial implementation phase (2024–2026) focusing on data quality and free intensity-controlled allocations, followed by a deepening phase (from 2027) to tighten quotas and enhance market constraints.

Physical Risk | Frequency and Intensity of Extreme Precipitation Events

TCC analyzes its operational sites in Taiwan and Mainland China by referencing physical risk

In 2025, TCC expanded its global footprint and European low-carbon technology integration by increasing its shareholdings in Türkiye's OYAK Cement to 60% and Portugal's CIMPOR to 100%.

CIMPOR's African plants use over 90% biomass

Analysis of Sites	Main Consideration Parameters	Scenarios	Results
Taiwan, Mainland China, and CIMPOR Cement Production Sites Ho-Ping Power Plant	Production volume of cementitious materials	IEA STEPS Carbon Price Under Stated Policies Scenario	Carbon Fee Carbon Trading Financial Impact Results ¹⁰
	Clinker production volume		
	Taiwan Energy Transition Planning		
	Energy Consumption	IEA APS Carbon Price Under Announced Pledges Scenario	
	Preferential Rate		
	Taiwan Carbon Leakage Risk Coefficient		
	Carbon Price in Taiwan and Mainland China	IEA NZE 2050 Carbon Price Under Net Zero Emissions Scenario	
	EU ETS		

Note 10: Financial impact refers to the variance compared to a baseline scenario where no carbon reduction measures are taken.

Analysis shows that under any climate transition scenario, TCC's sites face higher carbon costs without transition actions than they would under the established emission reduction targets. The NZE scenario requires higher carbon costs compared to the STEPS and APS scenarios.

Following TCC's decarbonization pathway,

databases—including national meteorological observations, IPCC SSP1-2.6 low emissions and SSP5-8.5 high emissions scenarios, and disaster risks—to quantify the likelihood and impact of physical risks. For CIMPOR and OYAK Cement

fuel and operate the world's first large-scale calcined clay cement base, reducing carbon emissions by at least 40%. These acquisitions strengthen carbon competitiveness against global carbon pricing and CBAM pressures, mitigating future financial impacts. To quantify

achieving internal targets at domestic and international sites will reduce expenditures on carbon fees and the purchase of carbon credits. Detailed scenario analysis information will be disclosed in TCC's [2025 TCFD Report](#).

Regardless of the location, a lack of carbon reduction management will result in significant

sites, the World Resources Institute (WRI) Aqueduct Global Flood Analyzer is used to assess flood risks caused by extreme precipitation events under different scenarios in 2030 and 2050. The relevant physical risk analysis results

these impacts, TCC simulated future emissions under BAU and company target scenarios, utilizing the IEA's STEPS, APS, and NZE 2050 scenarios to calculate the financial implications of carbon fees and trading across all operational sites.

future financial impacts. Consequently, TCC has actively formulated decarbonization targets and continues to advance toward net zero emissions through its carbon reduction strategies, aiming to effectively mitigate the risk of rising operational costs driven by regulatory carbon pricing.

will be disclosed in the Company's 2025 TCFD report. To mitigate potential disaster damage and operational risks, TCC will regularly conduct flood disaster simulations for the sites to enhance adaptation measures at its plants.



Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY INNOVATION AND INFRASTRUCTURE

Metrics and Targets

Climate-Related Management Metrics

TCC makes climate commitments based on the strictest scientific standards, formulating a comprehensive carbon reduction strategy with the net zero by 2050 target, concrete carbon neutrality target, and the 2025 Science Based Targets (SBT) as the decarbonization pathway. In addition, by expanding the development of the renewable energy business, TCC provides various renewable energy solutions for national energy, cities, enterprises, and electric vehicle consumers, serving as a driving force for the overall society towards the energy transition. Therefore, TCC regularly convenes meetings to track the progress of the six major climate actions for responding to climate-related risks and opportunities, and links decarbonization targets with the annual performance appraisal and remuneration system. For details, please refer to the description in [Sustainability Goals and Tracking](#).

Internal Carbon Pricing and Internal Carbon Trading

In response to the official implementation of the EU Carbon Border Adjustment Mechanism (CBAM) and Taiwan's carbon fee collection starting in 2026, TCC introduced an internal carbon pricing (ICP) system within the Cement and Environmental Protection Business. Through cost-benefit analyses, this system proactively reflects the potential impacts of carbon costs on operations, investments, and financial performance. As a pivotal tool for TCC's low-carbon transition, ICP integrates carbon

costs and reduction benefits into capital expenditure evaluations, process improvements, and operational decisions, thereby enhancing climate risk management and investment quality.

Beyond factoring ICP into capital expenditure analyses, TCC continues to refine its carbon management. Modeled after carbon trading

markets, an internal carbon trading platform was launched in 2024 to trial emission allowance allocations and reduction metrics across cement plants in Taiwan and Mainland China. These results guide internal performance management and track carbon reduction progress, fostering carbon awareness and mitigation incentives at each site. Furthermore, TCC established the

Global Carbon Trading Office in February 2026 to centralize the Group's carbon asset management and trading strategies, optimizing global asset allocation and accelerating the low-carbon transition. For more information, please refer to [CH 4.2](#).

	Taiwan	Mainland China	Europe
Scope	Scope 1 + Scope 2 of 100% Cement and Environmental Protection Business (Asia) (including cement plants, RMC plants, and grinding stations)		Scope 1 of cement plants of Cement and Environmental Protection Business (Europe-Africa)
Pricing Type	Shadow Price		Implicit Price
Pricing Method	Based on the rate recommendation proposed by the 5th Carbon Fee Review Committee in 2024, assuming the carbon fee is adjusted every 2 years	Referencing the carbon price trend revealed in the Stated Policies Scenario for Mainland China in the "World Energy Outlook 2024"	Based on multiple forecasts from CEMBUREAU, IEA, and Bloomberg New Energy Finance (BNEF)
Carbon Pricing	2025 - 2026: NT\$500/tCO ₂ e	2025: RMB 105/tCO ₂ e 2026: RMB 154/tCO ₂ e	2030: EUR 150/tCO ₂ e
	Adjusted biennially, gradually increasing to NT\$1,800/tCO ₂ e by 2030	Gradually increasing to RMB 328/tCO ₂ e by 2040	



Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY INNOVATION AND INFRASTRUCTURE



1.5 Ethical Management

Zero Tolerance for Bribery and Corruption

TCC upholds business ethics, regulatory compliance, and integrity. TCC Operation Headquarters adopted the ISO 37001 Anti-Bribery Management System, integrating anti-corruption into Board oversight, with annual reporting to the Audit Committee and the Board. TCC established relevant responsible units across TCC Operation Headquarters and the Cement and Environmental Protection Business (Europe-Africa) following ISO 37001, led by local management to ensure top-down implementation of Ethical Management policies.

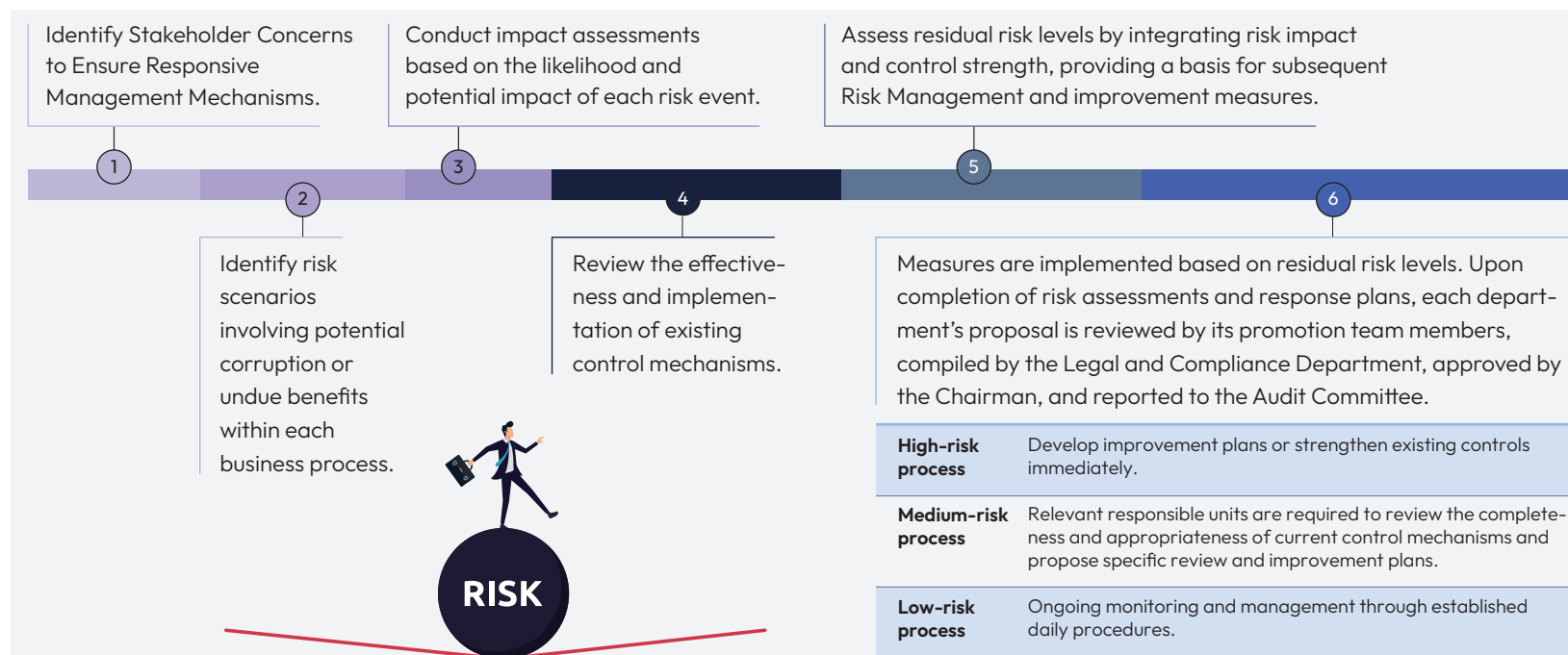
The Legal and Compliance Department acts as executive secretary for headquarters' "Anti-Corruption and Anti-Bribery Promotion Team," coordinating across business groups while unit heads manage daily risks. To foster a compliance culture, TCC ties anti-bribery to performance appraisals.

Corruption and Bribery Risk Assessment and Due Diligence.

TCC conducts annual corruption risk assessments, gradually implementing electronic risk assessment procedures to enhance efficiency. In accordance with the "Business Partner Corruption Risk Assessment and Due Diligence Procedures", due diligence is performed on suppliers, contractors, and clients. Response and management measures are established for those who fail to cooperate with assessments or due diligence, ensuring overall operations comply with

anti-corruption and legal requirements. Considering the nature of daily operations at departments and plants, the scope of corruption risk assessment prioritizes the TCC Operation Headquarters, the parent plant of Taiwan's RMC plants, Cement and Environmental Protection Business (Europe-Africa)¹¹, and Charging and Storage Business (Europe).

Corruption Risk Assessment Process



TCC KEY FACTS

Obtained ISO 37001

| TCC Operations Headquarters & Cement and Environmental Protection Business (Europe-Africa)

ISO 37301

| Cement and Environmental Protection Business (Europe-Africa)

Signing Rate 100%

Integrity Code (medium & high-risk personnel)

Statement of Integrity & Ethical Conduct (employees)

Global Operations (Fuzhou grinding station, Liaoning and Longshan Cement Plants in progress)

[Ethical Corporate Management Best Practice Principles](#)

[Anti-corruption and Anti-bribery Policy](#)

[Reporting Mechanism for Violation of Code of Conduct](#)

[Personal Data Protection and Management Policy](#)

Note 11: Cement and Environmental Protection Business (Europe-Africa) implements a global compliance program covering all subsidiaries of CIMPOR and OYAK Cement.



Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



Corruption Risk Assessment Process

	BUSINESS PARTNERS	EMPLOYEES										
Execution Frequency	■ Qualified new supplier onboarding ■ Annual review after cooperation (annual assessment for key suppliers in Taiwan)	At least annually										
Risk Assessment Process	STEP 1 Conduct a corruption and bribery risk assessment based on six major aspects. <table><tr><td>High-risk areas</td><td>High-risk partners</td></tr><tr><td>High-risk business arrangements</td><td>High-risk significant value activities</td></tr><tr><td>Reputational incidents</td><td>Policies and procedures</td></tr></table> STEP 2 Due diligence on corruption and bribery risks is conducted based on assessment results. <table><tr><td>Low-risk entities</td><td>High-risk entities</td></tr><tr><td>Basic due diligence procedures</td><td>Enhanced due diligence procedures</td></tr></table>	High-risk areas	High-risk partners	High-risk business arrangements	High-risk significant value activities	Reputational incidents	Policies and procedures	Low-risk entities	High-risk entities	Basic due diligence procedures	Enhanced due diligence procedures	STEP 1 Identify and analyze corruption and bribery risks based on departmental responsibilities and employee levels. STEP 2 The overall risk level is determined by aggregating the results of departmental and job-level risk assessments. 
High-risk areas	High-risk partners											
High-risk business arrangements	High-risk significant value activities											
Reputational incidents	Policies and procedures											
Low-risk entities	High-risk entities											
Basic due diligence procedures	Enhanced due diligence procedures											
Risk Response and Treatment	■ Inclusion of an integrity commitment statement in standard contract terms for all suppliers. ■ No transactions with high-risk suppliers in principle; exceptions require justification of necessity. ■ Requirement for business partners to sign the "Supplier Code of Conduct," committing to anti-corruption and anti-bribery policies.	■ All employees must complete due diligence procedures before being hired or assuming their roles and sign the Statement of Integrity and Ethical Conduct. ■ Employees of departments assessed as medium-high risk sign the Statement of Integrity and Ethical Conduct and Integrity Code at least once a year. ■ Linking compliance with anti-corruption and anti-bribery systems to employee performance incorporating it into annual performance evaluations.										

Note 12: The frequency of risk assessments is adjusted for certain sites based on their operational scale and business characteristics. For example, Cement and Environmental Protection Business (Europe-Africa) conducts assessments every three years. The assessment frequency is increased for high-risk business partners. New business partners are required to complete a Compliance Investigation Questionnaire to strengthen front-end review mechanisms.

Confirmed Corruption Incidents and Actions Taken



In 2025, TCC Green Energy Corporation experienced one corruption incident. An employee violated the Ethical Management Code and work rules during a solar project's development and procurement, committing a material breach that severely damaged the company's image. TCC has taken the following actions:

Internal Investigation:

TCC immediately reviewed operational processes to identify risks across requisition, specification review, and order placement stages. Relevant personnel were interviewed, and suspension measures were implemented to ensure an undisturbed investigation.

Dismissal and Legal Action:

Pursuant to integrity clauses, work rules, and Labor Standards Act Article 12-1-4, the employee was dismissed. TCC proactively filed lawsuits to pursue legal liability, while collaborating with legal teams to assess supplier breaches, safeguarding reputation and the basis for property damage claims.

Supply Chain Governance:

Based on investigation findings and legal proceedings, TCC reviewed its new energy business models and strengthened oversight. This covers procurement specification formulation, technical reviews, supplier management, and internal audits to prevent recurrence.



Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY INNOVATION AND INFRASTRUCTURE



Integrity and Ethics Training

TCC's ethical management training encompasses directors, employees, new hires, interns, and business partners across our global operations. TCC Operation Headquarters conducts online training for Taiwan and Mainland China locations (across Business Groups) based on the ISO 37001 framework, covering interactions with public officials, hospitality and gift guidelines, and corruption identification. In line with the CSRD and ESRS, Cement and Environmental Protection Business (Europe-Africa) promotes ethics and integrity training. CIMPOR offers

additional courses for 100% of high-risk personnel to reinforce understanding and implementation of ethical principles, utilizing diverse materials like 5-minute learning videos, podcasts, and monthly reports to raise awareness among all colleagues. Furthermore, Cement and Environmental Protection Business (Asia) extended these efforts to suppliers and contractors in 2025, promoting anti-corruption and anti-bribery at industry chain conferences and gradually expanding training to various supplier categories.

TARGET	AUDIENCE	Current Employees (Including Senior Management, Part-Time Staff, and Interns)
TRAINING CONTENT		All employees receive annual anti-corruption and anti-bribery training, with records maintained. Personnel involved in departmental risk assessment, receive advanced or specialized courses to enhance their professional judgment.
TARGET	AUDIENCE	Suppliers
TRAINING CONTENT		TCC communicates its ethical management principles through channels such as email notifications and supplier meetings. TCC requires all suppliers to sign the Supplier Code of Conduct to strengthen supply chain management.

Data Protection and Related Training

TCC prioritizes Data Protection and Privacy Management. The Personal Data Protection and Management Policy outlines mechanisms for data management, security, record-keeping, continuous improvement, and post-business termination data handling. It includes emergency response, notification, and preventive measures against data theft, alteration, damage, or leakage. We implement a data risk assessment

mechanism and a zero-tolerance management principle. The policy applies to employees, clients, suppliers, and other third-party personnel. TCC conducts ongoing training to enhance employees' legal compliance awareness and practical skills in Data Protection.

TCC KEY FACTS

Ethical Management Training

Employee

2,025 person-times
1,221 hours

Global Operations

Supplier Engagement

213 person-times
812 hours

Data Protection and Related Training

1,058 person-times
712.85 hours

Global Operations



Significant Penalties

In 2025, TCC's global operations incurred a total of 18 major penalties, with fines totaling NT\$35,395,563. TCC has implemented necessary corrective actions and enhanced training

regarding these violations. For detailed information, please refer to the material information announcements and the [Investor Relation Section of TCC's Official Website](#).

Penalty Type	Violations of environmental Regulations and Ethical Management Principles
Number of Case	18 (Taiwan: 3, Mainland China: 1, Türkiye: 11, Cameroon: 3)
Case Summary	1 violation of Occupational Health and Safety (OHS) regulations 4 violations of tax regulations 1 violation of administrative regulations 12 violations of environmental regulations
Response Measure	Strengthen environmental and occupational safety inspections; enhance administrative and tax management, including preserving relevant tax documentation; and intensify environmental protection and safety training to mitigate pollution risks and ensure regulatory compliance.

Note 13: Significant penalties are defined as single penalties exceeding USD 10,000.



Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY INNOVATION AND INFRASTRUCTURE



Prohibition of Unfair Competition

TCC upholds fair market competition as a core ethical commitment, prohibiting any anti-competitive practices such as monopolies or market

allocation that violate fair trade laws. For more details, please visit the [Investor Relation Section of TCC's Official Website](#).

Dedicated Unit

The Legal and Compliance Department oversees the Company's adherence to competition laws and related procedures.

Process

Investigations by competent authorities shall be promptly reported to the direct and highest-level supervisors of the involved unit, as well as the Legal and Compliance Department.

The Legal and Compliance Department reported the matter to management and sought legal counsel.

Any violations by suppliers or business partners shall be reported to the Legal and Compliance Department, and full cooperation shall be provided to the competent authorities during investigations.

Whistleblower Protection and Reporting Mechanisms

TCC has established the Reporting Mechanism for Violation of Code of Conduct Reporting to encourage internal and external individuals to report misconduct via email, written submissions, or in-person reports. While anonymous reporting is permitted, complete information and supporting documents are required to prevent malicious accusations.

TCC keeps whistleblower identities and report contents confidential, promising protection from retaliation. Reports involving senior management can go directly to the Audit Committee. This mechanism is promoted through ethical management training, ensuring

employees and external stakeholders are familiar with the system.

Upon receipt, the Audit Office registers the case within five working days to decide on acceptance. Once accepted, an investigation team is formed with appropriate personnel to ascertain facts. Findings and recommendations are then reported to the President and Chairman (directly to the Chairman if involving the President). If substantiated, the Audit Office reviews internal controls with relevant units, proposing corrective actions and reporting regularly to the Audit Committee to prevent recurrence.

Regulatory Framework

Employees shall adhere to the Ethical Management Code, Fair Trade, and Antitrust Compliance Guidelines.

Training and Education

Senior executives, managers, and relevant personnel are required to undergo regular fair trade training.

Remain Vigilant

In daily operations, avoid discussing sensitive information with competitors and decline invitations to social events where such information may be shared. Remain vigilant regarding competitors' discussions of such topics.

Taiwan and Mainland China (Cross-Business Group)



Whistleblowing email:
mp.buster@taiwancement.com
Ethical management reporting channel for senior management issue email:
tccwhistle@taiwancement.com

Note 14: For overseas grievance channels, please refer to the Sustainability Report or official website of each subsidiary.



Cement and Environmental Protection Business (Europe-Africa) fully implement a multilingual, 24/7, and anonymous reporting service in 2025. Access to information received is controlled by the third party based on the need-to-know principle, ensuring whistleblower anonymity and data confidentiality. Information is de-identified before confirmation with the internal legal compliance department. In 2025, 273 reports were received. All cases were received and tracked by Group Director of Internal Audit, Risk, and Compliance and Investment Review, and overseen by the Compliance department to enforce the zero-retaliation policy, with an average case closure time of 2.5 days.



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Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

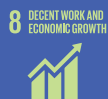
Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



Audit and Internal Control Management Systems

TCC has established a global internal audit mechanism across its business entities. Dedicated audit teams are in place at both the TCC Operation Headquarters and the European Operation Headquarters, responsible for auditing the business groups in Taiwan and Mainland China, and the Cement and Environmental Protection Business (Europe-Africa) and Charging and Storage Business (Europe), respectively. The Audit Office at the Operation Headquarters reports directly to TCC's Board of Directors, consolidating and reporting key audit events and findings from global locations to the Audit Committee quarterly.

TCC continuously provides training to enhance auditors' professional knowledge of ESG regulations and internal control mechanisms. In 2025, the total training hours for auditors reached 108, covering risk-oriented internal audit methodologies, interpreting operations from IFRS financial statements, internal audit practices for sustainability information management, and conducting audits in response to corporate governance trends. Future training will emphasize the use of AI to improve audit efficiency and will continue to include audit courses related to IFRS Sustainability Disclosure Standards.

Establish Audit Plan

- The annual audit plan is developed based on the results of risk assessments and is formally approved by the BOD.
- Data analytics and AI systems are utilized to support audit activities.



Submit Audit Reports

- Audit activities are conducted in accordance with the annual audit plan.
- Relevant reports on audit findings are completed and submitted to independent directors for review.



Follow-up on Audit Findings

- Audited units are required to implement corrective actions within a specified timeframe regarding audit findings.
- Follow-up reports on the improvement of audit findings are submitted to independent directors for review.



TCC KEY FACTS

TCC Audit Personnel

29.4% of hold CPA licenses

47.1% of personnel hold audit-related certifications, including Certified Internal Auditor (CIA), Certified Fraud Examiner (CFE), Certified Financial Services Auditor (CFSA), or Certified Information Systems Auditor (CISA)

| Global Operations



Integrating Sustainability Information into the Internal Control Cycle

TCC has established a robust Internal Control system, adhering to the FSC's Guidelines for the Establishment of Internal Control Systems by Public Companies. The Board of Directors approved the Internal Control Policy in December 2024, encompassing 9 operational cycles and 19 management control activities. Regular risk assessments and control mechanism design ensure operational compliance and enhance the reliability and transparency of information disclosure. To strengthen internal control over sustainability information, relevant management requirements have been added to the Internal Control Policy. The Cycle Control Operating Guidelines, to be promulgated in 2025, will integrate sustainability information into the circular control process, ensuring its handling and disclosure by relevant reporting units comply with IFRS standards.

In sustainability information management, the Internal Audit unit prepares an annual audit plan, submitted to the Board for review. TCC has established procedures for Sustainability Report preparation, defining processes and involved units, and engages third-party assurance to enhance disclosure transparency and credibility. In February 2025, TCC launched an Internal Control Automation Platform for quarterly compliance self-assessments covering operational cycles and management controls.

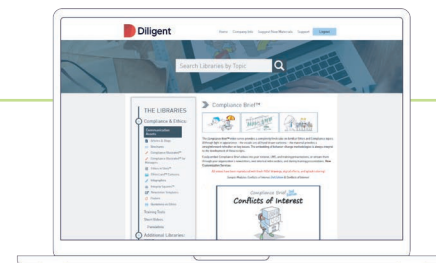
Environmental sustainability and fair trade issues will be gradually incorporated based on industry characteristics to strengthen the three lines of defense-self-assessment, compliance

management, risk control, and Internal Audit-and Governance effectiveness.

ACTION SPOTLIGHT

OYAK Cement and CIMPOR Leverage Diligent's AI-Powered Solutions to Enhance Audit Efficiency

Cement and Environmental Protection Business (Europe-Africa) plans to launch the Diligent One platform in September 2026 as a one-stop tool for Internal Audit and Risk Management, integrating governance, risk, and compliance information. The platform uses AI to enhance real-time monitoring and management of risks and internal controls. It automates audit processes, detects anomalies, performs data analysis, and provides real-time, decision-relevant information to management and the Board. Risk scenarios can be configured for high-risk operations to improve audit efficiency.



1.6 Information Security

Information Security Management Committee

Independent directors with information security expertise serve on the Committee to oversee related matters

TCC has established an "Information Security Policy" to ensure the proper protection of all information, systems, and trade secrets. This policy applies to TCC, its domestic and overseas subsidiaries, and other affiliated enterprises under its substantial control, covering employees at all operating sites as well as outsourced vendors, contract vendors, and dispatched personnel who have access to the enterprise group's internal information.

TCC has established the Information Security Management Committee, a functional committee convened annually by the President with cross-departmental participation. This committee reviews significant Information Security resolutions, tracks the effectiveness of planning and execution, and coordinates the allocation of necessary Information Security resources. The committee currently comprises three independent directors, with Independent Director Ruu-Tian Chang, Senior Executive Vice President at Gartner and possessing expertise in

information security and AI, serving as the convener. The overall Information Security framework of the enterprise group is overseen by the Chief Information Security Officer (CISO), who is responsible for promoting Information Security implementation, incident forensics and analysis, and tracking execution effectiveness.

The CISO, along with dedicated units, regularly reports Information Security progress and outlook to the Board of Directors and the Information Security Management Committee.

TCC has implemented ISO 27001 since 2020, establishing a group-wide Information Security management system based on the PDCA cycle. TCC conduct annual drills and tests for key risks like social engineering, vulnerabilities, and ransomware. AI technology is used for automated threat intelligence analysis.

enhancing our overall Information Security and response efficiency. TCC monitor emerging issues, including the cryptographic risks posed by quantum computing, and strengthen cross-border Data Protection to comply with international requirements such as the EU General Data Protection Regulation (GDPR). TCC's subsidiaries CIMPOR and OYAK Cement, have established a GDPR and Information Security Committee.

TCC has a dedicated team of 17 cybersecurity professionals in Taiwan and overseas, all holding international cybersecurity certifications.¹⁵ An additional 36-member support team further strengthens our cybersecurity defenses. TCC encourages cybersecurity personnel to obtain international certifications and provides subsidies for external training. By 2025, three more team members will acquire the ISA/IEC 62443 international industrial control cybersecurity certification.

Note 15: Cybersecurity certifications include Certified Information Systems Security Professional (CISSP), ISO 27001 Lead Auditor, EC-Council Certified Incident Handler (ECIH), ISA/IEC 62443, AWS Certified Security – Specialty, Microsoft certifications, CompTIA Security+, CompTIA Network+, and Payment Card Industry Professional (PCIP).

Note 16: A critical information security incidents is defined as the leakage of sensitive data or trade secrets, tampering of core business systems or critical infrastructure, or operational disruptions that cannot be restored within the scheduled timeframe.

Note 17: TCC Information Systems Corp. obtained certification for its management scope, covering sites in Taiwan and Mainland China (including subsidiaries).

Note 18: Sites in Taiwan and Mainland China adhere to the TCC Headquarters' ISO 27001 framework, with cybersecurity managed by the corporate cybersecurity team and subsidiary TCC Information Systems.

TCC KEY FACTS

ZERO critical information security incidents¹⁶ occurred, and no client or employee data breaches were reported.



ISO 27001 ISMS
certification
obtained.

Cement and Environmental Protection Business (Asia)	Group Operation Headquarters ^{17,18}
Cement and Environmental Protection Business (Europe-Africa)	CIMPOR and OYAK Cement
Energy for Social Transformation Business	Ho-Ping Power Company
Charging and Storage Business (Europe)	NHOA Energy and Atlante
Battery Energy Business	E One Moli Corporation
Investment Business	Hoping Industrial Port Corporation



Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

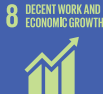
Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



Information Security Incident Response Mechanism

TCC has established a cybersecurity incident reporting and handling process. Employees must immediately report suspected incidents to the cybersecurity team. A Malicious Connection Detection & Response (MxDR) system and PRTG network monitoring software are in place for real-time detection of internal and external threats or anomalies, enabling timely responses. Incidents are classified into four levels based on impact, with major incidents reported to the Chief Information Security Officer and the Cybersecurity Management Committee, activating emergency response mechanisms when necessary.

The cybersecurity unit, system owners, and vendors collaborate on recovery and digital forensics analysis as needed. Regular cybersecurity meetings are held to review incidents and enhance protective measures. In 2025, 40 weekly, 11 monthly, and 4 quarterly meetings were held, and 4 cybersecurity health checks were completed.

Business Continuity Plan for Information Systems

TCC has implemented Business Continuity Plans (BCPs) across all global sites to ensure critical IT system functions and swift recovery during major disasters or emergencies.¹⁹ Sites in Taiwan and Mainland China conduct tests at least semi-annually, while Cement and Environmental Protection Business (Europe-Africa) and NHOA Energy test at least annually. In case of data center disruptions, TCC activates an emergency

response mechanism and forms a dedicated team. If an outage is projected to last over a week, a decision on activating the backup data center and systems is made within 24 hours. TCC enhances its response resilience through annual drills and core system testing, with plans to evaluate overseas backup for core systems to address geopolitical uncertainties.

Regularly conducts third-party vulnerability assessments and internal audits

By 2025, third-party vulnerability analyses will be completed for Taiwan, Mainland China, the Cement and Environmental Protection Business (Europe-Africa), and the Charging and Storage Business (Europe). Regular penetration testing, red team/blue team exercises, honeypot systems, and simulated attacks are conducted to ensure the effectiveness of internal management mechanisms. TCC has also incorporated cybersecurity checks into its annual audit plan to ensure the ongoing effectiveness of its cybersecurity management system.

Cybersecurity Education and Training to Raise Employee Awareness

All new TCC employees must sign an Information Security statement. TCC regularly invites experts for lectures and disseminates the latest information security policies and protection guidelines to enhance company-wide security awareness. Annual information security training, email campaigns, and social engineering drills (e.g., phishing emails) further raise employee awareness of password management, phishing attack identification, and system protection.

2025 Social Engineering Drill Results

Cement and Environmental Protection Business (Asia), Cement and Environmental Protection Business (Europe-Africa), and Charging and Storage Business (Europe) conducted 39 social engineering drills. Employees who violated regulations during the drills were prioritized for cybersecurity awareness training. TCC maintain a management target of keeping the social engineering violation rate below 3%. TCC plan to announce drill results and link them to employee performance to enhance fraud awareness and corporate cybersecurity resilience.



Artificial Intelligence Management

TCC adheres to the principles of responsibility and trustworthiness in perfecting its AI management mechanisms. TCC prioritize the transparency and explainability of AI, understanding its usage, sources, limitations, and potential risks. Clear responsibilities are defined for AI output, risk decisions, and Regulatory Compliance, with established investigation, handling procedures, and legal liability mechanisms. To ensure fairness and non-discrimination in data Governance, TCC also promotes AI management measures. For more information, please visit the [Investor Relation Section of TCC's Official Website](#).

Note 19: Atlante, operating under the Charging and Storage Business (Europe), has its Business Continuity Plan (BCP) for information business operations currently under development.

TCC KEY FACTS

Cybersecurity Training for Employees

3,509 hours
4,295 visits

Global Operations





Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

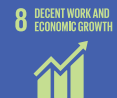
Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



Comprehensive Information Security Management

(For details, please refer to the [Investor Relation Section of TCC's Official Website](#))

Cybersecurity Strategy		Information Security Controls
Prevention	Cybersecurity Risk Management Mechanisms	- Conducts annual cybersecurity risk assessments, analyzing asset value, vulnerabilities, and threats. - Reviews audit logs of core systems and equipment regularly, using correlation analysis to identify potential threats.
	Expansion and Strengthening of Security Governance	Expands cybersecurity management to Mainland China facilities and implements third-party risk assessment mechanisms.
	Multi-Layered Cybersecurity Defense Architecture	- Deploys firewall access control, intrusion detection and prevention systems, and related procedures. - Establishes group-wide endpoint protection and malicious connection detection mechanisms. - Maintains 24/7 monitoring by external cybersecurity experts detected and immediately blocked 39 potential threats in 2025.
	Integration with Cybersecurity Threat Intelligence Centers	Participates in cybersecurity intelligence sharing mechanisms for real-time risk information.
Testing	Proactive Detection and Defense Mechanisms	- Conducts quarterly vulnerability scans with 6 conducted in 2025, remediating 344 high-risk vulnerabilities. - Runs Red Team vs. Blue Team exercises simulating internal network attacks to identify system vulnerabilities. - Deploys a honeypot system and threat intelligence sharing, successfully thwarting 257 attacks in 2025.
Operational Protection	Physical and Personnel Security Controls	- Implements print control, facial recognition, sensitive area camera restrictions, and a camera-free mobile policy. - Strengthens sensitive area management to mitigate internal and external data breach risks.
	Data and Account Security Management	- Encrypts sensitive data and implements multi-factor authentication using mobile OTPs. - Secures core areas utilize dual-factor authentication combining facial recognition and employee ID card access. - Stores high-privilege accounts are securely stored in hard copy under the CISO's control. A privileged account management system has been implemented for enhanced control. - Enforces strict access control is implemented for data and external transmission channels. - Runs real-time monitoring and alert mechanisms are implemented for all equipment and core business systems.
	Exclusive AI Projects	Develops internal, dedicated ChatGPT, Claude, DeepSeek, and Gemini systems, implementing two-factor authentication and usage tracking.



Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

8

DECENT WORK AND ECONOMIC GROWTH



9

INDUSTRY INNOVATION AND INFRASTRUCTURE



1.7 Supply Chain Management

Sustainable Supply Chain Management Framework

TCC has established a Supplier Management Policy Statement to ensure supplier consistency in quality, cost, delivery, service, EHS, and production, while jointly upholding human rights, reasonable working hours and wages, and inclusivity to promote supply chain sustainable development. The Supplier Code of Conduct and Safety and Health Responsibility Commitment require suppliers to adhere to five major compliance areas as prerequisites for establishing and maintaining business relationships.

The Board of Directors serves as the highest decision-making and supervisory body, while the Supply Chain Management Department coordinates execution, with its head regularly reporting management status to the management team during monthly operational meetings. TCC follows the UNGC Sustainable Supply Chain Guidelines and ISO 20400 Sustainable Procurement framework to develop traceable action plans and ensure implementation.

TCC incorporate the Responsible Business Alliance (RBA) standards and the EU Corporate Sustainability Due Diligence Directive (CSDDD) principles into our sustainability assessments and audits to enhance their comprehensiveness and effectiveness.

TCC is committed to partnering with suppliers to build a responsible supply chain through its sustainable procurement system. This involves two key management mechanisms: "Sustainable Supplier Screening" and "Localized and Green Procurement," both used to regularly assess supplier compliance. In the event of any non-compliance, business cooperation will be terminated and replaced.

Labor and Human Rights

Suppliers are required to monitor and prevent any labor and human rights violations, treating all workers with dignity. Any non-compliance must be immediately reported to TCC and remedied.

Health and Safety

Suppliers are required to regularly implement and improve safety and health management in accordance with international standards. They must also report on accident handling and prevention, safety, health, and environmental management, as well as current status reviews and improvement measures.

Environment & Climate Action

TCC requires suppliers to implement environmental management and encourage them to set Science-Based Targets (SBT) and disclose their Carbon Footprint. Specific Carbon Reduction requirements are imposed on suppliers of certain raw materials and services.

Non-compliant suppliers or those failing to meet TCC's Carbon Reduction standards will face contract termination.

Business Ethics

Suppliers are required to adhere to TCC's ISO 37001 system, comply with Ethical Management and Anti-corruption regulations, and have reporting and whistleblower protection mechanisms in place.

Management Systems

Suppliers shall establish robust management systems and procurement regulations, adhering to relevant codes of conduct to promote Responsible Sourcing practices.



TCC Becomes First in Taiwan's Cement Industry to Achieve ISO 20400 Certification

ISO 20400 Sustainable Procurement Guidance is a globally recognized and authoritative ESG procurement framework, covering four key aspects: supply chain management, environmental sustainability, social responsibility, and governance mechanisms.

In 2024, TCC took the lead in referencing the ISO 20400 guidance to establish its supplier management policy, code of conduct, and ESG assessment mechanism. In August 2025, TCC officially obtained the certification, becoming the first cement company in Taiwan to obtain this certification.

TCC has formulated key performance indicators and set specific quantitative targets for high-risk supplier categories, including a commitment to provide improvement plans for 100% of high-risk critical suppliers.

TCC KEY FACTS

Obtained
ISO 20400

Sustainable
Procurement
third-party
certification.



[Supplier Management Policy Statement](#)
[Supplier Code of Conduct](#)



Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

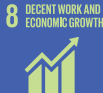
Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



Sustainable Supply Chain Management

Indicators and Targets | Cement and Environmental Protection Business (Asia)

7 Management Indicators

1	95% locally-procured non-raw materials	98.2%
2	Existing Significant Tier-1 & New Suppliers:100% (excluding state-owned enterprises)	100%
3	100% contractors signed the Safety and Health Responsibility Commitment	100%
4	100% High-risk Significant Suppliers supported by improvement plans	100%
5	100% reviewed conducted to Significant Tier-1 Suppliers (desk/ on-site assessment) (excluding state-owned enterprises)	97%
6	Sustainability Questionnaire Collection Ratio of Significant Tier-1 Suppliers achieve 80% by 2030 (by procurement amount)	87.69%
7	Number of Suppliers with Carbon Footprint Inventory Taiwan - A cumulative total of 35 by 2025 - A cumulative total of 40 by 2030	A total of 38

2025 PERFORMANCE

Note 20: TCC's sustainable supply chain covers Cement and Environmental Protection Business (Asia) cement plants, RMC plants, grinding/shipping stations, and quarrying subsidiaries; expanded to Long Son, Fengsheng, Wangqing, and Ho-Ping Power Company in 2025, and Taiwan Transport & Storage, Kuan-Ho Refractories Industry, Ta-Ho Maritime in 2026.
Note 21: Significant suppliers refer to those with high ESG risks or major business relevance to TCC.
Note 22: Tier 1 suppliers directly provide TCC with goods, raw materials, or services.
Note 23: For detailed Supplier Management data, see [CH 7.1](#).
Note 24: OYAK Cement & CIMPOR evaluate suppliers on quality, delivery, and compliance, planning to integrate ESG factors and third-party audits in the future.

Sustainable Supplier Management Process and Performance

The sustainable supplier screening and management strategy encompasses two key areas:

New Supplier Selection: Risk assessments, simplified sustainability questionnaires, signing the Supplier Code of Conduct, and due diligence assessments are conducted, with qualification determined by the results.

Existing Supplier Management: Sustainability management plans are formulated and executed to continuously monitor supply chain sustainability performance and implement risk assessments for significant suppliers.

Step 1

Risk Assessment

Basic supplier data is verified via the Procurement Portal for screening, while AI models and product life-cycle approaches identify supply chain sustainability risks.

Screened 324 suppliers for review
100% blocking of blacklisted suppliers and their associated suppliers

TCC Procurement Portal

Supplier risk assessment dimensions

Relevance to business

Consider factors such as pricing, purchase volume, and substitutability.

Country/Region-specific Risks

Assess potential ESG risks by examining the political, social, economic, environmental, or regulatory conditions of countries (regions).

Sector-specific Risk

Assessing potential ESG risks by examining the characteristics of TCC's industry in terms of labor conditions, energy and resource consumption, emissions, and pollution potential.

Commodity-specific Risk

TCC identify potential ESG risks by examining the supply chain structure, labor conditions, land use, and resource intensity of purchased goods.

Environment

Including GHG emissions, energy and resource consumption and efficiency, pollution control, waste management, and biodiversity impacts.

Social

Cover human rights and labor rights issues, including child labor, forced labor, anti-discrimination, working hours and compensation systems, and health and safety.

Governance

Including anti-corruption, anti-bribery, conflict of interest management, and prevention of unfair competition.

Step 2

Sustainability Assessment and Audit

Develop a sustainability self-assessment questionnaire based on ISO 20400 and OECD guidelines.

Introducing differentiated questionnaire designs to enhance the supplier audits.

Significant suppliers undergo desk assessments and risk evaluation via questionnaires and public information.

Further on-site audits are conducted for low-scoring, potentially high-risk suppliers.

Identifying high-risk suppliers based on review results.

Questionnaires response rate: 92.81%

Desk assessment: 324 suppliers

Conducted 55 on-site inspections

Second-party audits: 3
Third-party audits (by Intertek): 2

12 high-risk suppliers identified

Step 3

Corrective Actions and Improvements Based on Assessment Results

Utilizing AI models integrated with VBA functionality to generate sustainability questionnaire review reports, provides Environmental, Social, and Governance scores, PR values, and recommendations, helping significant suppliers understand results and access TCC's consultation.

High-risk suppliers

Dedicated personnel guide improvement plan submissions, requiring a Corrective Action Plan (CAP) within three months.

Priority next year includes participating in capacity-building projects like sustainable governance workshops and reviews.

Failure to improve within three months post-counseling triggers internal reporting and subsequent transaction termination or replacement.

Suppliers failing to meet the desk assessment standards

Partnerships are maintained with suppliers needing improvement, designating them for focused guidance.

Education and training are provided via online learning platforms, enhancing supervision and tracking improvement effectiveness.

Suppliers failing to meet standards (score <60) within 12 months face internal proposals for transaction termination and replacement.

11 suppliers (91.67%) implemented improvement plans
13 suppliers were terminated due to non-compliance or failure to improve after guidance



Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY INNOVATION AND INFRASTRUCTURE



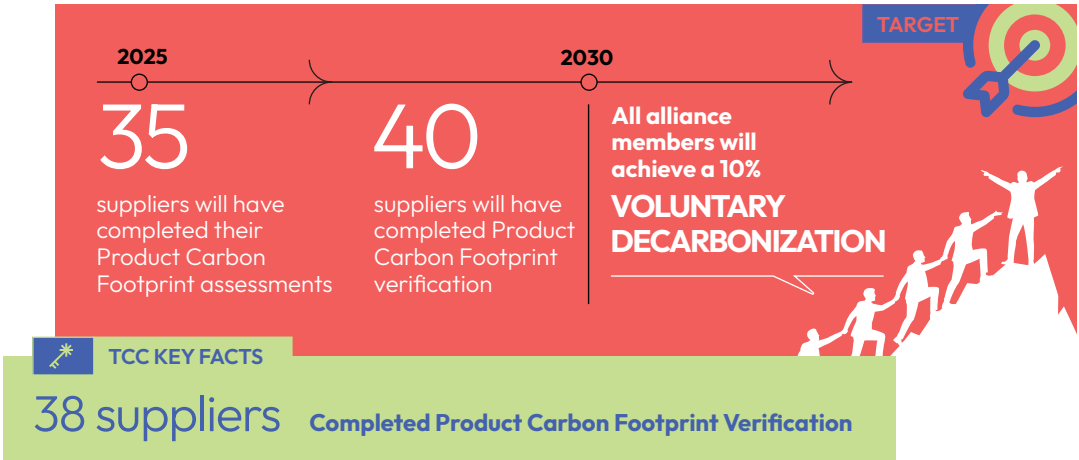
Training, Empowerment, and Capacity Building Programs

Project	Project Scope	Suppliers	2025 Performance
Capacity Building Program Semi-Annual Project	TCC launched a supplier capacity-building program, offering online and in-person coaching and training to help partners align with international standards and enhance operational competitiveness. Environmental and Climate Aspects: TCC have implemented ISO 14001, ISO 14064, and environmental workshops to strengthen environmental management, GHG inventory capabilities, and the identification of process carbon reduction hotspots. Quality and Operational Aspects: TCC integrated ISO 9001 with occupational safety workshops to ensure supply chain product quality and mitigate occupational safety risks. Responsibility and GovernanceAspects: TCC promote ISO 20400 sustainable procurement and responsible business conduct training, integrating human rights, ethics, and sustainable decision-making into our core operations.	Significant suppliers	335 suppliers participated including 148 critical suppliers — cumulative 2025/7-12
Product Carbon Footprint Intensive Training Camp	TCC assist suppliers in securing third-party verification resources, enhancing their practical capabilities in Product Carbon Footprint inventories and Carbon Reduction strategies. This support facilitates the certification of their product or service carbon footprints while minimizing their learning costs.	Product plant transportation, aggregates, and chemical suppliers	17 suppliers participated in 2 sessions
Sustainability Governance Workshop	TCC help our SME and high-risk significant suppliers establish Sustainability Management systems and set related policies and targets. One training sessions are held in 2025 to enhance suppliers' awareness of the importance of our Governance Structure.	Significant suppliers	23 suppliers participated
Supplier Sustainability Learning Platform	TCC established a dedicated learning platform offering online training and diverse empowerment courses covering occupational safety and health hazards, working hours, and physical and mental well-being. TCC also introduced Net Zero planning and management alongside carbon knowledge training to help our partners align with international Carbon Reduction trends and shorten their learning curves.	All suppliers	6 courses

Supervision, Evaluation, and Mutual Learning

TCC regularly reviews supply chain Sustainability Performance and fosters communication and industry learning through industry conferences, supplier feedback channels, engagement, and workshops to expand sustainability impact. Senior supply chain executives, procurement heads, and external consultants assess key sustainable procurement issues across Corporate Governance, human rights, fair

operations, environment, labor, community engagement, and consumer aspects. Risks for each procurement category are integrated and analyzed, and benchmarked against the Supplier Code of Conduct to ensure management practices align with sustainability principles. TCC incorporates ESG performance into its supplier selection mechanism. Suppliers with excellent sustainability performance who pass quality and fulfillment assessments are granted priority bidding status and final negotiation rights.





Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

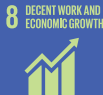
Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



TCC established the Green Value Chain Alliance in 2024, uniting key transportation and raw material partners from Taiwan and Mainland China to drive low-carbon transformation. A "Industry Chain Conference" was held in 2025, focusing on the green supply chain to foster technology and information exchange and deepen partners' understanding of and collaboration on Sustainability Targets.

Furthermore, starting in 2025, all Taiwanese suppliers participating in TCC's ready-mixed concrete raw material and transportation tenders must complete third-party verification of their product or service

Local and Green Procurement

TCC prioritizes local suppliers and products/ services to reduce transport distances, lower carbon emissions, and stimulate local economies. For green procurement, TCC favor

Procurement Spend Ratio 2025	Taiwan and Mainland China	OYAK Cement	CIMPOR
Local sourcing ratio	95.52%	95.71%	39%
Green procurement ratio for raw materials	10.59%	2.02%	7%
Green procurement ratio for non-raw materials	1.63%	0.11%	10%

Note25: The table above covers Cement and Environmental Protection Business (Asia) and Cement and Environmental Protection Business (Europe-Africa), with raw materials encompassing both materials and fuel.

ACTION
SPOTLIGHT

Green Value Chain Alliance

The Product Carbon Footprint of our suppliers exceeded carbon reduction targets in 2025.

Carbon Footprint (ISO 14067). TCC recognized the first eight suppliers to achieve this verification at the Industry Chain Conference.

TCC plans to convene a supplier decarbonization conference in 2026. Based on suppliers' Product Carbon Footprint data, external consultants will be invited to review and analyze, assisting suppliers in formulating feasible Carbon Reduction action paths to achieve Decarbonization Targets. In the future, the green supply chain strategy will be evaluated for expansion to across all affiliated business entities, comprehensively enhancing the sustainable resilience of the group's value chain.

Green Products if their unit price is within 5% of non-green alternatives. TCC also consider long-term energy savings, Carbon Reduction, and high energy performance to minimize the Carbon Footprint during manufacturing.

Training for Procurement Personnel

To enhance the sustainability expertise of our procurement staff, TCC holds at least one annual training session in Taiwan and Mainland China, with participation extended to procurement teams of affiliated companies. In 2025, external consultants were engaged to integrate ISO 20400 sustainable procurement into practical training, strengthening our procurement personnel's capabilities in sustainable Supply Chain Management and Carbon Reduction strategies. In 2025, 129 participations completed 473 training hours covering:

ISO 20400:2017 Sustainable Procurement – Guidance

Supply Chain Sustainability Assessment Workshop

Global Labor Rights and Due Diligence: Best Practices and Strategies Workshop

TCC Document Review and Verification Education and Training

Corporate Sustainability Elite Training Program

Carbon Reduction Packaging Workshop

Sustainability and Net-Zero Workshop

Sustainable Supply Chain Promotion at Ho-Ping Power

Feng Sheng Sustainable Governance Workshop

ACTION
SPOTLIGHT

AI-Powered Global Supply Chain Risk Management and Decision Support with Power BI

To address multifaceted risks arising from regulatory policies, geopolitical shifts, and market supply-demand dynamics, TCC annually integrates ESG and business relevance across three key risk dimensions: country/region, industry, and commodity. TCC leverages AI and Power BI to build a comprehensive Supply Chain Risk analysis and decision support system.

- TCC has integrated AI models into our assessment process to evaluate and provide early warnings on potential risks. Furthermore, TCC employ a product life cycle approach in our product analysis to systematically identify sustainability risks across the value chain.
- Power BI's intuitive charts and interactive analysis help employees quickly grasp key information, strengthening proactive and timely Supply Chain Management.



Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY INNOVATION AND INFRASTRUCTURE



1.8 Customer Communication

Product Health and Safety Management

TCC is committed to safeguarding client rights, adhering to the OECD Guidelines for Multinational Enterprises in managing the health and safety impacts of its products and services, as well as marketing and labeling. All major global production sites have implemented the ISO 9001 quality management system.

TCC's global cement and environmental plants conduct regular product testing to ensure no adverse health or safety impact during use. Each Business Group has established quality management procedures, with product information clearly labeled in the local language. Comprehensive product safety information is provided to customers via product labels, packaging, and delivery notes, with Safety Data Sheets (SDS) readily available.

Furthermore, Cement and Environmental Protection (Asia) and NHOA Energy offer on-site training for operators, covering safety protocols, potential risks, and the correct operation and use of products and systems. Annual customer satisfaction surveys serve as a core performance indicator, ensuring no health risks to individuals.

Cement and Environmental Protection Business (Asia) Cement products undergo a rigorous three-tier quality control system and laboratory testing of six raw materials before delivery to ensure stability and non-toxicity. Both cement and concrete products maintain consistent quality across various applications, with concrete exceeding Taiwan's CNS standards for compressive strength at 3, 7, and 28 days. Concrete produced in Taiwan also meets Green Building Material Label standards, having been certified as non-radioactive, asbestos-free, and passed heavy metal leaching tests (Cd, Cr, Cu, Pb, Se, Cr(VI), Hg, As), with chloride ion levels complying with CNS standards.

Three-tier 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 the plant for random inspections
Six Raw Material Inspections	Cement, sand and gravel, slag, fly ash, chemicals, and mixing water, passed the tests by TAF laboratories like those of TCC, SGS, etc.

Cement and Environmental Protection Business (Europe-Africa) Cement products comply with EU standard PS EN 197-1:2012. Through comprehensive process management, reducing agents are added as necessary to minimize hexavalent chromium (Cr⁶⁺) to safe levels, ensuring product safety and compliance with

relevant regulations. For packaging, bagged cement utilizes self-produced recycled paper bags with FSC certification. All products from operations in Türkiye meet Turkish TS EN standards, and bagged cement products also comply with EU regulations regarding hexavalent chromium content.

Charging and Storage Business (Europe) Rigorous quality control, independent inspections, and testing are implemented to ensure that products pose no adverse health or safety impacts during use. Customers receive comprehensive and clear safety information through product labels, user manuals, quality documents, and all necessary deliverables. Charging equipment procured from external suppliers meets strict technical specifications as well as health, safety, and environmental standards. All equipment is installed by external contractors under Atlante's close supervision to maintain high safety and quality standards.

Battery Energy Business Molicel rigorously controls hazardous substances in its battery products, requiring suppliers to provide Safety Data Sheets (SDS) and sign declarations to ensure 100% compliance with RoHS and REACH international standards. The S series cells prioritize enhanced safety and high-temperature performance, with specific products like P30S and P50S having obtained UL9540A certification, guaranteeing stable operation under extreme conditions. The P22S has demonstrated excellent performance in fire propagation tests, sustaining fire resistance for over 10 minutes.

TCC KEY FACTS

Acquisition of ISO 9001 Quality Management



Cement and Environmental Protection Business (Asia)

Cement Plants in Taiwan and Mainland China, RMC Plants in Taiwan, and Kuan-Ho Refractories.

Cement and Environmental Protection Business (Europe-Africa)

CIMPOR: Cement Plants, RMC Plants, Aggregate Plants, Dry Mortar Plants, and Paper Bag Production Plants
OYAK Cement: Cement Plants, RMC Plants and Aggregate Plants

Energy for Social Transformation Business

Ho-Ping Power Company

Charging and Storage Business (Europe)

NHOA Energy, Atlante

Battery Energy Business

E One Moli Corporation

Investment Business

Taiwan Transport & Storage

[Clients' Rights and interests Protection Policy](#)
[Product Attributes and Safety](#)



Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY INNOVATION AND INFRASTRUCTURE



Product Safety Certifications

Management Mechanisms	Environmental Cement Business	Certifications	
Product Environmental Certifications	Taiwan	Portland Cement Products	Carbon Footprint Label, MOE Taiwan
			Carbon Footprint Reduction Label, MOE Taiwan
			Gold-rated Green Mark, MOE Taiwan
			ISO 14067
			Low-carbon Circular Building Material Certification, MOI Taiwan
		Concrete Products	Environmental Product Declaration, EPD
			Carbon Footprint Label, MOE Taiwan
			Carbon Footprint Reduction Label, MOE Taiwan
			Green Building Material Label, MOI Taiwan
			Low-carbon Circular Building Material Certification, MOI Taiwan
	Mainland China	Portland Cement Products	Environmental Product Declaration, EPD
			Carbon Footprint Label for Building Materials (China)
			Low-carbon Products Certification (China)
			FSC™ Mix (Forest Stewardship Council™ Mix claim)
			Portuguese Grey Cement
	CIMPOR	Paper Bags for the Cement Industry	Environmental Product Declaration, EPD
			ISO 14067 Concrete & UHPC
			ISO 14025 UHPC
			Environmental Product Declaration, EPD
			Concrete Specimen Compressive Strength Report
Third-party Product Certification	Taiwan		Good Ready-mixed Concrete Label
			TCRI product traceability certification
Product Resume	Taiwan		Strength specifications, cement source, slag source, chemical admixtures, quality assurance certificate, sand and gravel source, fly ash source, aggregate source, carbon emission information, chloride ion report, 28-day compressive strength report, external certification, and TCRI product traceability certification.



Note 26: Refer to [CH 2.1](#) for more information on EPD Type III Environmental Product Declaration.

Note 27: For product safety information of other Business Groups, please refer to [CH 3](#) and the respective sustainability reports of NHOA Energy, Atlante, and MoliceL.



Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

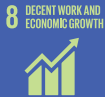
Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY INNOVATION AND INFRASTRUCTURE

Client Communication and Engagement

To enhance customer service quality for its building material products, Cement and Environmental Protection Business (Asia) has established a "Product Safety Traceability System" in Taiwan. This system incorporates AI assistance and user-oriented design, allowing customers to scan a QR Code to access information on concrete raw material mixing ratios, sources, carbon emission intensity, and inspection reports, disclosing product details in line with food resume specifications. Integrated with our e-commerce app, the "TCC News" feature facilitates easy ordering and delivers real-time TCC sustainability information.

In 2025, the Cement and Environmental Protection Business Group will continue to expand diverse customer communication channels,

proactively inviting construction customers and engineering experts to participate in seminars or technical exchange meetings on the development and application of low-carbon construction materials, fostering face-to-face interaction and ensuring customers receive stable, reliable products and professional support. TCC regularly conducts sales team training covering raw material quality control, process management, regulatory overviews, and concrete quality guidance. In 2025, a total of 135 participants completed training, accumulating 810 training hours.

For the Charging and Storage Business, Atlante centers its services around the myAtlante mobile app, fostering long-term customer engagement through the Green Gems loyalty program and the "Atlante Go" subscription plan.

It encourages low-carbon charging with discounts and preferential rates.

TCC Energy Storage charging stations utilize LINE, a popular messaging app in Taiwan, as the service interface, eliminating the need for a separate app download—marking an industry first in Taiwan. This seamlessly integrates charging with daily life, enhances user convenience, and periodically promotes energy-saving and carbon reduction initiatives, encouraging EV owners to become advocates for green living. See [CH 3.2](#) for more details.

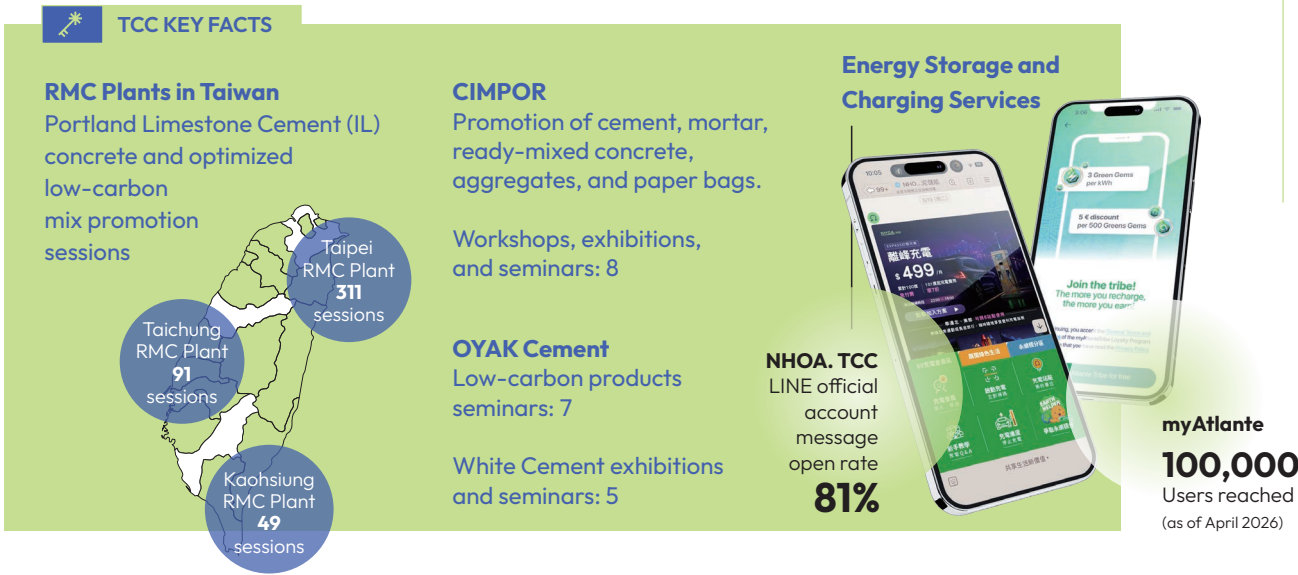
Client Satisfaction Survey

TCC conducts annual client satisfaction surveys. The 2025 survey covered cement, concrete, and mineral powder product customers across Taiwan, Mainland China, and Hong Kong, as well as cement, concrete, aggregate, and dry mortar customers of CIMPOR, and cement customers of OYAK Cement. The survey also incorporates "Sustainable Products" and "Quality and Safety," including indicators such as product carbon reduction levels, process water conservation, product safety traceability, and human health and safety. Through these interactions, TCC also engages with customers to discuss climate change and water resource management, gaining insights into their opinions and needs.

ACTION SPOTLIGHT

OYAK Cement i-Deal Mobile Application

OYAK Cement pioneered the i-Deal mobile app in the Türkiye cement market, integrating dealers and clients into a unified digital platform. QR codes on cement packaging provide instant app access, streamlining information retrieval. i-Deal delivers comprehensive details on cement and concrete products and services—including detailed analysis reports, technical data sheets (TDS), technical bulletins, and quality performance certificates—effectively enhancing the client experience and information transparency.



TCC KEY FACTS

Cement and Environmental Protection Business

	2022	2023	2024	2025
Client Satisfaction Rate (%)	96.86%	98.64%	93.50%	94.03%
Coverage (%)	100%	100%	100%	100%

Note 28: Since 2024, the client satisfaction survey scope has broadened following the acquisition of European cement operations CIMPOR and OYAK Cement.

Note 29: NHOA Energy and Molice collect client feedback through satisfaction surveys, the results of which are included in their Sustainability Reports. Atlante will launch its first survey in 2026.



Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY INNOVATION AND INFRASTRUCTURE



Client Grievance and Rights Protection Mechanism

All employees comply with the Code of Integrity and Ethics, maintaining strict confidentiality of non-public corporate and client data to ensure robust client information security. To safeguard client rights, the Cement and Environmental Protection Business (Asia) has instituted a comprehensive grievance mechanism governed by the Client Rights Protection Policy, alongside specialized domestic, export, and plant-level service procedures. Similarly, the Cement and Environmental Protection Business (Europe-Asia) and the Charging and Storage Business (Europe) feature standardized feedback channels via official websites, social media, and 24-hour hotlines. Notably, OYAK Cement and Atlante offer digital grievance services through their respective mobile applications, i-Deal and myAtlante. Upon receipt, all grievances are immediately filed and managed by dedicated units that provide prompt progress updates. Subsequent regular analysis and improvement tracking are conducted to guarantee service quality and protect client interests.

Client Feedback Handling Process

- 1

Diverse Feedback Channels
Grievances are processed via TCC's official website, email, social media, a 24-hour hotline, and dedicated apps (OYAK Cement and Atlante). To address specific Client needs, TCC conducts on-site assessments and leverages continuous support and feedback to coordinate and deliver customized products.
- 2

Immediate Contact and Handling
Responsible units are required to promptly contact customers to ensure resolution outcomes are clearly communicated.
- 3

Root Cause Analysis and Continuous Improvement
To drive improvements, we regularly review and track customer complaints—conducting root cause analyses and formulating enhancement measures within a process to incorporate customer feedback into product and service development.

Client Complaint Channels in Taiwan

- Cement/Concrete Client Service**
TCC Official Website: [Contact Us](#)
Sales Department Client Service
Email: tccsales@taiwancement.com
Client Service Hotline
+886-2-2531-7099 ext. 20505
- Green Electricity Sales**
+886-2-7719-7362
- Energy Storage/Charging Stations**
+886-2-7719-0378

Note 30: For grievance channels regarding Mainland China and overseas businesses, please refer to the TCC Sustainability Report (Simplified Chinese Ver.), or the respective Sustainability Reports and official websites of individual subsidiaries.

Low-Carbon Construction Pioneer Alliance

Engaging Clients on Climate and Water Issues

In 2024, TCC established the Low-Carbon Construction Pioneers Alliance, partnering with leading developers to advance sustainable building. With over 3,500 application sites across Taiwan, TCC has solidified its leadership in the Low-Carbon Construction Materials market.

Championing transparency, TCC has disclosed its Carbon Footprint since 2023 by printing carbon labels on all cement and concrete delivery notes. By 2025, TCC's delivery system will further disclose the Product Carbon Footprint calculated from specific concrete mix proportions.

TCC's Taiwan plants actively promote Portland Limestone (IL) Cement concrete and various low-carbon mixes to continuously drive the adoption of Low-carbon Products. During clients' on-site trial mixing, we highlight our Carbon Reduction and water-saving performance, alongside achievements in product sustainability verification and management.

Similarly, OYAK Cement facilitates concrete clients' transition to low-carbon mixes by offering on-site technical support and detailing Carbon Reduction potential, water demand, and performance. OYAK Cement also helps clients meet public procurement and project sustainability standards, jointly driving the construction industry's low-carbon transformation. Furthermore, Atlante utilizes the

myAtlante APP to disclose avoided carbon emissions from charging services to clients. It verifies that 100% of its Green Electricity comes from third-party certified Renewable Energy sources, empowering EV owners to quantify their tangible environmental contributions.

ACTION SPOTLIGHT

Design-Driven Application of Low-Carbon Construction Materials

The adoption of Low-Carbon Construction Materials depends largely on architects and civil or structural engineers. To enhance industry awareness, TCC moved beyond traditional sales models to host three "Low-Carbon Construction Materials Development and Application Seminars" in 2025. Centered on driving the practical application of Low-Carbon Construction Materials and industrial transformation, the events highlighted the construction sector's critical role amid Climate Change and Net Zero Emissions. These seminars fostered cross-sector dialogues among nearly 600 participants—including civil engineering academics, industry representatives, and international architectural consultants—with architects and engineers comprising about 20% of attendees.



Overview

Governance

Governance Structure

Sustainability Management Framework

Risk Management Framework

TCFD

Ethical Management

Information Security

Supply Chain Management

Customer Communication

Intellectual Property Management

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY INNOVATION AND INFRASTRUCTURE



1.9 Intellectual Property Management

Taiwan Intellectual Property Management System (TIPS) Certification with Level A Protection

To lead in low-carbon and new energy, safeguard technologies, and drive cross-domain innovation, TCC established the IP Management Guidelines, R&D and Patent Management Regulations, and Trademark Management Regulations, reporting IP matters to the Board at least annually to promote green trademark and patent layouts. Aligning operations, R&D, and sustainability, TCC protects confidential data, conducts inventories when necessary, and manages global IP through legal compliance and system integration, tracking progress via business meetings to mitigate operational risks.

In 2024, TCC introduced the Taiwan Intellectual Property Management System (TIPS) for patents and trademarks, establishing R&D processes, IP document management, and confidentiality classification. Employees are encouraged to apply for patents and trademarks through proposal reviews to strengthen technical capabilities and brand recognition, alongside company-wide IP and trade secret training. In 2025, TCC passed TIPS A-level recertification and plans to expand the scope to copyrights and trade secrets.

Intellectual Property Management

Innovative R&D
Comprehensive Protection
Global Deployment

Management Strategy

Implemented System

Registration Application
Education and Training
Confidentiality Classification

Intellectual Property Management Measures and Achievements

Patents

- 263 invention patents granted, 137 pending.
- Our patent portfolio covers Taiwan, Mainland China, the US, the EU, Japan, and Korea, with applications extending to Ghana, Cameroon, Côte d'Ivoire, Nigeria, Cape Verde, Algeria, and Morocco.

Charging and Storage Business

- EnergyArk® patents covering cabinet design, safety, EMS, and battery modules are filed across 14 markets, including the US, Japan, EU, Africa, Mainland China, and Taiwan, with 18 invention patents already secured in Taiwan and Japan; details are in [CH 3.1](#).
- NHOA Energy specializes in Battery Energy Storage Systems (BESS) integration, backed by global patents and pending applications. Concurrently, Atlante drives R&D and patent strategies for integrated storage and charging solutions.

Cement and Environmental Protection Business

- UHPC patents cover precast panels, RCP pipes, 3D printing, and storage; low-carbon formulas are trade secrets, with building applications under review.
- Solar glass patents (Taiwan) secure waste-glass pozzolanic technology; multi-country applications are under review.
- CIMPOR patents (Portugal) protect concrete utilizing blast furnace slag and aggregate washing sediment.
- X-Clinker patents feature low-calcium, fully electrified cement technology cutting emissions by over 70%.

Battery Energy Business

- Patent applications for our cylindrical lithium battery electrode and cell winding technologies are currently under review in multiple countries.
- Patent applications for technologies such as battery internal resistance measurement and multi-pattern battery coating fabrication methods.



TCC KEY FACTS

2025 Recertified by **TIPS**
(Taiwan Intellectual Property Management System)

100% of new hires signed confidentiality and IP ownership agreement
Taiwan Operations (across Business Groups)

Trademark

- 841 trademarks approved, 54 pending.
- The Company has filed trademark applications globally, including in Taiwan, Mainland China, the US, the EU, Switzerland, and Japan.

Trade Secrets

- Business partners are required to sign non-disclosure agreements or agree to confidentiality clauses.
- All employees must sign an Employee Confidentiality and IP Ownership Agreement upon onboarding.
- 100% signing rate of Employee Covenant (with non-compete/non-solicitation) for employees accessing critical IP/know-how upon employment and resignation.

Copyright

Provisions are in place to define the ownership of deliverables and guarantee non-infringement of third-party rights, safeguarding all R&D, design, and written work commissioned by TCC from business partners.

Note 31: Trademark and patent data as of 2025/12/31 cover Cement and Environmental Protection Business (Asia), Cement and Environmental Protection Business (Europe-Africa), and NHOA Energy.
Note 32: Patent information is sourced from the GPSS Global Patent Search System. The current patent count excludes 170 expired and 66 unrenewed patents.

chapter 2

Carbon Reduction



2.1	Low-Carbon Construction Materials	94
2.2	Resource Recycling – City Mining	102
2.3	Low-Carbon Production Management	109

Clock of Hope

Its hands point to 2050, the pivotal milestone for the world's carbon-neutrality pledge. The Clock of Hope reminds us that, if we act, we can change the future. Every turning-back of its hands marks a change TCC makes for the planet, all to preserve the next generation's right to choose.



Overview

Governance

Carbon Reduction

Low-Carbon Construction Materials

Resource Recycling — City Mining

Low-Carbon Production Management

Energy Transition

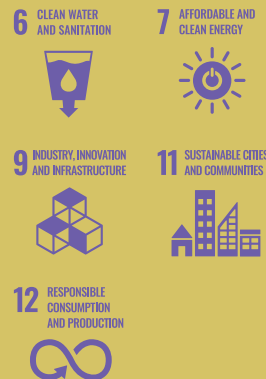
Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS SUSTAINABILITY REPORT

2.1 Low-Carbon Construction Materials

The UNEP "Global Status Report for Buildings and Construction 2025–2026" highlights reducing embodied carbon in materials as key to global net zero. Achieving Paris Agreement

goals requires low-carbon innovation, circular resource use, and life cycle management. Fortune Business Insights projects the global green cement market will grow from USD 43.37

billion in 2025 to USD 100.55 billion by 2034 (9.9% CAGR), proving low-carbon materials are a rigid demand in the carbon pricing era. Initiating its transition in 2018, TCC aligned with

the SBT, introducing carbon management, developing low-carbon products, and establishing industry standards to deliver eco-economic solutions for urban development and climate resilience.

First cement company to obtain BS 8001 circular economy certification



First batch of low-carbon product certifications in Mainland China



Established carbon footprint label methodology for Taiwan's cement industry and developed Product Category Rules (PCR) for the cement sector



Obtained Taiwan's first product carbon footprint label for cement products

First cement company to adopt Life Cycle Assessment (LCA)

Established AI carbon reduction management platform

Obtained Taiwan's first carbon reduction label for bagged cement



Developed Ultra-High Performance Concrete (UHPC)

Obtained carbon labels for main concrete products

Developed 3D printing cement construction materials

Established UHPC Production Center



Launched Total Climate Portfolio

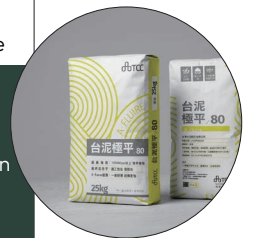
Developed UHPC construction materials (UHPC KT Board, grass pavers, etc.)

Developed pervious concrete

Portland Limestone (IL) cement obtained Environmental Product Declaration (EPD) verification



Launched "A-Fluire" Mortar



CIMPOR

The Ivory Coast plant launched low-carbon calcined clay cement products



OYAK Cement — Launched low-carbon series

ALFACEM Türkiye's first CEM VI low-carbon cement; carbon emissions below 350 kg CO₂e/t cement



NOVOCEM Introduced calcined clay blending, with alternative materials reaching 36–50%; Karbeyaz Low-Carbon White Cement

CIMPOR New generation composite cement



CIMPOR Developing Flash Calcination technology for calcined clay

OYAK Cement SuperWhite+ SuperWhite ProWhite Duracem



CIMPOR Cameroon deOHclay integrated cement plant completed

CIMPOR Launched deOHclay

Ghana plant calcined clay vertical factory commissioned

Nearing EPD verification for Portugal plant's RMC & aggregates





Overview

Governance

Carbon Reduction

Low-Carbon Construction Materials

Resource Recycling — City Mining

Low-Carbon Production Management

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

6 CLEAN WATER AND SANITATION



7 AFFORDABLE AND CLEAN ENERGY



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



2025 TCC GROUP HOLDINGS SUSTAINABILITY REPORT

TCC Global Cement Products Enter International GCCA Low-Carbon Rating

In April 2025, the Global Cement and Concrete Association (GCCA) published the world's first Low Carbon Rating (LCR) for cement and concrete. The Company is the only building materials operator in Taiwan whose cement and concrete products both meet GCCA low-carbon standards. The Company's low-carbon products manufactured in Mainland China, Türkiye, Portugal, and West Africa also fully comply with these standards. However, compared to Europe's diverse and flexible low-carbon cement

standards—which allow a significant reduction in clinker ratio and the use of up to 80% alternative additives—Taiwan's cement standards mainly inherit traditional American specifications with strict composition limits, forcing clinker ratios to remain high and severely restricting the proportion of supplementary cementitious materials. Under an environment so heavily constrained by outdated regulations, even though the cement produced by the Company in Taiwan is the only domestic product to meet the GCCA Low Carbon Rating, it can only achieve the most basic F level of this international standard.

Global Cement and Concrete Association LCR standards

Near Zero		AA
		A
		B
OYAK Cement CEM III 32,5N CEM VI 32,5N	C	Taiwan Portland Limestone (IL) Cement Concrete 3000-6000psi
OYAK Cement CEM II 32,5N CEM V 32,5N	D	Taiwan Portland Type I Cement Concrete 3000-6000psi
OYAK Cement CEM II 42,5R CEM V 32,5R CIMPOR CEM II 32,5N	E	
Suao & Hoping Plant Portland Limestone (IL) Cement Yingde & Jurong Plant PO 42,5R	F	
TCC Low-carbon Cement Products		TCC Low-carbon Concrete Products



TARGET

TCC	TCC will exclusively produce and sell low-carbon cement and concrete
CIMPOR	Sales proportion in the Portuguese market will increase to 90%, with export share reaching 30%
	By 2030, CIMPOR will reduce the clinker ratio in cement production to below 65%
OYAK Cement	The proportion of CEM-I in gray cement sales will decrease from 23.4% to 12.2%
	By 2030, the clinker ratio in cement production will decrease to 73%

ACTION SPOTLIGHT

Taiwan's First Dual EPD Certification for Cement & Concrete: Environmental Information Transparency on Par with Europe

In December 2025, the Portland Limestone (IL) cement produced by the Hoping Plant and Suao Plant, and the Portland Limestone (IL) cement concrete produced by the Taipei Plant, officially obtained Environmental Product Declaration (EPD) certification. This provides clients with the most complete and credible environmental data, serving as a reliable basis for green building calculations.

In the past, the industry mostly focused on ISO 14067 carbon footprint verification under government regulations. However, as international supply chain requirements become increasingly stringent, carbon data is no longer sufficient to reflect the true ecological impact of products. In operational management, the Company consistently insists on self-regulation with uniform high standards for cement produced globally. Our overseas subsidiaries, CIMPOR and OYAK Cement, have been progressively obtaining EPD certifications for their Cement and Environmental Protection Business products since 2023, the Taiwan plants also quickly completed the certification, covering multiple environmental indicators such as water resource usage and waste treatment. The main cement products in Mainland China are also currently introducing this,

localizing Europe's leading environmental data governance experience. For more information, please refer to the [TCC Sustainable E-Newsletter](#).



Environmental Product Declaration(EPD)

The EPD (Environmental Product Declaration) is the environmental ID card of a product, emphasizing multi-dimensional disclosure. Different industries have different lists of topics of concern. It conducts scientifically rigorous quantification based on the ISO 14025 standard, must pass the Life Cycle Assessment (LCA), and be verified by a third party to honestly disclose the energy consumption and carbon emissions of the product from raw materials and manufacturing to transportation.

Companies can also select suitable items for quantification based on their own stakeholder engagement purposes. The wave of data transparency has long become a common international language. The iMasons Climate Accord, formed by global tech giants such as Google, Microsoft, and Amazon, strongly requires its data center supply chain to provide EPDs.



Overview

Governance

Carbon Reduction

Low-Carbon
Construction Materials

Resource Recycling —
City Mining

Low-Carbon Production
Management

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

6 CLEAN WATER
AND SANITATION



7 AFFORDABLE AND
CLEAN ENERGY



9 INDUSTRY, INNOVATION
AND INFRASTRUCTURE



11 SUSTAINABLE CITIES
AND COMMUNITIES



12 RESPONSIBLE
CONSUMPTION
AND PRODUCTION



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

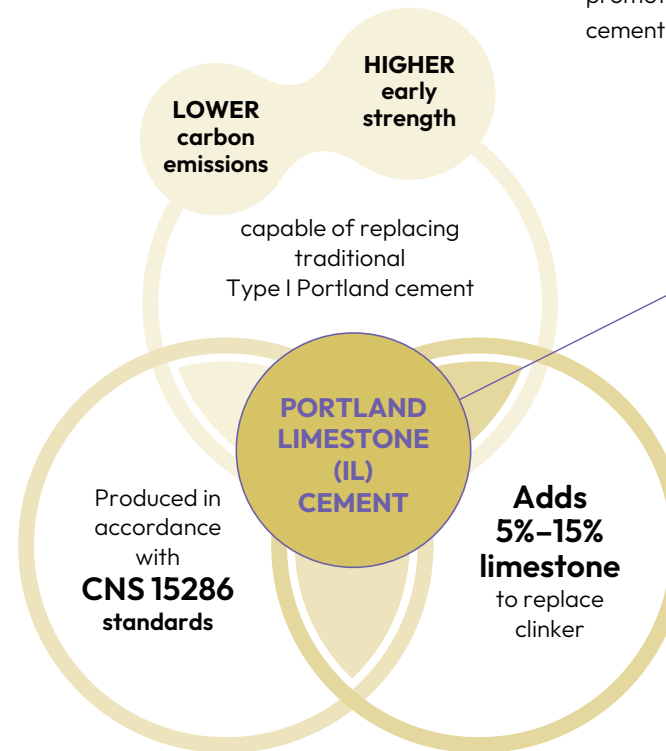
Climate Resilience Products: Total Climate Portfolio



Total Climate Portfolio

The Company is firmly committed to the strength and safety of its low-carbon products. In 2023, it developed an innovative lower-carbon green formula and launched the Total Climate Portfolio. The inaugural release, Portland Limestone (IL) Cement, targets corporate facilities and leading construction and development companies with carbon reduction concepts, partnering with clients to embrace the carbon pricing era and guiding the construction market to establish sustainability awareness.

Given initial concerns from Taiwanese ready-mixed concrete operators during the introduction phase, the Company, the Taiwan Construction Research Institute, and the Taiwan Concrete Institute jointly compiled the Portland Limestone Cement Concrete User Manual. This manual provides specific guidelines for project authorities, design and construction units, the construction industry, and ready-mixed concrete operators. It covers limestone cement characteristics, application benefits, mix design, construction precautions, and quality management to ensure engineering quality and promote the correct use of Portland Limestone cement concrete.



capable of replacing
traditional
Type I Portland cement

Compared to traditional cement
• **Cement Carbon Reduction: 24.6%**
• **Concrete Carbon Reduction: >50%**

| Baseline: Low Carbon Assessment Standard of
the Ministry of the Interior, Taiwan



Overview

Governance

Carbon Reduction

Low-Carbon Construction Materials

Resource Recycling — City Mining

Low-Carbon Production Management

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

6 CLEAN WATER AND SANITATION



7 AFFORDABLE AND CLEAN ENERGY



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



2025 TCC GROUP HOLDINGS SUSTAINABILITY REPORT

Ultra-High Performance Concrete (UHPC)

UHPC is a novel concrete developed in recent decades. Its discontinuous pore structure effectively inhibits harmful substances like chlorides, offering higher mechanical properties and durability than traditional concrete. With a century-long life cycle and lower material consumption, replacing traditional reinforced concrete with UHPC reduces component thickness, material usage, and carbon emissions.

Its high plasticity breaks through traditional designs, making it irreplaceable in high-specification scenarios like the Louvre Abu Dhabi. TCC targets heavy industrial fields, launching UHPC KT Board (Precast K-Truss Floor Slab), grass pavers, and paving bricks. Unrestricted by precast methods, the Company developed formulas for cast-in-place engineering and integrated 3D printing technology to expand market applications.



Reduces building wall thickness

-75%

Extends building life cycle

~120 years

Carbon reduction of

60%

compared to conventional concrete

Cast-in-place type:

Overcomes pumping distance limits, suitable for the on-site construction phase of new structures



Spray/trowel type:

Thin-layer reinforcement increases the compressive strength of existing structures by over 30%, extending building service life



Precast type:

Replaces traditional cast-in-place construction with the precast method, reducing construction time by 50% while maintaining structural strength



3D printing type:

Responds to construction labor shortages and is applied to the EnergyArk® energy storage cabinet casing process, **reducing carbon by 50%** compared to metal energy storage cabinets (Please refer to [CH 3.1](#))



ACTION SPOTLIGHT

Next-Generation Innovative Construction Materials

X-Clinker

CIMPOR collaborated with Instituto Superior Técnico (IST) in Lisbon to develop a new hydraulic material, X-Clinker, which has been patented in the US, Europe, and Brazil. Through a fully electrified process, industrial by-products and C&D waste can be completely melted and used as raw materials, practicing the circular economy.

Coupled with renewable energy, the process reduces carbon emissions, achieving a carbon footprint of only 350 kgCO₂e/metric tons, significantly lower than traditional clinker, making it a highly potential low-carbon alternative. CIMPOR will continue to expand production, targeting an industrial scale of 300-400 metric tons/day. Furthermore, CIMPOR initiated a three-year collaboration

with the CSIC/Eduardo Torroja Institute for Construction Science (IETcc) in 2024 to promote X-Clinker in obtaining the European Technical Assessment (ETA) to enter the EU market.

Biochar

TCC develops biochar, combining its carbon sequestration potential to complete the last mile of the net zero pathway. Trials by the Company show that replacing 10%-20% of cement with biochar can increase the compressive strength

of concrete. When the replacement ratio reaches 20%, carbon emissions can be reduced by 63.2% without compromising strength. Increasing the replacement rate to 35% can even achieve a carbon-negative effect. TCC will continue to develop biochar applications, such as 3D printing building materials and coral restoration bricks.



Overview

Governance

Carbon Reduction

Low-Carbon Construction Materials

Resource Recycling — City Mining

Low-Carbon Production Management

Energy Transition

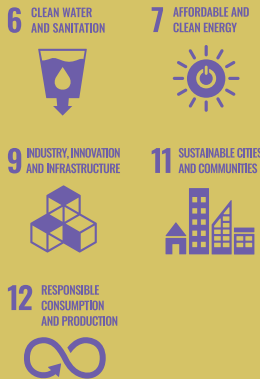
Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS SUSTAINABILITY REPORT

Development of Low-Carbon Technology and Methods

Alternative Clinkers

Natural Pozzolan

Cape Verde in Africa has abundant pozzolan resources. Using pozzolan in CEM II 42.5 cement can approach zero carbon emissions per metric tons of pozzolan, directly replacing traditional clinker, which emits 750-800 kg of carbon per metric tons.

Steel Mill Slag Reuse

The Aslan Plant in Türkiye operates a slag grinding facility with an annual capacity of 360,000 metric tons. Through grinding, separation, and filtration technologies, granulated blast furnace slag generated during steel production is processed into Supplementary Cementitious Materials (SCM), replacing up to 95% of traditional clinker.

Recycled Concrete Waste

CIMPOR uses high-efficiency separation technology to reprocess recycled concrete waste into recycled concrete powder. The new cement formulas CEM II/A-F and CEM II/B-F can use up to 35% recycled concrete powder to replace clinker, recycling concrete waste. For more information, please refer to [Pillar III](#).

ACTION SPOTLIGHT

Global Innovation Base

CIMPOR Central Laboratory and future R&D center

Portugal

The CIMPOR Central Laboratory and R&D Center, located at Alhandra cement plant, handles product analysis, new material development, and technical optimization, holding NP EN ISO/IEC 17025 and NP EN ISO 9001 certifications with over 200 testing capabilities.

In 2025, it was decided to expand its research capacity by investing €155 million in a new R&D center. Scheduled to open in 2027 as a "Living Lab," the center will focus on decarbonization technologies for the cement industry like novel low-clinker cement, novel SCM, carbon capture, alternative fuels and raw materials, recycling of

construction and demolition materials, circular concrete, AI-driven digital manufacturing, 3D mortars and concrete printing, and much other research streams, while supporting pilot-scale trials to accelerate green innovation. It is expected to create over 100 professional jobs alongside training programs, hosting workshops, seminars, and tours to unite employees, academia, and startups as an open platform for sustainable construction technology.



Controlled Carbonation

CIMPOR's Central Laboratory is researching controlled carbonation (recarbonation) technology and expects to develop proprietary equipment for recycled concrete. Through this technology, carbon dioxide from cement kiln exhaust gas can be directly reused in the future without a pre-carbon capture process, producing supplementary cementitious materials (SCM) that can permanently sequester carbon. It is estimated that each metric ton of SCM can sequester over 100 kg of carbon dioxide, further reducing the product carbon footprint.

Low-Carbon Construction Materials R&D Center

Taiwan

Equipped with a TAF-certified cement, civil, and public engineering materials laboratory, it is the only R&D center in Taiwan to obtain dual certifications for the cement and concrete TAF certification. It is responsible for analyzing the properties of constituent materials in cement and concrete, controlling product quality, and expanding product verification capacity, such as "CNS 15286 hydraulic blended cement" testing. Meanwhile, the Low-Carbon Construction Materials R&D Center also continuously invests in developing new low-carbon materials, technologies, and products, such as 3D printing materials.



Overview

Governance

Carbon Reduction

Low-Carbon Construction Materials

Resource Recycling — City Mining

Low-Carbon Production Management

Energy Transition

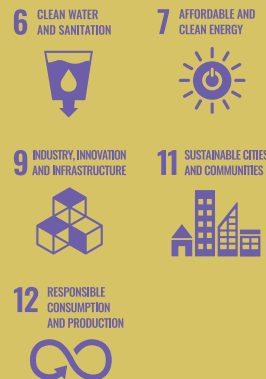
Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS SUSTAINABILITY REPORT

Product Performance AI Prediction

CIMPOR has deployed the Alcemy Predictive AI system across its Portuguese cement and concrete plants, combining machine learning

with sensor data to transform traditional post-production testing into proactive quality control. Please refer to [Pillar IV R&D Integration](#).

Alcemy Cement Module

Alhandra and Aslan plants

The Company integrates existing analyzers and automatic sampling systems to upgrade quality control and processes through AI prediction.

This accelerates the introduction of supplementary cementitious materials (SCM), such as calcined clay and granulated blast furnace slag, to promote the development and production of low-carbon products.

- **AI-Driven Prediction of Early and 28-Day Strength:** By integrating multidimensional physicochemical data analysis—including X-ray Diffraction (XRD), X-ray Fluorescence (XRF), Particle Size Analysis (PSA), Loss on Ignition (LOI), and fineness—the system introduces AI predictive models to calculate early and 28-day compressive strength in real time. This breaks through the limitations of traditional 28-day lagged testing, enabling plants to adjust proportions ahead of schedule and shifting from passive inspection to proactive control.

- **Reducing Quality Fluctuations, Enhancing Energy Efficiency, and Reducing Carbon Emissions:** Through a closed-loop quality optimization system, AI dynamically adjusts grinding parameters in real time without manual settings. This improves product consistency and performance, reduces quality fluctuations, and enhances process stability, thereby increasing energy efficiency and lowering the clinker incorporation factor in cement.
- **Future Development Direction:** Track and quantify clinker blending effectiveness to achieve fully automated AI-driven proportioning.

Pilot Results:

Evaluated the performance difference between "applying AI recommendations" and "traditional operator settings." Results show that adopting AI recommendations significantly improves cement quality and processes.

Testing Alcemy Concrete Module

Kurtköy, İzmit, Alhandra, and Loulé plants

Extending digital quality control from plant to jobsite via AI-predicted fresh concrete properties. Deployed across multiple sites to enhance model adaptability under varying production and field conditions.

- **Predicting Fresh Concrete Properties:** Integrates plant data (mixer power curves, temperature, moisture, density) and transit mixer telemetry (drum hydraulic pressure, speed, water additions) with jobsite performance. This creates a data pipeline (Plant & Transit Data → AI Prediction → Jobsite Performance) to forecast slump, early strength, and overall performance.
- **Information Sharing:** Streams real-time concrete status during transit to plant operators and enables jobsite personnel to view data via QR codes, boosting collaborative QC efficiency.
- **Future Development Directions:** Improve the early quality warning system to proactively identify potential quality gaps, enhance slump prediction accuracy, and add strength prediction functions, expanding the application scope to hardened concrete.



Driving Low-Carbon Product Development and Strengthening Sustainable Design Theory and Practice

The Company trained R&D and technological innovation units on low-carbon design theories and technological developments. In March 2026, experts from the Industrial Technology Research Institute (ITRI), Environmental Technology, UL, and Bureau Veritas (BV) held in-person training on "Environmental Product Declaration (EPD) Trends and Applications," analyzing ISO 14040/14025, EU EN 15804 standards, Digital Product Passport (DPP), and product development trends. Through Life Cycle Assessment (LCA) practices, the R&D team was guided to introduce sustainable design principles from the source, quantify product environmental impacts, and strengthen sustainable R&D of low-carbon construction materials and green energy products, with 72 participants.



Overview

Governance

Carbon Reduction

Low-Carbon Construction Materials

Resource Recycling — City Mining

Low-Carbon Production Management

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

6 CLEAN WATER AND SANITATION



7 AFFORDABLE AND CLEAN ENERGY



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



2025 TCC GROUP HOLDINGS SUSTAINABILITY REPORT

Industry-Government-Academia Engagement and Communication

TCC formulates its “Climate-related Public Participation and Management Policy”, actively engaging with authorities, academia, and professional institutions. The Company joins discussions on net-zero transition and industrial technology to help build a comprehensive, feasible regulatory system. TCC also drives global industrial and academic advancement through paper publications, technical forums, and transnational exchanges. By linking industry practices with policy goals, TCC expects to promote knowledge sharing, thereby driving construction carbon reduction and accelerating the cement industry's green transition.

2025 Industry-Government-Academia Engagement Status

Engaged Units	Industry-Government-Academia Engagement Focuses
Ministry of Environment, Climate Change Administration (Ministry of Environment), Office of Trade Negotiations of the Executive Yuan, and scholars in relevant fields	Discussed planning the product carbon emissions pilot reporting system for the Taiwan Carbon Border Adjustment Mechanism (Taiwan CBAM). Topics included categories of imported cement products to be reported, providing data for the MOE to set default values, and evaluating the planned control principles and screening methods. The discussions also emphasized that carbon emission calculation boundaries for imported and domestic cement products must be consistent. Through this engagement, the promotion of Taiwan CBAM was formally announced at the presidential level during the 4th National Climate Change Committee meeting.
Ministry of Finance	The anti-dumping duties and provisional anti-dumping duties imposed on imported Portland cement and its clinker produced in Vietnam have been implemented since July 2025.
Ministry of Economic Affairs, Ministry of Environment	Discussed the draft of the Manufacturing Sector Decarbonization Flagship Action Plan, proposing to include policies that create market demand for low-carbon construction materials, including the procurement of low-carbon construction materials for public works, revision of public works construction outline specifications, and linking the commodity tax system with climate policies.
Bureau of Standards, Metrology and Inspection, MOEA	Conducted seminars on low-carbon cement and CCU measurement and verification technologies; deliberated on chloride ion concentration in cement to align with international standards, facilitating the Bureau of Standards, Metrology and Inspection (BSMI) to announce the latest CNS61 standard on 2025/12/19, which revised the chloride ion limit for Type I Portland cement and Type IA cement from 240 ppm to 350 ppm.
Ministry of Environment	Discussed the draft amendment to air pollutant emission standards for the cement industry; reviewed and amended the specifications and standards for cement environmental protection labels; formulated Product Category Rules (PCR) for fiber cement, fiber concrete, and gypsum building material products for the industry to calculate carbon footprints; participated in the design of Taiwan's cap-and-trade emission trading system (ETS).
ATIC — Associação Técnica da Indústria de Cimento, University of Évora, European Cement Research Academy (ECRA), and VDZ	CIMPOR launched, within ATIC, the PT Carbon Link aiming at doing research, discussing carbon reduction measures and technologies in the cement industry with the government, academia, and research institutions, and promoting the establishment of relevant regulations and laws for deploying CCUS technologies and supporting the cement industry in achieving the 2045/2050 climate neutrality targets.
Ordem dos Engenheiros — Região Sul and Startup Lisboa, Quadrante	CIMPOR supported the creation of the Engineers Hub in Lisbon, Portugal, connecting engineers, industries, and academic research institutions to promote the exchange and development of low-carbon construction materials, AI, 3D printing, and circular economy technologies, strengthening innovation and sustainable development in the engineering and construction industries in Portugal.
Taiwan Carbon Solution Exchange (TCX)	Participated in the "Parallel Net Zero and Growth: Strengthening Market Mechanisms in Carbon Pricing" seminar, calling for the dual transformation of industry and systems; urged the government to propose policies to create market demand for low-carbon construction materials, including the procurement of low-carbon construction materials for public works, transitioning public works construction outline specifications from formulation-oriented to performance-oriented, and linking the commodity tax system with climate policies.
Taiwan Green Productivity Foundation	Discussed refinement strategies for the net zero emissions pathway of the cement industry.



Overview

Governance

Carbon Reduction

Low-Carbon
Construction Materials

Resource Recycling —
City Mining

Low-Carbon Production
Management

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



2025 Academic Publications

Journals

Publication Highlights

GCCA 2025 Net Zero Progress Report

Aligning with GCCA Net Zero Initiative: TCC and CIMPOR Dual-Track Drive for the Cement Industry's Net Zero Future

In response to the GCCA's stance on carbon pricing and preventing carbon leakage, the Company assisted in drafting the Taiwan CBAM, facilitating mandatory carbon emissions reporting for imported cement by 2026. The Company also co-planned the pilot carbon trading market (ETS) for 2026 and advocated for including low-carbon procurement in public construction projects within the National Greenhouse Gas Reduction Action Plan. Furthermore, the Company established the Low-Carbon Construction Pioneers Alliance to drive green transition in the construction industry. CIMPOR responded to GCCA's decarbonization pathway by actively developing calcined clay technology and launching low-carbon products. In addition to the successful operation of the Côte d'Ivoire Plant, large-scale production lines were expanded in Cameroon, Ghana, and Portugal.

Concrete Technology Journal Vol. 19 No. 1

Prospects and Challenges of Limestone Calcined Clay Cement (LC3)

CIMPOR leads the world in developing limestone calcined clay cement (limestone calcined clay cement, LC3) technology, reducing the clinker ratio to 50% and integrating local resources. While ensuring product mechanical performance, it achieves a carbon reduction benefit of 40%, becoming a benchmark solution for low-carbon construction materials to address climate change.

2025 Taiwan Concrete Institute Annual Meeting and Concrete Engineering Conference

Durability of Portland Limestone Cement (IL) in Sulfate Environments: A Study on the Effect of Fine Ground Limestone Powder Content

Research confirms that the Company's Type IL cement, while reducing the product carbon footprint, maintains building structural safety and durability in extreme environments, overcoming concerns about the application of low-carbon construction materials.

Multi-Source Waste Glass Recycling for Highly Reactive Pozzolanic Materials

The Company successfully converted multi-source waste glass into highly reactive pozzolanic materials, implementing resource recycling and addressing decarbonization challenges in cement production lines.

Concrete Technology

Renewable Resource Recycling Center (RRRC): UHPC Creates Low-Carbon Buildings

UHPC building application example: TCC used self-developed UHPC to construct the exterior curtain wall of the RRRC, providing wind and water resistance. Leveraging the properties of UHPC, the exterior wall thickness is reduced to only 2.5–3.5 cm, significantly lowering the steel structure weight required and extending the service life of the UHPC concrete to 120 years.



Overview

Governance

Carbon Reduction

Low-Carbon
Construction Materials

Resource Recycling —
City Mining

Low-Carbon Production
Management

Energy Transition

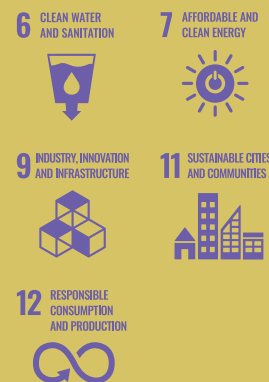
Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

2.2 Resource Recycling — City Mining

"There is no absolute waste, only misplaced resources." Domestic waste, construction and demolition waste, and industrial waste become new resources through high-temperature cement kiln co-processing. Thus, the cement industry is known as an "urban purifier."

The cement kiln's 1,450°C core renders waste harmless without generating any waste requiring secondary treatment. A World Business Council for Sustainable Development (WBCSD) report indicates that cement kilns' high temperatures decompose dioxins that incinerators cannot process. Thus, cement kiln co-processing is a circular economy venous industry, rendering waste harmless and recycling it as resources. After high-temperature decomposition, waste

converts into alternative raw materials or alternative fuels for cement, reducing reliance on natural resources and fossil fuels.

TCC and enterprises, local governments jointly create a circular symbiosis sphere, continuously assisting in processing difficult-to-dispose industrial waste and domestic waste; TCC also collaborates with construction companies to return demolished construction and demolition waste (C&D waste) to TCC for screening and reuse as alternative raw materials and fuels, remanufacturing them into low-carbon cement or concrete. This is not just a method for processing waste, but also a way towards future resource sustainability; in an era of increasingly scarce resources, the cement kiln is no longer just a production facility, but a key to resource circular regeneration.

What Is City Mining

Future cities will no longer be viewed merely as resource consumption sites but as important "urban mines." Metals and raw materials are extracted by recycling waste, demolished construction materials, waste batteries, and electronics. Compared to traditional natural resource extraction, City Mining re-extracts metals, minerals, and materials through recycling, reuse, and circular technologies. This not only reduces primary resource consumption but also reduces carbon emissions and waste generation, serving as a key resource for the circular economy and low-carbon transition.



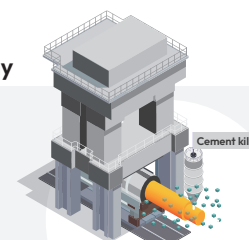
Cement Kiln Co-processing Technology 5 Characteristics of Circular Economy

1 Resource Reuse

The high-temperature process of cement kilns is utilized to convert thermal energy, minerals, and usable components in waste into alternative fuels and raw materials.

2 Diverse Waste Treatment

TCC co-processes city wastes, sludge, scrap tires, waste oil, waste solvents, and waste generated by high-tech and semiconductor industries, among others.



3 High-Temperature Complete Decomposition

The 3T (high temperature, high turbulence, and long retention time) characteristics of cement kilns are utilized to completely decompose organic matter and harmful components in a high-temperature environment of approximately 1,450°C.

4 Zero Secondary Pollution

Heavy metals and inorganic substances are solidified within the clinker structure, reducing the risk of secondary pollution.



5 Composite System Application

Existing cement industry facilities are utilized without requiring significant new investments or land use.



Overview

Governance

Carbon Reduction

Low-Carbon
Construction Materials

Resource Recycling —
City Mining

Low-Carbon Production
Management

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

TCC Circular Economy Model

RESOURCE CIRCULATION

Alternative Raw Materials

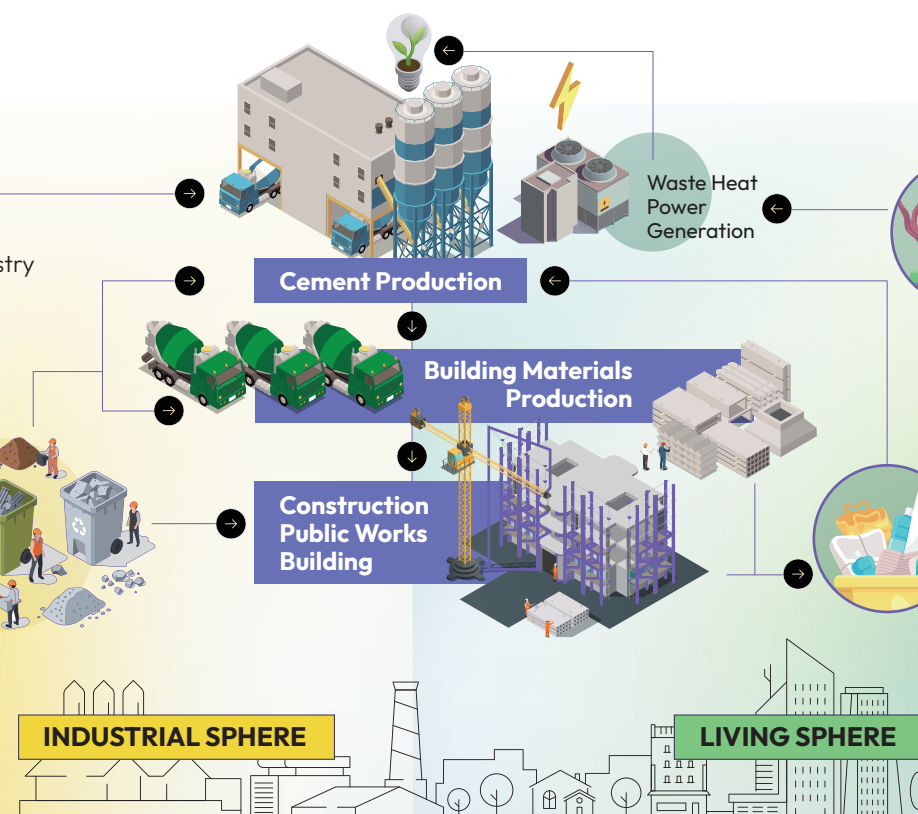
Industrial Waste

- ⊕ Semiconductor Industry | Electronic Packaging Industry
- ⊕ Power Plants | Incineration Plants
- ⊕ Water Purification Plants | Optoelectronics Plants
- Steel Mills | Paper Mills

Construction Waste

Recycling and Crushing of Concrete Construction Waste

- ⊕ Public Works Construction
- ⊕ Green Buildings
- ⊕ Urban Renewal



ENERGY CIRCULATION

Alternative Fuels

Agricultural and Forestry Surplus Materials / Biomass Fuels

- ⊕ Leucaena (White Leadtree)
- ⊕ Rice Husks / Rice Straw / Stalks
- ⊕ Waste Wood / Roadside Tree Pruned Branches
- ⊕ Waste Albizia
- ⊕ Waste Cooking Oil

Solid Recovered Fuel from Urban Waste (SRF)

Household Waste

- ⊕ Old Clothes / Waste Textiles
- ⊕ Tetra Pak / Bento Boxes (Meal Boxes)
- ⊕ Waste Paper / Waste Plastics
- ⊕ Tires / Rubber Sheets

Urban Mining Sustainability Benefit Dashboard

ECONOMIC

Reduce raw material and
fuel procurement costs, and
lower the risk of carbon fees.

ENVIRONMENTAL

Reduce the use of natural
resources and lower
greenhouse gas emissions.

SOCIAL

Improve the quality of the
living environment and
create job opportunities.



Overview

Governance

Carbon Reduction

Low-Carbon
Construction Materials

Resource Recycling —
City Mining

Low-Carbon Production
Management

Energy Transition

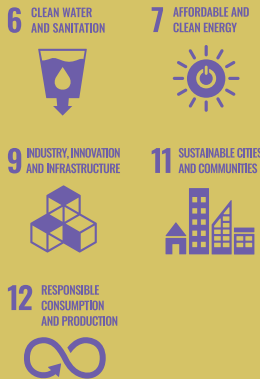
Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

Alternative Raw Materials and Fuels

Key Carbon Reduction Strategies

The GCCA points out that using alternative raw materials and fuels is a cornerstone for the cement industry's transition and the most effective carbon reduction method in the cement manufacturing process.

TCC's Cement and Environmental Protection Business actively invests in the development and application of various alternative materials. Considering the geographical characteristics, industrial, and regulatory structures of plant locations, TCC collaborates with local governments and enterprises to obtain stable material sources for testing.

To align with international carbon reduction trends, TCC continuously participates in government policy and industry seminars. In Taiwan, production must comply with CNS 61 Standard, where the chloride ion concentration standard is the threshold for using alternative materials. Following long-term engagement, in 2025, the Bureau of Standards, Metrology and Inspection (BSMI), Ministry of Economic Affairs updated the standard to adjust this limit from 240 ppm to 350 ppm, though a wide gap remains compared to EU regulations.

Scope 1

Carbon Reduction Strategy — Alternative Raw Materials and Fuels

Industrial by-products such as calcium fluoride sludge from the semiconductor industry, reduction slag from the steel industry, and desulfurization gypsum and fly ash from the power industry are rich in silicon, aluminum, iron, and calcium — the four key elements of cement — and can be used as alternative raw materials.

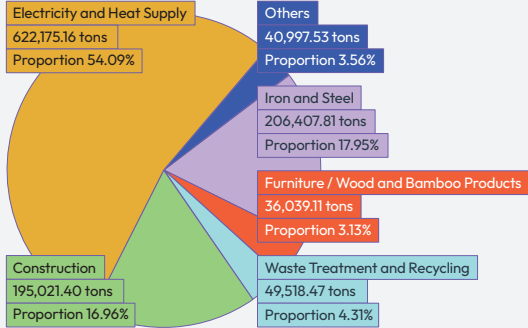
Recycled resources such as waste wood, wood chips, waste plastics, and solid recovered fuel (SRF) serve as alternative

fuels. After passing through the cement kiln precalciner and rotary kiln system, alternative raw materials undergo high-temperature calcination and mineralization/clinkering reactions together with other raw materials.

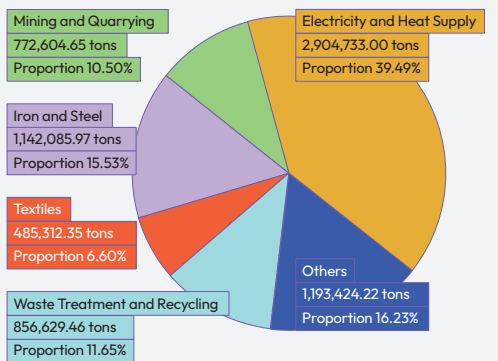
This integrates them into the clinker manufacturing process, further reducing the use of nature resources. Meanwhile, alternative fuels serve to reduce the consumption of traditional coal.

Sources of Waste Treatment at Global Plants

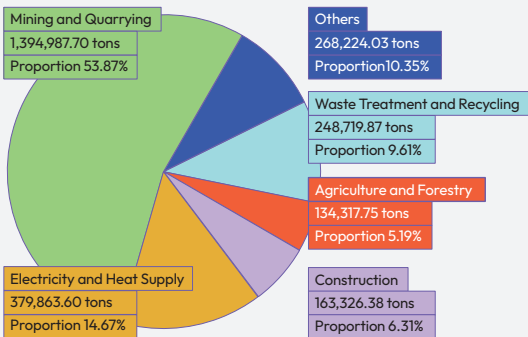
Taiwan



Mainland China



Europe & Africa



Note 1: For detailed information on the recycling of alternative raw materials and fuels in cement production, please refer to [CH 7.1](#). The concrete manufacturing process uses slag and fly ash as alternative raw materials to reduce cement usage. The Cameroon gypsum plant was not commissioned during 2025. In addition, TCC does not produce or sell asphalt.

TCC KEY FACTS

Total Industrial Waste Treated
11,094,388.45 tons
| Cement and Environmental Protection Business

Taiwan	1,150,159.48 tons
Mainland China	7,354,789.65 tons
Overseas	2,589,439.33 tons





Overview

Governance

Carbon Reduction

Low-Carbon
Construction Materials

Resource Recycling —
City Mining

Low-Carbon Production
Management

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

6 CLEAN WATER
AND SANITATION



7 AFFORDABLE AND
CLEAN ENERGY



9 INDUSTRY, INNOVATION
AND INFRASTRUCTURE



11 SUSTAINABLE CITIES
AND COMMUNITIES



12 RESPONSIBLE
CONSUMPTION
AND PRODUCTION



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

Development of Alternative Raw Materials and Fuels

Due to variations in the properties and compositions of different alternative raw materials and fuels, extensive testing is required to ensure their stable utilization. TCC conducts feasibility assessments for alternative raw materials and fuels, analyzes compositions, heating values, and moisture content, and performs hazardous element analysis, using them only after assessment and approval. The Low-Carbon R&D Center in Taiwan and the Central Laboratory in Portugal conduct professional inspection and testing to develop a more diverse range of material sources. To strengthen cost control, TCC established an environmental protection technology company in Mainland China to enhance the competitiveness of alternative material procurement.

Alternative Raw Materials and Fuels

Development Progress

Cement and Environmental Protection Business (Asia)

Waste glass fiber

The case-by-case reuse application has been approved, and an application to amend the stationary pollution source operating permit is planned for the first half of 2026.

Non-hazardous oily sludge from science parks

The ash composition of the sludge is 30-40% silica. Its low alkali content can replace some high-priced high-silica sand; with a heating value of approximately 3,300-4,000 kcal/kg, it can be used as alternative fuel.

Waste conveyor belts

Conveyor belts in the manufacturing industry are mostly made of rubber materials and possess heating value. Sources from the steel and petrochemical industries have been developed. After being processed by the plant's waste rubber crushing system, they can be used as alternative fuel.

Cement and Environmental Protection Business (Europe-Africa)

Corn stalks

Adana Plant has completed the installation, commissioning, and feeding trials of shredding equipment and storage facilities in 2025; continuous system optimization will gradually increase the replacement ratio. The annual usage is estimated at 80,000 tons, replacing 27,000 tons of fossil fuels.

ACTION SPOTLIGHT

Assisting the Semiconductor Industry — Calcium Fluoride Sludge Reuse

Hoping Plant and Suao Plant

Since 2002, TCC has collaborated with semiconductor-related industries, transforming unprocessable calcium fluoride sludge and waste molding compounds from major wafer manufacturing and packaging plants into alternative raw materials such as calcium and silicon for cement through cement kiln circular technology, helping solve the waste challenges of Taiwan's semiconductor industry.

Nut Shells, Traditional Chinese Medicine Residues, and Other Wastes as Biomass Fuel

Ivory Coast Plant, Adana Plant, Chongqing Plant, and Anshun Plant

The Cement and Environmental Protection Business actively develops agricultural waste as biomass fuel.

The Ivory Coast plant uses cashew shells as a biomass fuel. In Portugal, the Loulé plant utilizes olive pomace, while the Alhandra plant employs a açai lumps and olive pomace or lump as biomass fuels.

Türkiye's Adana Plant plans to use corn stover; it installed shredding equipment and storage facilities in 2025, officially beginning feeding trials. It will continue co-processing tests and system optimization to expand usage, aiming for an annual consumption of 80,000 tons to replace 27,000 tons of fossil fuels. Since August 2025, the Chongqing Plant has collaborated with the local government and villagers around Hechuan County to collect corn stover, reducing

farmland fire pressure and traditional burning air pollution to achieve a win-win with the community. In 2025, it processed about 600 tons, reducing 660 tCO₂e. The Anshun Plant began using Chinese medicine residue in July 2025, reaching a cumulative usage of 2,070 tons by the end of May 2026. For more information, please refer to the [TCC WeChat](#).





Overview

Governance

Carbon Reduction

Low-Carbon
Construction Materials

Resource Recycling —
City Mining

Low-Carbon Production
Management

Energy Transition

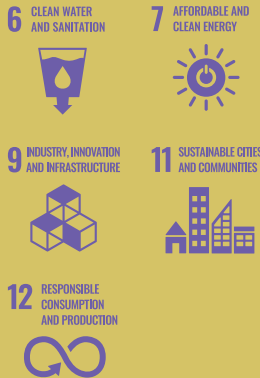
Employee

Nature

Social Inclusion

Appendix

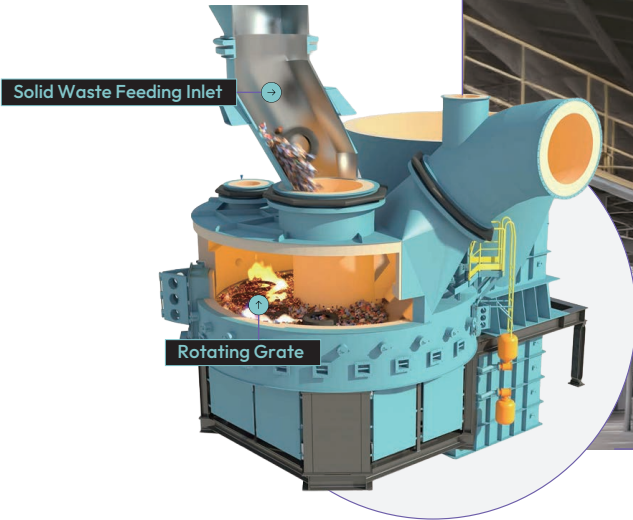
Alignment with SDGs



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

Alternative Fuel Technology Upgrades

The cement industry often faces significant processing costs when using alternative fuels, including substantial manpower and time required for on-site crushing and sun-drying to reduce moisture, as well as strict screening to remove impurities and avoid affecting production quality. Plants worldwide continuously improve system processes and equipment—such as optimizing feeding and combustion systems and introducing bypass chlorine bypass systems—to increase alternative fuel usage and the Thermal Substitution Rate (TSR). In 2023, the Suao Plant and the Industrial Technology Research Institute (ITRI) jointly completed the construction of the Cement Kiln High Calorific Value SRF Co-firing and Clean Integration System to collaborate on improving alternative fuel efficiency. The Solid Recovered Fuel (SRF) mixed with wood chips test burn verification was completed in March 2025, producing the optimal mixing ratio.



ACTION SPOTLIGHT

HotDisc System Increases Alternative Fuel Thermal Substitution Rate (TSR) by Over Two Times

Aslan Plant and Xuyong Plant

The HotDisc system significantly improves combustion efficiency through its rotating disc design and controllable speed, overcoming moisture content limits of alternative fuels. The feed size can be expanded to 2 meters, reducing crushing time, and ashes can be directly discharged through pipelines, no longer restricted by impurities. Aslan Plant in Türkiye implemented it in May 2020, increasing the alternative fuel thermal substitution rate

(TSR) from 30% to 60%. Xuyong Plant will complete installation in May 2026. Combined with the stable material supply advantage from converting the nearby Naxi Plant's original site into an alternative fuel storage facility, the TSR is expected to increase from 15% to 50%. Compared to peers in Mainland China that mostly apply this system to waste treatment, Xuyong Plant is the first to apply it to alternative fuels.



TCC KEY FACTS

Alternative Raw Material
Proportion

Cement 15.4%

Concrete 24%

Alternative Fuel Thermal
Substitution Rate (TSR)

19.88%

| Cement and Environmental Protection Business

TARGET

2030

Alternative Raw Material
Rate in Cement

| Cement and Environmental Protection Business

Asia 22%

Europe/Africa 5%

Alternative Fuel Thermal
Substitution Rate (TSR)

| Cement and Environmental Protection Business

Asia 35%

CIMPOR 70%

OYAK Cement Grey Cement 58%



Overview

Governance

Carbon Reduction

Low-Carbon
Construction Materials

Resource Recycling —
City Mining

Low-Carbon Production
Management

Energy Transition

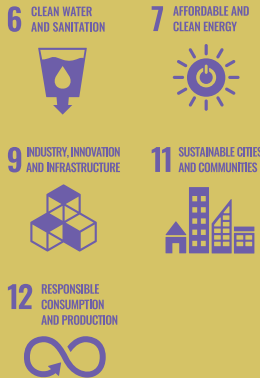
Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

Household Waste Treatment

According to UN estimates, global urbanization continues to accelerate. By 2025, approximately 45% of the 8.2 billion population reside in urban areas. Population growth leads to two major issues: domestic waste and construction waste. Regarding domestic waste, in addition to its continuous growth, methane emissions generated from landfilling could further exacerbate global warming.

The Global Warming Potential (GWP) of methane is 27.9 times that of carbon dioxide. With current methane concentrations exceeding the targets set by the Global Methane Pledge—signed by over 150 countries—regions worldwide are increasingly utilizing cement kilns for the co-processing of waste. This technology has been widely adopted in developed regions such as Europe, the United States, and Japan since the 1970s.

Household waste has high moisture content and numerous impurities. If directly fed into cement kilns for combustion, it will cause heating value fluctuations, affecting cement process stability. Therefore, it must first be crushed and dehydrated before subsequent processing.

Cement and Environmental Protection Business (Asia) deepens partnerships with local governments and industry partners, combining cement kilns and gasifiers to treat household waste, which also diversifies TCC's revenue sources. The TCC DAKA Renewable Resource Recycling Center (RRRC) can assist the Hualien County Government in processing up to 200

tons of household waste daily, and cement plants in Mainland China can collectively process 600 tons of local household waste daily. TCC utilizes existing cement industry resources to help local governments solve methane problems caused by waste accumulation.

Combustible gases generated from waste incineration are introduced into the cement kiln preheater

➔ Reduces cement kiln fuel usage

Odors generated during waste treatment are extracted into the gasifier and rotary kiln system, where the high temperature of the cement kiln completely burns off harmful gases and particles

➔ Generates no odors around the facility

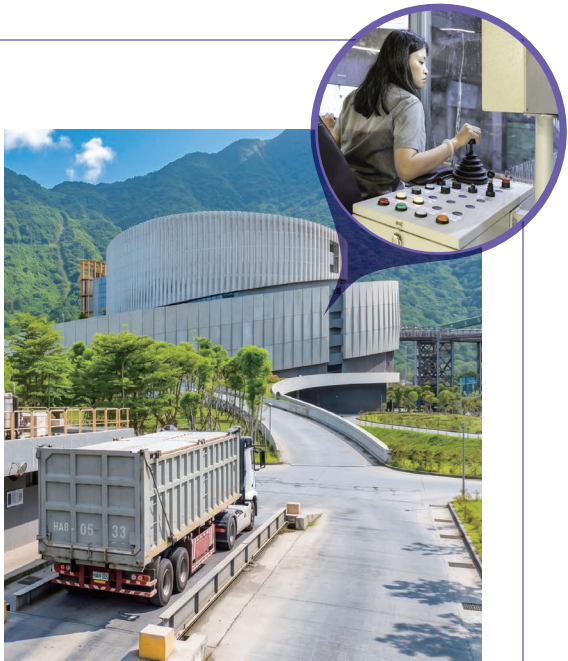
Sulfur, chlorine, and heavy metals in the exhaust gas are mixed with cement raw materials and absorbed to become cement clinker

➔ Significantly reduces acid gases, dioxins, and heavy metals

TCC KEY FACTS	
-90%	Dioxin vs. Regulatory Standards
-3%	Coal /Year

TCC DAKA Renewable Resource Recycling Center (RRRC)

TCC DAKA RRRC officially commenced operations on July 28, 2023, becoming the first facility in Taiwan to utilize cement kiln high-temperature co-processing for waste treatment. In the past, Hualien and Nantou were the only two counties in Taiwan without incinerators. Hualien's waste was transported to the Lize Incinerator in Yilan for a long time, resulting in transportation-related carbon emissions. Furthermore, the incineration process left behind bottom ash and fly ash that required alternative landfill sites. In 2019, the Hualien County Government sought TCC's assistance in processing Hualien's domestic waste, leading to a collaborative Build-Operate-Own (BOO) project for cement kiln co-processing of waste. This also marked the starting point for TCC to practice industry and community inclusion.



For more information, please refer to [CH 6.1](#) and [TCC's YouTube channel](#).

In addition to reducing methane emissions from landfills, it also reduces Hualien's waste transportation northward by 50 km, equivalent to an annual carbon reduction of 390 tCO₂e.

2025 Cement Kiln Co-processing Household Waste Status

Plant	Domestic Waste Treatment Volume (tons)	Avoided Methane Emissions (tons)
TCC DAKA RRRC	42,117	2,106
Shaoguan Plant	2,408	120
Anshun Plant	70,327	3,516
Jingzhou Plant	44,928	2,246
Total	159,780	7,989



Overview

Governance

Carbon Reduction

Low-Carbon
Construction Materials

Resource Recycling —
City Mining

Low-Carbon Production
Management

Energy Transition

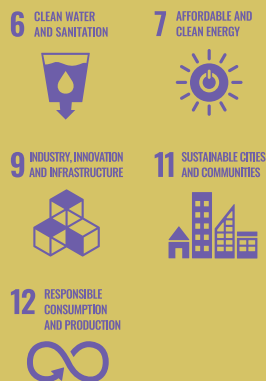
Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

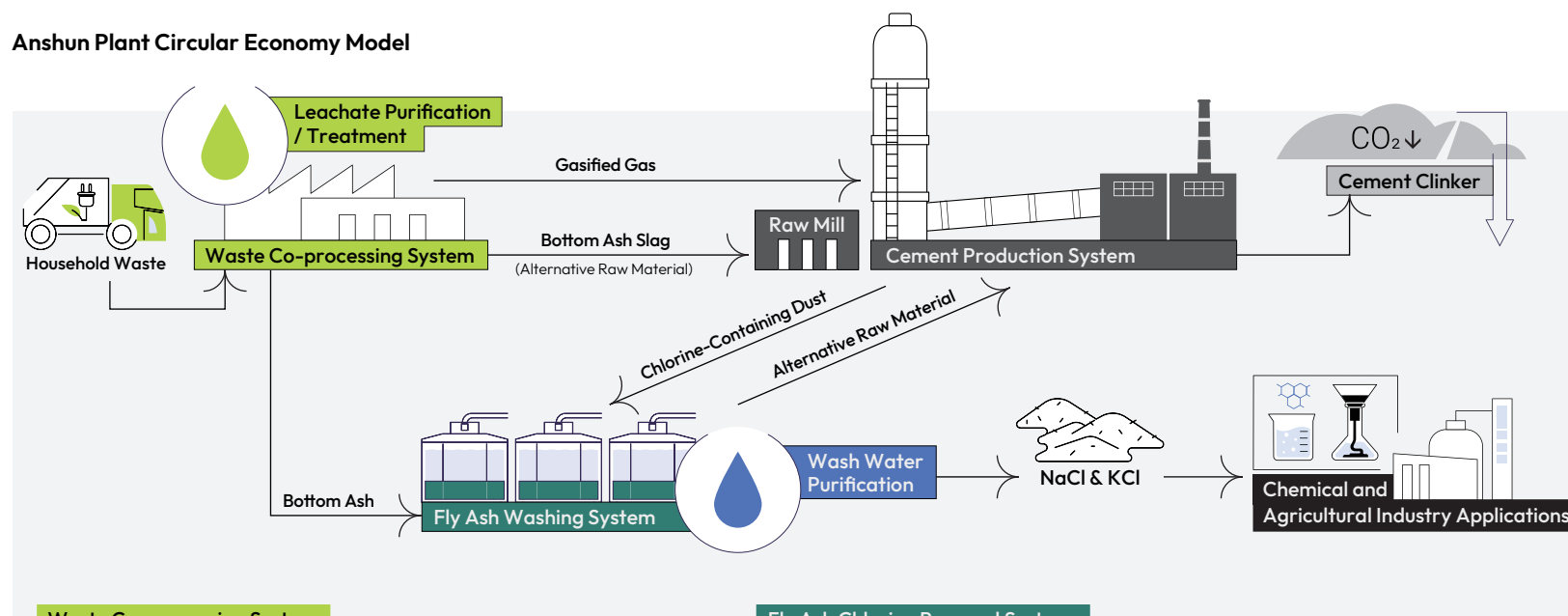
TCC Anshun Plant Co-processing of Fly Ash and Waste Treatment Selected as UN Convention "Waste-Free City"

Located in Pingba District, Anshun City, Guizhou, the Anshun plant is one of TCC's key cement production bases in Southwest China. In 2015, it added a household waste treatment project to assist in processing waste from surrounding communities and cities, becoming the Group's

first environmental protection demonstration plant to invest in cement kiln co-processing of domestic waste. In 2024, it further established a fly ash treatment system, successfully selected as a UN Basel Convention Regional Centre for Asia and the Pacific "Waste-Free City"

construction case. It is also among the first batch of 25 selected in Mainland China and the only hazardous waste fly ash resource utilization project in the circular economy field.

Anshun Plant Circular Economy Model



Waste Co-processing System

Through high temperature, fineness, concentration, adsorption, and uniformity combustion, the system effectively controls chlorine sources in gasified waste and completely decomposes dioxins. Combustible gases serve as alternative fuel for the cement kiln, and waste bottom ash is converted into alternative raw materials for cement. A fully sealed structure and extraction system keep the storage pit under negative pressure to prevent odor dispersion. In 2024, a leachate treatment system was added, treating refuse pit wastewater via nitrification and reverse osmosis for recycling within the waste co-processing system.

Fly Ash Chlorine Removal System

Constructed in 2024 to connect the cement kiln calciner and waste co-processing system. Fly ash undergoes washing, liquid purification, evaporation, and drying to detoxify chlorine ash from household waste and cement kiln combustion. Reusing fly ash eliminates soil and groundwater pollution from landfilling at the source and saves land resources. Washed fly ash become alternative raw material in the kiln, with each ton processed cutting ~0.3 tons emissions. The water purification system produces industrial-grade sodium chloride and potassium chloride by-products for chemical and agricultural industries. Remaining wastewater is recycled back to the fly ash system.

Basel Convention & "Waste-Free City"

The Basel Convention is the most authoritative environmental convention, established in 1989 by the United Nations Environment Programme (UNEP). At that time, as many developed countries dumped highly toxic hazardous waste into developing countries, nations legislated to control transboundary movements to maintain environmental justice, advocating for the harmless treatment and resource utilization of hazardous waste within domestic borders.



TCC KEY FACTS

Household Waste and Hazardous Waste Treatment Volume at Anshun Plant

Cumulative Municipal
Solid Waste Processed
580,751 tons

Annual Recycling of Wastewater
and Leachate
Over 5,200 tons
(saving 260 MWh of electricity)

Annual Fly Ash Treatment Capacity
50,000 tons
(equivalent to a carbon reduction of
15,000 tons of CO₂e)



Overview

Governance

Carbon Reduction

Low-Carbon
Construction Materials

Resource Recycling —
City Mining

Low-Carbon Production
Management

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

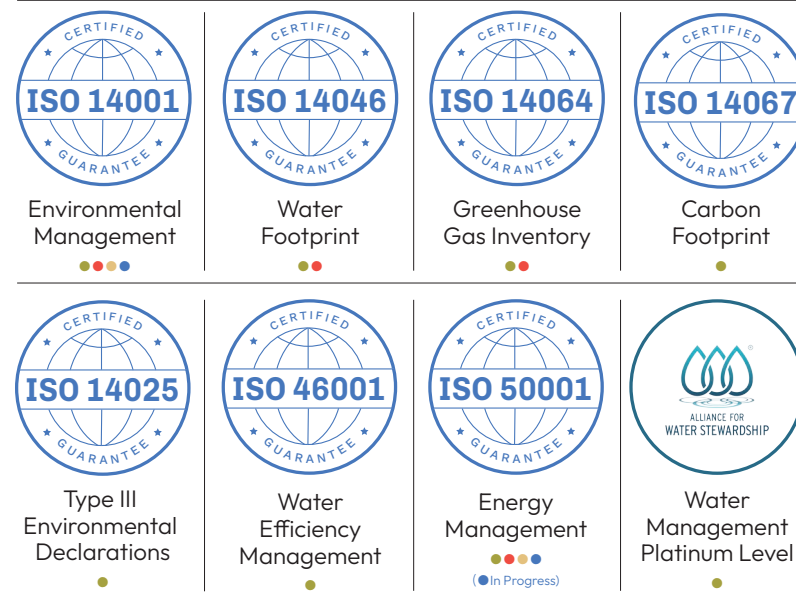
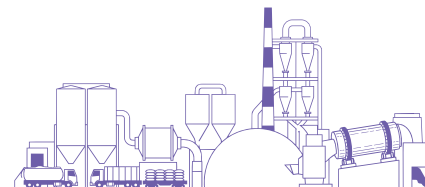


2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

2.3 Low-Carbon Production Management

TCC actively implements full lifecycle management to minimize the environmental impact of its product manufacturing processes. To thoroughly execute environmental management, TCC introduces international standard management systems and professional certification training across key dimensions, including greenhouse gas emissions, energy efficiency, water resources, waste, air emissions, and transportation.

Cement Plants



RMC Plants



Office



- Taiwan
- Mainland China
- OYAK Cement
- CIMPOR

Note 2: For details on environmental management certifications, please refer to [CH 7.1](#).

TCC KEY FACTS

100%
ISO 14001 Certification
Obtained

[Environmental Protection Policy](#)



Overview

Governance

Carbon Reduction

Low-Carbon
Construction Materials

Resource Recycling —
City Mining

Low-Carbon Production
Management

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

6
CLEAN WATER
AND SANITATION

7
AFFORDABLE AND
CLEAN ENERGY

9
INDUSTRY, INNOVATION
AND INFRASTRUCTURE

11
SUSTAINABLE CITIES
AND COMMUNITIES

12
RESPONSIBLE
CONSUMPTION
AND PRODUCTION

Environmental Management Process

STEP 1

Implement ISO Systems

By implementing international management systems including ISO 50001, ISO 46001, ISO 14001, ISO 14046, ISO 14064, and ISO 14067, TCC identifies energy and resource improvement opportunities to comprehensively enhance energy and water efficiency, while driving reductions in waste, air emissions, and greenhouse gases.

STEP 2

Environmental Management Target Setting | Cement and Environmental Protection Business

Environmental targets cover energy efficiency, water efficiency, waste reduction, air pollution reduction, and GHG reduction³

2030 Energy Intensity	2030 Water Withdrawal Intensity	Annual Waste Targets
≤2.306 GJ/t cementitious materials Smart Energy Coalition (EP100) Target: Increase energy productivity by 50% by 2040 compared to the 2016 baseline (Cement Plants) Cement and Environmental Protection Business (Asia) ≤3,300 MJ/t clinker CIMPOR Cement plant in Portugal	≤0.000248 million liters/t cementitious materials (Cement Plants) 1.5% reduction compared to the 2023 baseline (RMC Plants) Cement and Environmental Protection Business (Asia) ≤0.0002 million liters/t cement CIMPOR Cement plant in Portugal	0.5% annual reduction in in-house household waste (Cement Plants & RMC Plants) 100% of in-house waste converted into renewable energy and resources (Cement Plants) Cement and Environmental Protection Business (Asia)

Air Pollution Targets		
2030 Air Pollution Emission Intensity		
	Cement and Environmental Protection Business (Asia)	Cement and Environmental Protection Business (Europe-Africa)
NOx	≤370 g/t clinker	<500 g/t clinker
SOx	≤39 g/t clinker	<200 g/t clinker
TSP	≤20 g/t clinker	<5 g/t clinker
Mercury	-	<0.005 g/t clinker

STEP 3

Develop and Implement Action Plans

Develop specific action plans, including:

- Energy and GHG:** Implement energy-saving actions, use clean or renewable energy, and invest in innovation and R&D to reduce energy consumption.
- Water resources:** Execute water-saving programs, promote water recycling and reuse, and implement water recycling technology.
- Waste:** Implement waste reduction actions and recycling programs, and invest in innovative technologies.

STEP 4

Enhance Employee Capability

Build employee capacity and awareness through targeted programs:

- Education and training:** Offer ISO system certification training⁴ covering air emissions, water resources, waste, and energy management, and establish the Institute of Nextgen Sustainability to deepen professional knowledge and align with international standards.
- Awareness courses:** Utilize platforms like the TCC Lyceum and New Employee Training to deepen sustainability awareness and integrate it into daily work.
- Leadership communication:** Conduct Town Hall Meetings, chaired by the Chairman, to communicate the company's sustainability strategy directly to employees.

STEP 5

Engage with Stakeholders

Communicate environmental policies, requirements, and progress to all internal and external stakeholders. This is achieved through multiple channels, such as:

- Sustainability Newsletter
- Supplier Conference
- Product Promotion Events and Conferences

Note 3: For the 2050 targets and other environmental management goals, please refer to [Sustainability Goals and Tracking](#). For environmental targets of other businesses, please refer to the [ESG section](#) of TCC's official website and individual subsidiaries' sustainability reports.

Note 4: For details on the action plans, please refer to the [ESG section](#) of TCC's official website.



Overview

Governance

Carbon Reduction

Low-Carbon
Construction Materials

Resource Recycling —
City Mining

Low-Carbon Production Management

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

Energy Efficiency Management

TCC continues to implement the ISO 50001 energy management system across the Group, integrating it with a smart energy management platform to systematically inventory energy use and detect energy-saving opportunities.

Meanwhile, TCC actively optimizes energy efficiency through process improvements and manufacturing energy conservation, incorporating energy management into daily operations and internal management

mechanisms to regularly review performance.

In line with the Group's energy transition, TCC's sites also build on-site or purchase renewable energy, introduce energy storage systems, and

install or optimize waste heat recovery (WHR) systems based on operational conditions, reducing reliance on external power and ensuring low-carbon production. For details on energy-saving solutions, please refer to [CH 7.1](#).

Waste Heat Recovery Power Generation

100% of cement plants under the Cement and Environmental Protection Business (Asia) are equipped with waste heat recovery (WHR) systems. By in-troducing flash evaporation technology to improve heat recovery and power generation efficiency, these plants reduce purchased electricity for manufacturing processes by an average of 20% to 30%. The Cement and Environmental Protection Business (Europe-Africa) is also actively introducing these systems. Following the activation of systems at the Aslan and Bolu plants in Türkiye in 2023, new WHR installations of 4.3 MW at the Alhandra plant and 7.3 MW at the Souselas plant in Portugal will be added in 2025, which are expected to supply approximately 21% of the electricity required for manufacturing processes.

TCC KEY FACTS

100% obtained
ISO 50001

| Cement and Environmental
Protection Business (Asia)

**Waste Heat
Recovery (WHR)
Power Generation**

846,000 MWh
Equivalent to Purchased Electricity
for Processes 42.11%

| Cement and Environmental Protection Business (Asia)

97,000 MWh
Equivalent to Purchased Electricity
for Processes 6.21%

| Cement and Environmental Protection Business
(Europe-Africa)

TARGET

**1% Annual
Electricity Savings**

| the Group Operation Headquarters Building

Purchased Green Electricity From 2025 Onwards

📍 Taiwan

+100,000 kWh Annually

📍 Mainland China

+10,000,000 kWh Annually

| Cement and Environmental Protection Business (Asia)

By 2030

TARGET



**30% Energy Consumption
from Renewable Energy**



**70% of Electricity from Renewable
Energy and Waste Heat Recovery**

| Cement and Environmental Protection Business
(Europe-Africa)

Self-Generation and Consumption of Renewable Electricity

Rather than relying on purchasing renewable energy certificates as its primary strategy, TCC adopts a parallel approach of self-generation and consumption alongside green power procurement. It actively installs solar power generation systems on rooftops and unused areas of its global operational sites. Among them, the Heping and Suao plants are obligated renewable energy users and completed their obligations ahead of schedule in 2023. TCC also supports the development of the green power market at various sites; the Cement and Environmental Protection Business (Asia) has set green electricity procurement targets, while the Charging and Storage Business (Europe) also prioritizes purchasing green electricity for its office operations.

TCC KEY FACTS

**Self-Consumption Renewable Energy
Installed Capacity:**

217.81 MW

**Renewable Energy
Consumption Rate: 0.5%**

| Global Sites (Excluding Energy for Social
Transformation Business)

Note 5: Renewable Energy Consumption Rate =
Renewable Energy Electricity / Total Energy
Consumption. In 2025, the green electricity
utilization rate for the Cement and Environmental
Protection Business (Asia) was 4.71% of its total
electricity consumption.



Overview

Governance

Carbon Reduction

Low-Carbon
Construction Materials

Resource Recycling —
City Mining

Low-Carbon Production
Management

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

6 CLEAN WATER
AND SANITATION



7 AFFORDABLE AND
CLEAN ENERGY



9 INDUSTRY, INNOVATION
AND INFRASTRUCTURE



11 SUSTAINABLE CITIES
AND COMMUNITIES



12 RESPONSIBLE
CONSUMPTION
AND PRODUCTION



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

Integrating Solar and Energy Storage to Strengthen Power Resilience

TCC actively builds energy storage systems to support on-site power demands, participating in the electricity trading market by regulating peak and off-peak loads. During emergencies such as natural disasters or outages, these systems immediately discharge to supply power for production processes. In 2026, the Hoping and Suao plants commissioned 28.62 MWh and 12.876 MWh behind-the-meter energy storage systems, respectively. Featuring black start capability, they provide backup power during sudden outages for emergency material discharge into the kiln. Cement plants in Mainland China and CIMPOR's operations in Portugal also prioritize a "solar + storage" integration strategy. Among them, the Yingde Plant's 43.2 MW energy storage facility is the largest in Mainland China's cement industry.

TCC KEY FACTS

Installed Capacity of On-Site Energy Storage

Taiwan 41.496 MWh

Mainland China 140.8 MWh

| Cement and Environmental Protection Business (Asia)

Portugal 2.29 MWh

| Cement and Environmental
Protection Business (Europe-Africa)



ACTION SPOTLIGHT

OYAK Cement Selected for Industrial Development Bank of Turkey (TSKB) First Transition Finance Project Secures Funding to Install Solar Panels and Waste Heat Recovery (WHR) Power Gen- eration Systems

OYAK Cement secured a EUR 75 million financing package in early 2025 to install additional waste heat recovery (WHR) power generation systems at its Ankara, Adana, and Mardin cement plants in Türkiye, and to build a 115 MW solar project for self-consumption in the Beypazari district of Ankara. The solar project is expected to generate 237,000 MWh annually. Following its scheduled commissioning in 2026, the proportion of renewable energy in process electricity for OYAK Cement is projected to increase from 9% to 30%.

Jurong "3-in-1 Solar-Storage-Charging" Integrated Station Creating High-Efficiency C&I Smart Energy Solutions

TCC's Jurong Plant installed commercial and industrial (C&I) energy storage facilities and a "solar-storage-charging" 3-in-1 integrated station with a total capacity of nearly 17 MWh, including a 10 MWh containerized energy storage system and a 6.6 MWh newly launched EnergyArk® 418 energy storage system, enabling clients to enjoy energy-saving and cost-reduction benefits with zero upfront capital investment. Through virtual power plant (VPP) technology, the system integrates electricity price arbitrage, contract capacity optimization, and grid ancillary services, and

is expected to participate in spot electricity trading in the future to maximize the value of green energy.

In addition, this 3-in-1 solution uses precast concrete construction methods to build solar PV carports, significantly shortening the construction period by 50% and enabling completion in as fast as two weeks. This solution overcomes grid feeder capacity constraints while still providing fast charging services, meeting employees' EV charging needs and realizing low-carbon transportation and smart energy integration.



On-Site EnergyArk® Storage Systems

3-in-1
Solar-Storage-Charging
Integrated Station



Overview

Governance

Carbon Reduction

Low-Carbon
Construction Materials

Resource Recycling —
City Mining

Low-Carbon Production Management

Energy Transition

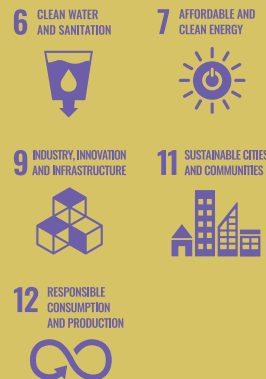
Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



Water Resource Management

Although the cement industry utilizes a dry process and is not considered water-intensive, TCC proactively strengthens its water management systems. To comprehensively grasp water resource risks, TCC follows the TNFD framework, prioritizing the Cement and Environmental Protection Business (Asia) and Cement and Environmental Protection Business (Europe-Africa) groups to identify the dependencies and impacts of its global quarries and operating sites on water flow and quality.

Using the WRI Aqueduct tool, TCC assessed water stress across sites in Taiwan, Mainland China, Europe, Türkiye, and Africa, identifying 108 sites in high water stress regions. Physical risks primarily involve potential shortages leading to rationing and production halts; transition risks encompass stricter wastewater discharge regulations, where non-compliance could result in fines or operational suspensions. Poor management could also disrupt surrounding domestic, agricultural, and ecological water supplies, impacting local communities and the environment.

To effectively manage consumption, TCC's cement plants in Taiwan and Mainland China have utilized a dedicated water footprint platform since 2022 to monitor supply, consumption, recycled water, and wastewater discharge data in real time, enabling instantaneous recycling rate calculations. TCC also actively implements ISO 46001 water efficiency management certification and ISO 14046 water footprint verification.

Cement plants in Taiwan and Molice (Tainan plant) are subject to water consumption fees. In

2025, their water recycling rates reached 98.6% and 51.8%, respectively, both exceeding the Water Resources Agency's industry benchmarks. For detailed water-saving measures, please refer to [CH 7.1](#).

Ecosystem Service Dependence Analysis of Water Resources | Dependence or impact levels are rated from 1 to 5, from lowest to highest

	Quarry	Cement Plant	RMC Plant	Aggregates Plant	Grinding Station	Port Area	Shipping Station	Environmental Protection Company	Power Plant	Paper Bag Plant
Dependency										
Water Flow Regulation Services	4	3	3	3	3	3	1	3	4	3
Water Purification Services	5	3	3	3	3	-	-	3	3	-
Water Supply	4	3	3	3	3	2	1	3	4	3
Impact										
Area of Freshwater Use	4	3	3	3	3	1	-	-	3	-
Area of Seabed Use	4	-	-	-	-	-	-	-	-	-
Emissions of Nutrient Pollutants to Water and Soil	-	3	3	3	3	3	1	4	-	-
Emissions of Toxic Pollutants to Water and Soil	4	5	5	5	5	2	1	4	5	3
Volume of Water Use	3	3	3	3	3	2	2	3	3	3



Overview

Governance

Carbon Reduction

Low-Carbon
Construction Materials

Resource Recycling —
City Mining

Low-Carbon Production Management

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

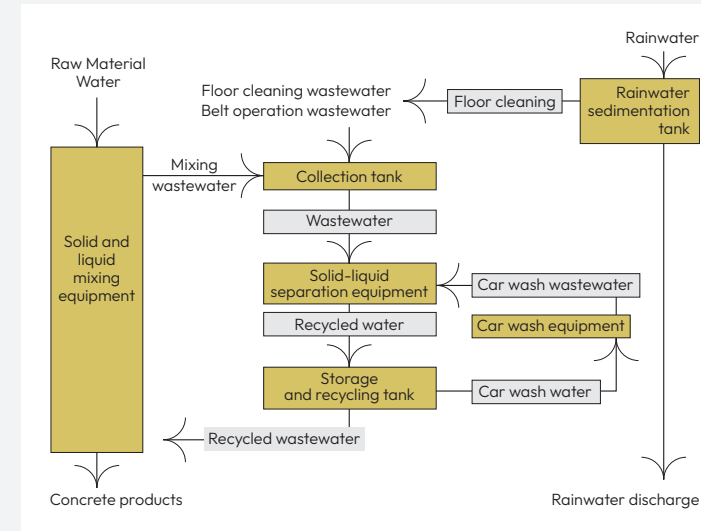
Water Withdrawal and Wastewater Management Mechanisms

Water Withdrawal Management Mechanism

- Rainwater recycling and reuse
| Selected cement plants in Mainland China⁶, CIMPOR and OYAK Cement plants and RMC plants, Ho-Ping Power Company, and Hoping EcoPort
- Establish water metering systems to monitor water consumption data
| Cement plants and RMC plants
- Regularly inspect pipelines for aging and leaks
| Cement plants and RMC plants
- Install additional filters and monitoring equipment to increase condensate recovery
| Ho-Ping Power Company
- Replace equipment with water-saving models and install automated watering systems for landscaping
| Ho-Ping Power Company

Wastewater Management Mechanism

Water Balance Diagram of RMC Plants



- 100% process wastewater recycled and reused with zero discharge
| Taiwan RMC plants, Mainland China cement plants and Fuzhou grinding plant
- Establish remote monitoring platform for runoff wastewater
| Taiwan RMC plants
- Install shipboard sewage treatment devices, discharge systems, and equipment complying with international marine environmental protection standards, and obtain the International Sewage Pollution Prevention Certificate (ISPPC)
| Ta-Ho Maritime
- Regularly test wastewater discharge indicators
| cement plants in Taiwan and Mainland China⁷ cement plants, Liuzhou grinding plant, and Ho-Ping Power Company
- Regularly monitor wastewater treatment and pollution prevention measures, with continuous tracking and review
| Taiwan and parts of Mainland China⁸ cement plants, and Ho-Ping Power Company

Note 6: Includes Chongqing, Guang'an, Xuyong, Anshun, Kaili, Yingde, Guigang, and Shaoguan cement plants.

Note 7: Includes Chongqing, Guang'an, Huaying, Xuyong, Anshun, Kaili, Jingzhou, Huaihua, Jurong, and Yingde cement plants.

Note 8: Includes Chongqing, Guang'an, Huaying, Xuyong, Anshun, Kaili, Jingzhou, Huaihua, Jurong, and Guigang cement plants.

Internal Water Pricing

Starting in 2025, TCC implements an internal water pricing system across the cement plants, RMC plants, and grinding stations of Cement and Environmental Protection (Asia). By introducing a water cost pricing model based on the water intensity of different operating units, regional water resource risks, and water price

trends, TCC aims to create economic incentives that drive water-saving improvements and achieve a win-win for environmental and operational sustainability.

Both Taiwan and Mainland China base their internal water pricing on the water consumption

fee of NT\$3 per cubic meter levied in Taiwan. The pricing for Taiwan sites is set at (local water price + NT\$3) per cubic meter, and for Mainland China sites at (local water price + RMB 0.75) per cubic meter.



[Water Management Commitment](#)



Overview

Governance

Carbon Reduction

Low-Carbon
Construction Materials

Resource Recycling —
City Mining

Low-Carbon Production
Management

Energy Transition

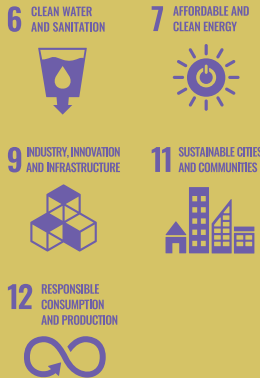
Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

Waste Management

TCC's global operations adhere to the ISO 14001 environmental management system (EMS) and have established waste management procedures to implement waste sorting and management, recycle recoverable waste, and enhance resource recycling awareness and actions through em-ployee education and training on waste reduction. Global operations are progressively setting waste reduction targets to strengthen the overall resource recycling efficiency of the Group.

- ▲ Industrial waste
- General waste (e.g., employee household waste, waste plastics, waste rubber, and waste paper)
- Waste that cannot be reused on-site, such as scrap iron and other valuable metals

Cement Plant
| Cement and Environmental Protection Business

- ▲ Sent to cement plants for processing in high-temperature cement kilns as alternative raw materials and fuels
- Used as alternative fuels after sorting and crushing
- Engages qualified waste clearance and disposal organizations for recycling according to regulations and sends waste to downstream industries such as steel mills for reuse, ensuring legal and traceable waste flows

RMC Plants, Grinding Stations, Offices,
and Other Sites
| Cement and Environmental Protection Business,
Charging and Storage Business, Battery Energy
Business, and Investment Business

- ▲ ● ■ Implements waste sorting and engages qualified vendors for disposal

Energy for Social Transformation Business

- ▲ All coal ash generated during power generation is transported to cement plants for recycling as raw materials
- Engages qualified vendors for disposal
- Engages qualified vendors to recycle scrap iron and other valuable metals for reuse in steel mills

Note 9: At Hoping 3-in-1 of Port, Power, Cement Plant, over 99% of the waste from Hoping Cement Plant, Ho-Ping Power Company, and Hoping EcoPort can be interdependently utilized. For more information, please refer to [CH 3.3](#).



ACTION SPOTLIGHT INVESTING IN INNOVATIVE TECHNOLOGIES

Hoping Plant & Yingde Plant Food Waste Processing Center

The Hoping and Yingde plants promote food waste recycling, converting it into fertilizers or soil improvement materials to give back to local neighborhoods. In 2021, the Hoping Plant established food waste recycling equipment to convert waste from TCC DAKA and surrounding community food stalls into soil improvement materials, provided free to villagers for agriculture and gardening. The

Yingde Plant built an integrated food waste treatment center, recycling food waste from employee cafeterias and nearby residents to produce organic fertilizers, soap, hand wash, crayons, and more. From 2020 to the end of 2025, the Hoping and Yingde plants invested a cumulative NT\$24,348,857.



Supporting Green Office and Green Mark Initiatives, TCC systematically implements eco-friendly measures across procurement, equipment management, and daily operations. This includes avoiding single-use items, prioritizing products with green marks or FSC certification, and promoting energy monitoring and efficiency.

- Procure eco-friendly toner cartridges and transition fuel official vehicles to electric vehicles.
- Promote paperless operations, prioritize electronic communication, and strengthen copy paper management.

- Recycle office supplies (e.g., paper clips, binder clips, file boxes) and adopt a "repair before replace" principle for photocopiers to maximize lifespan.
- Reduce trash cans to minimize garbage bags and install restroom hand dryers to reduce paper towel consumption.
- Install sensor lighting and program water dispensers to automatically shut down during specific hours to save power.
- Implements plastic reduction by introducing reusable glass cups and mugs, and completely phasing out coffee capsules | Atlante



Overview

Governance

Carbon Reduction

Low-Carbon
Construction Materials

Resource Recycling —
City Mining

Low-Carbon Production
Management

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

6 CLEAN WATER
AND SANITATION



7 AFFORDABLE AND
CLEAN ENERGY



9 INDUSTRY, INNOVATION
AND INFRASTRUCTURE



11 SUSTAINABLE CITIES
AND COMMUNITIES



12 RESPONSIBLE
CONSUMPTION
AND PRODUCTION



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

Air Emissions Management

TCC strictly controls process air emissions across all business entities, covering the management of stationary pollution sources, process equip-ment, and transportation. It regularly engages third-party organizations to test air quality and environmental impacts and sets up air quality moni-toring stations around the plants to ensure compliance with government emission standards. The global cement plants of Cement and Environmental Protection Business and Ho-Ping Power Company are equipped with continuous emission monitoring systems (CEMS) for air pollutants, which monitor the concentration and emission volume of air pollutants in plant emissions in real time and provide continuous data for observing changes. The operations in Taiwan and Mainland China are connected in real time with local environmental competent authorities; CIMPOR, OYAK Cement also operate within local regulations. Ta-Ho Maritime adheres to International Maritime Organization (IMO) regulations, monitoring sulfur oxides (SOx), nitrogen oxides (NOx), and ozone-depleting substances (ODS) to ensure compliance with all control area regulations.

ACTION
SPOTLIGHT

Ta-Ho Maritime Air Emissions Management

Ta-Ho Maritime adheres to IMO MARPOL Annex VI regulations, implements air pollution control management, and has obtained the International Air Pollution Prevention Certificate (IAPP) to ensure vessel operations meet international standards. The Company continuously monitors and controls pollutants such as SOx, NOx, PM₁₀, and volatile organic compounds (VOCs) to reduce environmental impact. In response to the 2020 global reduction of the sulfur content limit in marine fuel from 3.5% to 0.50%, and further to 0.10% in emission control areas (ECA), Ta-Ho Maritime fully complied by using low-sulfur fuel and optimizing operational management to reduce air pollution emissions.

Furthermore, the Company actively introduces energy-saving and low-carbon vessels, newly purchasing the TAHO COMPLIANCE and TAHO FANTASY to reduce pollutants and greenhouse gas emissions at the source by improving the Energy Efficiency Design Index (EEDI).

Through vessel equipment optimization, fuel management, and continuous monitoring mechanisms, Ta-Ho Maritime effectively enhances air pollution control performance, demonstrating its commitment to environmental protection and sustainable development.

Air Pollution Management Mechanism

- Installs Continuous Emission Monitoring Systems (CEMS)
| Global cement plants (under implementation in Ivory Coast), Ho-Ping Power Company
- Installs Selective Catalytic Reduction (SCR) systems to control NOx emissions
| Taiwan and some Mainland China¹⁰ cement plants, Ho-Ping Power Company, Kuan-Ho Refractories Industry
- Uses electrostatic or pulse jet bag filters to treat particulate pollutants
| Ho-Ping Power Company, Kuan-Ho Refractories Industry, CIMPOR and OYAK Cement
- Strengthens the airtightness of equipment and transportation processes to prevent pollutant leakage
| Taiwan and Mainland China cement plants, Fuzhou and Liuzhou grinding stations
- Uses denitrification equipment to remove NOx and wet limestone/gypsum desulfurization equipment to remove SOx
| Ho-Ping Power Company, CIMPOR and OYAK Cement
- Installs a 250-meter-high chimney to increase the dispersion capacity of gaseous pollutant emissions
| Ho-Ping Power Company
- Monitors air pollution emissions from ships in accordance with regulations and obtain the International Air Pollution Prevention Certificate (IAPP) issued by the International Maritime Organization (IMO)
| Ta-Ho Maritime

TCC KEY FACTS

NOx ^{-9%} SOx ^{-30%}

Compared to 2024 | Cement and Environmental Protection Business

Obtained **International Air Pollution Prevention Certificate (IAPP)**

Ta-Ho Maritime

Top Rating for RightShip Document Compliance

Ta-Ho Maritime's Bulk Fleet

Note 10: Includes Chongqing, Guangan, Huaying, Xuyong, Anshun, Kaili, Jingzhou, Jurong, Yingde, Guigang, and Shaoguan cement plants.



Overview

Governance

Carbon Reduction

Low-Carbon Construction Materials

Resource Recycling — City Mining

Low-Carbon Production Management

Energy Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

6

CLEAN WATER AND SANITATION

7

AFFORDABLE AND CLEAN ENERGY

9

INDUSTRY, INNOVATION AND INFRASTRUCTURE

11

SUSTAINABLE CITIES AND COMMUNITIES

12

RESPONSIBLE CONSUMPTION AND PRODUCTION

Transportation Management

TCC is committed to reducing greenhouse gas emissions generated during transportation by establishing a comprehensive transportation management mechanism covering land transport, maritime transport, and equipment efficiency management. Through measures such as vehicle electrification, the introduction of energy-saving technologies, and data-driven monitoring, TCC continuously improves transportation efficiency and reduces environmental impact. For more information on electric transportation, please refer to [Pillar IV](#).

ACTION SPOTLIGHT

Ta-Ho Maritime Low-Carbon Transportation

Ta-Ho Maritime actively promotes a low-carbon transportation transition, significantly reducing emissions and enhancing energy efficiency through shore power, next-generation eco-vessel procurement, and smart management.

Alternative Maritime Power (AMP) System: Completed phased installations since 2020. In 2025, usage reached 6,963 hours, totaling 5,716,002.7 kWh.

TAHO COMPLIANCE Eco Cement Vessel: Purchased in 2025, complying with IMO EEDI Phase 2 standards. It plans optimal routes and speeds via real-time satellite data to boost efficiency and fuel savings. It also features fully enclosed pneumatic cargo systems and AMP for zero-dust, low-emission port operations, and introduces the ClassNK-

certified NAPA Smart Ship Weather Navigation System.

TAHO FANTASY Eco-Friendly Bulk Carrier: Purchased in 2025, complying with IMO EEDI Phase 3 standards. It features optimized hull design, energy-saving propulsion, big data routing, and cloud fleet management, reducing fuel consumption by over 4.5% to maintain a top CII "A" rating. This complies with the CII regulation tightening 2.625% annually from 2027 and prepares for the 2028 GFI carbon tax. A similar Ultramax eco-bulk carrier will be introduced in 2026, paired with smart route data management to strengthen green capacity and competitiveness. It also features the ClassNK-certified NAPA Smart Ship Weather Navigation System.

Transportation Management Mechanism

Raw Material Transportation

Electric Mining Trucks: Replaced diesel trucks, saving 5.2 tons of diesel per truck monthly
| Taiwan and parts of Mainland China¹¹ cement and RMC plants

Enclosed Conveyors: Constructed corridors/belt conveyors in quarries/plants for direct limestone transport, replacing diesel trucks
| Hoping and Liaoning cement plants

New Energy Vehicles: Deployed for raw material transport
| Yingde, Guigang, and Shaoguan cement plants

Product Transportation

Electric Tractors: Used for cement products, targeting a 32% carbon reduction
| Taiwan cement plants

Eco-Friendly Mixer Trucks: Low-fuel models achieved a 97% ratio by year-end 2025
| Taiwan RMC plants

Electric Mixer Trucks: Deployed at CIMPOR (launching 2026) & Taiwan RMC plants (on road by 2026). See [Pillar IV](#)

New Energy Vehicles: Deployed for cement clinker transport
| Yingde, Guigang, and Shaoguan cement plants

Note 11: Includes Chongqing, Jurong, Yingde, Guigang, and Shaoguan cement plants.



Guigang Plant Builds a Low-Carbon Electric Heavy-Duty Truck Corridor

TCC's Guigang Plant actively deepens low-carbon transportation by partnering with NHOA. TCC to build a fixed electric heavy-duty truck corridor between the plant and Baisha Port (38 km one way). The plant deployed 63 electric trucks with 420 kWh batteries, expected to transport 1.8 million tons of cement and clinker in 2025. To manage the 2.4 MW grid load when 5 to 6 trucks charge simultaneously, the plant introduced a 1.67 MWh EnergyArk energy storage system and an energy management

system (EMS), reducing peak power consumption and optimizing costs.

This green fleet reduces maintenance costs and replaces traditional diesel, decreasing annual diesel consumption by approximately 1.36 million liters. This is equivalent to a 3,645 tCO₂e emission reduction, achieving a win-win for environmental carbon reduction and supply chain economic benefits.

Energy Transition

	Cement and Power Integration	119
3.1	Battery Energy Storage	120
3.2	Green Energy Supply	123
3.3	Renewable Energy Generation & Solution	125
3.4	Energy Transition	128
3.5	Social Aspects of the Energy Transition	130



Wind Tree-Style Small Wind Turbine

In the plaza of Nautilus Bibliotheca, the Wind Tree from France is a vertical-axis wind turbine whose leaves turn the lightest breeze into power. It reflects our care for biodiversity and reminds us that energy comes from nature.



Overview

Governance

Carbon Reduction

Energy Transition

Cement and Power Integration:
New Energy Full Value Chain Layout

Battery Energy Storage

Green Energy Supply

Renewable Energy Generation &
Solution

Energy Transmission

Social Aspects of the Energy
Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

7 AFFORDABLE AND
CLEAN ENERGY



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

119

Cement and Power Integration: New Energy Full Value Chain Layout



*Cement is foundation
— stable, enduring;
Energy is momentum
— fluid, agile.*

*Stillness and motion,
anchor and flow
— Supporting and transforming
within one system.*

2021 was the turning point. Acquiring NHOA Energy launched TCC's green energy transition.

Evolving from a building materials supplier into a key player in the new energy system, TCC embarked on its path of carbon reduction.

In 2022, TCC established Atlante to build an EV charging platform.

This marked a defining shift from "strategic investment" to "aggregating and incubating future industries."

Four-Layer Cake Theory of Cement and Power Integration : Cement as the Foundation, Power Flows Within

Energy-as-a-Service Business Model

Developing the Charging and Storage Business with Global Subsidiaries Deploying End-Market Applications

NHOA.TCC

atlante
POWER TO CHANGE

NHOA
ENERGY

CINAPOR
ENERGY

能元
超能

TCCOR

Energy Management System (EMS)

Powered by Edge AI and Cloud AI, it links distributed storage systems, transforming them into regional energy hubs that form virtual power plants (VPPs).

EnergyArk®

Leveraging the fire- and weather-resistant properties of Ultra-High Performance Concrete (UHPC), the EnergyArk® energy storage enclosure effectively prevents battery thermal runaway, ensuring safety across diverse applications. The system dynamically balances loads to enhance grid resilience, supports black-start and islanded operations, and resolves power bottlenecks caused by instantaneous high-power demands at fast-charging stations.

Cement Plant

Spacious grounds allow for utility-scale energy storage, while existing feeders support high-power transmission, facilitating grid connection and participation in power markets.





Overview

Governance

Carbon Reduction

Energy Transition

Cement and Power Integration:
New Energy Full Value Chain Layout

Battery Energy Storage

Green Energy Supply

Renewable Energy Generation &
Solution

Energy Transmission

Social Aspects of the Energy
Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

7 AFFORDABLE AND
CLEAN ENERGY



3.1 Battery Energy Storage

NHOA.TCC | NHOA Energy | CIMPOR Energy

AI growth drives data center power surges, elevating energy storage from a grid supplement to a critical strategic foundation supporting AI computing and grid stability. To meet the COP28 tripling renewable goal, the IEA projects global storage capacity to sextuple within a decade, with data center power exceeding 800 TWh in 2026 and AI loads driving over 60%.

TCC acquired Europe-based Engie EPS (renamed NHOA Energy) in 2021. Utilizing modular equipment and a proprietary Energy Management System(EMS), NHOA Energy integrates international technology and deployment experience. Positioned as a Virtual Power Plant(VPP) aggregator and operator, it offers solutions covering battery energy storage system deployment and VPP, focusing on urban and distributed scenarios to enable flexible power dispatch, market trading, and data



power dispatch, market trading, and data analytics. In 2025, CIMPOR established CIMPOR Energy, leveraging group resources to expand its storage presence across the Iberian Peninsula. Energy has evolved from mere infrastructure into an operable asset and managed system. For Energy Helper's AI aggregation platform, see [CH 3.3](#).

NHOA is derived from the name NOAH of Noah's Ark, symbolizing hope for emerging from disaster and the creation of a new era. The lines beneath NHOA's logo represent a new horizon, while the O is replaced by the Greek letter Ω , resembling a rising sun. Ω is also the unit of resistance in Ohm's law related to electricity. Facing the horizon of new green energy, NHOA brings a new beginning and mission, revitalizing the energy business brand.

NHOA.TCC | NHOA ENERGY

TCC | Global Energy Storage Presence

USA

NHOA Energy | Wilmington

Utility-scale sites offer potential for grid dispatch and market trading.

Italy

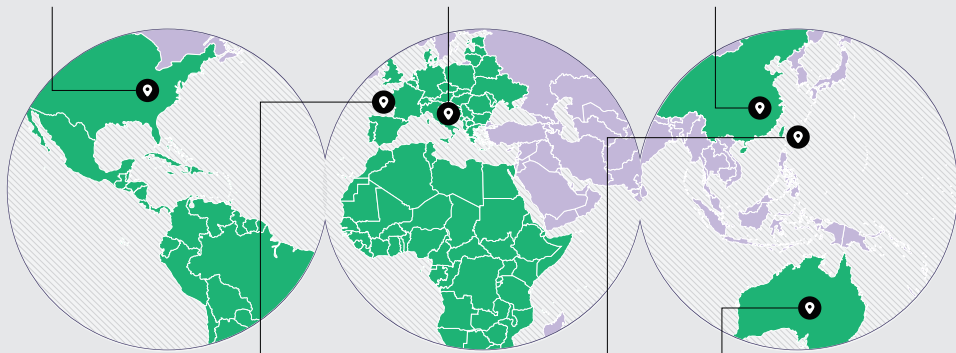
NHOA.TCC+Atlante | Padova

Strategically located at a key highway interchange, offering diverse charging services for both electric passenger vehicles and trucks.

Mainland China

NHOA Energy | Yingde Plant

China's largest energy storage project within the cement industry.



France

NHOA.TCC+Atlante | Oncle Scott Site, Breteville-sur-Odon

Europe's first EnergyArk® 400 integrated charging and energy storage station, combined with a composite restaurant, maintaining stable energy storage system utilization.

Taiwan

NHOA.TCC | Hualien

Established the first co-branded charging and storage station in partnership with Volvo.

Australia

NHOA Energy | Blyth

In collaboration with nearby offshore wind farms, providing 70 MW of baseload renewable power.

~5 GWh

(including those under construction)

28 Countries | as of May 2026

Approximately 300 EnergyArk®

Charge & Storage Integrated Systems | by the end of 2026

With the Iberian Peninsula's renewable energy curtailment rate reaching 11%, CIMPOR Energy positions itself as the "Iberian Balancer," converting surplus green electricity from the Portuguese grid into high-efficiency energy. Integrating technologies across business groups, CIMPOR

Energy's operations span residential, commercial, and utility applications, offering an Energy as a Service (EaaS) model. Since 2025, projects have reached an energy storage capacity of 300 MWh.





Overview

Governance

Carbon Reduction

Energy Transition

Cement and Power Integration:
New Energy Full Value Chain Layout

Battery Energy Storage

Green Energy Supply

Renewable Energy Generation &
Solution

Energy Transmission

Social Aspects of the Energy
Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

7 AFFORDABLE AND
CLEAN ENERGY



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

EnergyArk®

TCC cross-sectorally integrates its Cement and Environmental Protection Businesses to launching the patented EnergyArk® energy storage system, enhancing intrinsic safety through material innovation. Balancing safety with urban application flexibility, the system utilizes energy dispatch mechanisms to adjust power loads in real-time, maintaining supply-demand balance and enhancing grid resilience while possessing both black start and islanding capabilities. Where permitted, it can feature black start, including islanding capabilities. By connecting diverse energy applications like power trading services and fast-charging infrastructure, EnergyArk® alleviates peak load pressure, supports microgrid operations, and mitigates the load challenges between fast charging demand and power capacity.

EnergyArk®'s cabinet structure is built with Ultra-High Performance Concrete (UHPC), a material known for its high plasticity, compressive strength, and durability, with a design life of up to 100 years. Addressing the growing safety concerns of lithium-ion battery energy storage systems, EnergyArk® offers two-hour fire resistance at up to 1,050°C. It integrates a rapid thermal runaway suppression system capable of injecting 9,000 liters of water within five minutes, and features a real-time smart monitoring Energy Management System (EMS). This multi-layered safety design seamlessly encompasses material protection, structural reinforcement, and real-time management.

EnergyArk® Features and Certifications

FIREPROOF & EXTINGUISHING GUARANTEE

- /Fireproof
- /Multi-level anomaly detection
- /Fire suppression assurance
- /Flood barrier

TEMPERATURE & WEATHER RESISTANT

- /Suitable for a wide range of environments
- /Low thermal conductivity Low energy consumption
- /Low carbon emissions, high durability

COMPREHENSIVE PROTECTION

- /24/7 EMS system monitoring
- /24/7 comprehensive after-sales service
- /Taiwan's first energy storage cabinet with product liability insurance, offering coverage up to US\$3 million

FLEXIBILITY & TENACITY

- /Single-cabinet modular design
- /Support for flexible, multi-cabinet modular expansion
- /Suitable for a wide range of applications

Patents

The patent portfolio focuses on four key areas: structural design, safety protection, energy management, and battery modules.

EnergyArk® holds 57 granted and pending patents across 14 markets, including US, Japan, EU, Africa, Mainland China, and Taiwan. Notable patents include US 12,533,540 B2, JP 7743490, and TW I813064.

Certifications

EnergyArk® 1000

Transportation: UN38.3
Enclosure: CNS 12514-1 & -8 (2-Hour Fire-Rated)
System Certification: UL 1642, UL 1973, UL 9540, IEC 62619, IEC 62933-5-2
Fire Safety: UL 9540A
Product Carbon Footprint Verification: ISO 14067

EnergyArk® 400

Transportation: UN38.3
Enclosure: CNS 12514-1 & -8 (2-Hour Fire-Rated)
System Certification: IEC 62619, IEC 63056, IEC 62477-1, IEC 62933-5-2, IEC 61000-6-2, IEC 61000-6-4
Fire Safety: UL 9540A

Reviews/Examinations

EU RoHS and REACH: EnergyArk® 400 has issued its Declaration of Conformity(DoC). EnergyArk® 418 is expected to obtain third-party certification by 2026, ensuring no harm to the environment or human health.

UHPC Cabinets: Atomic absorption spectroscopy tests show heavy metal content in UHPC is below 0.2 ppm. The soluble fibers used in the refractory materials comply with the EU protocol for fiber biopersistence testing, confirming they can be metabolized and eliminated by the human body, posing no health risks.

ACTION SPOTLIGHT

EnergyArk® Energy Management System (EMS), the Core of System Safety, Achieves IEC Cybersecurity Certification



TCC Energy Storage's self-developed EMS has received IEC 62443-3-3 Security Level 2 (SL2) certification for industrial control security from Bureau Veritas, meeting international cybersecurity standards for critical power infrastructure. As the "digital brain" of the energy storage system, the EMS monitors battery operation, manages charging and discharging, and maintains real-time grid connections. In a highly connected environment, it mitigates cyber risks through strict identity verification, access control, data encryption, and incident response. This international certification serves as a key passport for this Taiwan-developed storage application to enter European and global grids.



Overview

Governance

Carbon Reduction

Energy Transition

Cement and Power Integration:
New Energy Full Value Chain Layout

Battery Energy Storage

Green Energy Supply

Renewable Energy Generation &
Solution

Energy Transmission

Social Aspects of the Energy
Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

7 AFFORDABLE AND
CLEAN ENERGY



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

EnergyArk® Energy Storage System Highlights



**Black Start
Technology**

**Seamless power
switching in
under 1 minute**

NHOA.TCC introduces a battery energy storage system (ESS) equipped with black-start capability. During power outages or grid trips, the ESS switches to provide power within one minute, minimizing the impact of power anomalies and enhancing national grid resilience. This is highly suitable for emergency operations in critical facilities like hospitals and industrial parks. The ESS utilizes a grid-forming Power Conversion System (PCS) and EMS to proactively create a microgrid for islanded operation, automatically resynchronizing with the grid upon power restoration.

EnergyArk® leverages Edge AI and smart scheduling to deploy self-developed algorithms directly onto edge controllers within the system. Operating independently of the cloud, it integrates local load forecasting and power demand analysis, enhancing data security and response speed to agilely handle sudden peak demands. By analyzing historical consumption data, the system dynamically calculates optimal charge and discharge times to achieve millisecond-level energy dispatch and reduce operating costs. It also ensures autonomous peak shaving and load balancing during network outages. Concurrently, Cloud AI is introduced to integrate big data, weather forecasting, and electricity pricing, enabling precise demand forecasting and price anticipation. Empirical data shows this system reduces on-site demand charges by 15% to 20%.



**Edge AI Smart
Scheduling**

**Millisecond-Level
Power Cost
Optimization**



**Energy as a
Service (EaaS)**

**Lowering the
Barrier to
Energy Storage
Investment**

NHOA.TCC offers an innovative Energy-as-a-Service (EaaS) model featuring "0 CAPEX" flexibility, directly addressing the high investment barriers and uncertain returns that businesses face when adopting energy storage systems. This model allows companies to optimize electricity costs through off-peak charging and peak discharging without any upfront capital investment. Concurrently, it enhances energy efficiency and prevents over-contract penalties through demand charge management and peak shaving. Future integration with Virtual Power Plants (VPPs) and electricity market trading will further optimize energy storage asset dispatch, increase ancillary service revenue sharing, and help businesses transform conventional energy expenses into flexible energy value.

ACTION SPOTLIGHT

International Renowned Automaker Charging Stations Install EnergyArk® Energy Storage Systems

NHOA.TCC, in direct collaboration with VOLVO, has deployed an integrated EV charging and storage station in Ji'an Township, Hualien County, featuring the EnergyArk® 400 energy storage system.



Occupying just half of a single parking space and requiring no high-voltage feeder line application, the station delivers up to 720 kW of instantaneous high-power charging, effectively reducing contract capacity fees.

Site owners avoid high capital investments in energy storage while cutting peak electricity

consumption and costs, allowing them to offer more favorable charging rates to all EV owners. Future plans include participation in Taipower's electricity trading market, transforming the charging station from a simple refueling point into a Virtual Power Plant (VPP) that actively enhances grid resilience.

Technical Collaboration with Leading Technology Firms

NHOA.TCC combines RiTdisplay's battery module technology, RiTWIN Technology's UPS (Uninterrupted Power Supply) systems, and NHOA.TCC's proprietary EMS to offer one-stop energy storage solutions for high-tech and heavy industry clients.

TCC KEY FACTS

2025

3MW/3.2MWh
installed



Overview

Governance

Carbon Reduction

Energy Transition

Cement and Power Integration:
New Energy Full Value Chain Layout

Battery Energy Storage

Green Energy Supply

Renewable Energy Generation &
Solution

Energy Transmission

Social Aspects of the Energy
Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

3.2 Green Energy Supply

NHOA.TCC Charging Services | Atlante

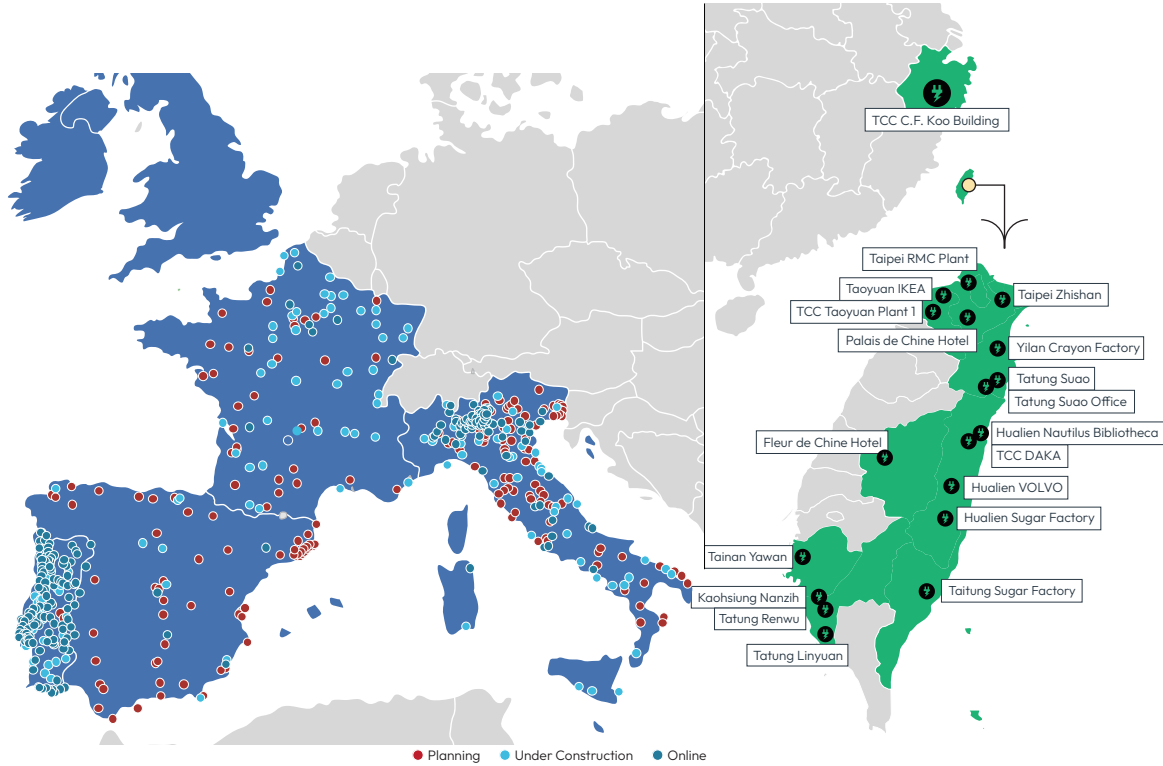
The global transportation sector accounts for approximately one-quarter of global carbon emissions, with land transport contributing 70%. Electrification of transportation is therefore central to achieving net-zero emissions. Europe aims for 30 million electric vehicles and 3 million charging points by 2030. However, by the end of 2025, the actual figures are projected to reach only 8.3 million vehicles and 1.1 million charging points. In 2022, TCC established its European subsidiary, Atlante, to focus on expanding the charging infrastructure required for electric mobility in Southern Europe. In 2025, Atlante further integrated NHOA.TCC's

patented EnergyArk® UHPC Energy Storage Cabinet and its digital energy trading platform, transforming into a technology company with energy trading capabilities.

TCC's international team is promoting integrated charging and storage stations across France, Italy, Portugal, Spain, and Switzerland, assisting in alleviating grid feeder pressure through virtual power plants. This sustainable ecosystem, centered on integrated charging and storage, is poised to become a cornerstone of future smart city development in Europe.

Atlante Partners with European Giants to Launch ChargeLeague, Building Europe's Largest Green Charging Network

In 2025, Atlante co-founded the ChargeLeague alliance (formerly Spark Alliance) with three major European charging service leaders, creating Europe's largest and most extensive EV charging network alliance. This alliance spans 25 European countries, encompassing over 1,700 charging stations and 11,000 high-power charging points, all powered entirely by renewable energy to advance carbon-neutral electric mobility. EV owners can use member apps for cross-border charging and payment, with integrated station data enhancing long-distance travel convenience.



TCC KEY FACTS

Globally
1,000+ charging stations
5,211 charging points

Approximately 300 EnergyArk®
Charge & Storage Integrated Systems
| As of the end of 2026

Atlante
Supported 429 million km of EV travel.

Avoided Emissions 70,063 tCO_{2e}

2025

GRESB Infrastructure Member
No.1 among peers
EU Taxonomy Alignment
– Climate Change Adaptation
EcoVadis Silver Medal

PLATINUM Top 1%

ecovadis

Sustainability Rating
MAY 2025

Atlante

2028

Deploy over 1,000
energy storage systems

2030

35,000 fast and ultra-
fast charging points installed

TARGET





- Overview
- Governance
- Carbon Reduction
- Energy Transition**

Cement and Power Integration:
New Energy Full Value Chain Layout

Battery Energy Storage

Green Energy Supply

Renewable Energy Generation &
Solution

Energy Transmission

Social Aspects of the Energy
Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

7 AFFORDABLE AND
CLEAN ENERGY



Atlante Smile Strategy: Value Creation Through Energy Management

In Europe, large retail outlets with high customer traffic and long dwell time serve as key hubs for EV charging. Some countries even mandate that large parking lots dedicate at least 8% of their spaces to charging points. However, fast charging can cause power load spikes, increasing the risk of power outages. Consequently, businesses prioritize the safety of energy storage equipment.

Featuring exceptional high-temperature resistance, thermal runaway prevention, and material-level fire barriers, the EnergyArk® energy storage system provides Atlante with a decisive advantage in entering the market. This innovation drives a new “Smile Strategy” business model, fostering customer loyalty and accelerating scale growth.

“
*Our core competency
lies not just in charging,
but in energy regulation
services.*

Smile Strategy Centered on EnergyArk®



Charging Services:

The proprietary myAtlante App and GreenGems enhance user engagement and brand loyalty.



Energy Trading:

As an integrated charging and storage station, EnergyArk® leverages the floating electricity prices of the European power market. Combined with a smart Energy Management System (EMS), the energy storage equipment provides grid ancillary services, such as grid frequency regulation, and generates additional revenues through dynamic pricing and electricity trading.



Smile Strategy Explained:

The Atlante “Charging + BESS” (Battery Energy Storage System) configuration deployed at charging sites integrates EnergyArk®’s charging, energy storage, and power dispatch capabilities within a unified system. Featuring front-end charging and back-end energy storage, the system automatically adjusts based on electricity prices and demand: storing power during

low-price periods and releasing it during peak-price periods to maximize energy value for clients. On one end, energy regulation is enabled by energy storage systems for more efficient power management. On the other, user engagement is fostered through memberships and the myAtlante App, building lasting relationships between people and the energy

landscape. As these ends connect, the station evolves from a single facility into a continuously operating system. As this system takes shape, its value extends outward to reveal a naturally emerging and elegant smile curve that defines the “Smile Strategy.”

Note 1: In the French electricity market, the average daily price spread reached €143/MWh, representing a 15% increase compared to 2025.

ACTION SPOTLIGHT

Yilan Crayon Factory Station: Taiwan's First Bidirectional Charging Station

NHOA.TCC Participates in Taipower's Load Testing Program

The NHOA.TCC Crayon Factory charging station in Yilan joined Taipower's sReg

(supplementing Regulation) ancillary service in April 2025, becoming Taiwan's first EV charging station with reverse power flow capabilities to execute aggregation trading.

In 2025, the station achieved a 100% service execution rate, reliably fulfilling all dispatch commands. Additionally, six other NHOA.TCC stations supported the grid during periods of

high renewable energy penetration by increasing load, effectively mitigating the ramping pressure on traditional power units during evening hours.

According to official test reports, NHOA.TCC's charging stations delivered the most outstanding performance among all participating vendors.



Overview

Governance

Carbon Reduction

Energy Transition

Cement and Power Integration:
New Energy Full Value Chain Layout

Battery Energy Storage

Green Energy Supply

Renewable Energy Generation &
Solution

Energy Transmission

Social Aspects of the Energy
Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

3.3 Renewable Energy Generation & Solution

TCC Green Energy Corporation | Energy Helper TCC Corporation

According to the latest statistics from the energy think tank Ember, renewable energy's share is projected to reach 33.8% in 2025, surpassing coal for the first time in a century. It is estimated to reach 2.6 times the 2022 level by 2030 (9,529 GW), though still falling short of the COP28 target of tripling global renewable energy installed capacity (11,450 GW).

TCC Green Energy Corporation, established in 2018, is Taiwan's sole comprehensive renewable energy company actively investing in solar, wind, geothermal, and marine energy. Starting with the grid connection of the Changbin wind and solar project, the company has expanded to develop hybrid renewable energy sites, including forward-looking energy research such as the Vakangan geothermal project and the Chiayi aquavoltaics project. Utilizing intelligent operation and maintenance integrated with big data, 100% of site equipment transmits data remotely and automatically. AI analyzes

historical generation and meteorological data for real-time anomaly detection, while automatic alerts assist on-site personnel in taking timely action, thereby enhancing operational efficiency.

TCC has also integrated its proprietary renewable energy resources, establishing Energy Helper TCC Corporation (Energy Helper) in 2022 to provide a green electricity trading platform. It offers one-stop services including green electricity transfer, renewable energy certificate (REC) management, online green electricity consulting, and carbon management.

These services assist enterprises in optimizing green electricity efficiency and reducing carbon costs, while ensuring a stable power supply to support small and medium-sized enterprises (SMEs) in achieving RE100, ultimately accelerating the energy transition and Sustainable Development Goals (SDGs).



TCC Green Energy logo : Composed of three Greek letter symbols Σ Sigma + Θ Theta + Δ Delta, representing the sum of diverse green electricity development, utilizing natural resources for energy creation; drawing energy from nature; and transforming fossil fuels into renewable energy.

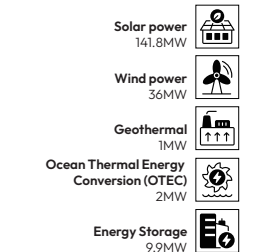


Changbin Wind-Solar Power Plant

The solar power section has created a Nature-based Solution (NbS) through the "eco-friendly grazing" model.

Chiayi Aquavoltaics Power Site

As Taiwan's first aquavoltaics project, this site integrates local revitalization with sustainable tourism. Furthermore, 80% of partnered farmers have obtained traceability certification. For more information, please refer to the [Just Transition Initiatives](#).



Vakangan Geothermal Power Site

The site is expected to fully connect all units to the grid by 2026. For details, please see [CH5.4](#).

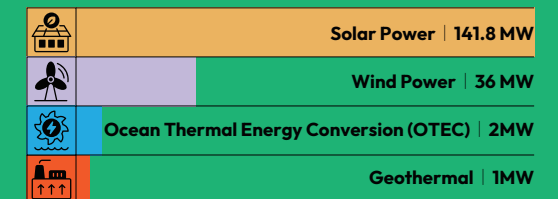
TCC KEY FACTS

2021-2025

21 energy project sites operating or under construction in total

652 million kWh of green electricity generated Equivalent to

585,013 tCO_{2e} reduction





Overview

Governance

Carbon Reduction

Energy Transition

Cement and Power Integration:
New Energy Full Value Chain Layout

Battery Energy Storage

Green Energy Supply

Renewable Energy Generation &
Solution

Energy Transmission

Social Aspects of the Energy
Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

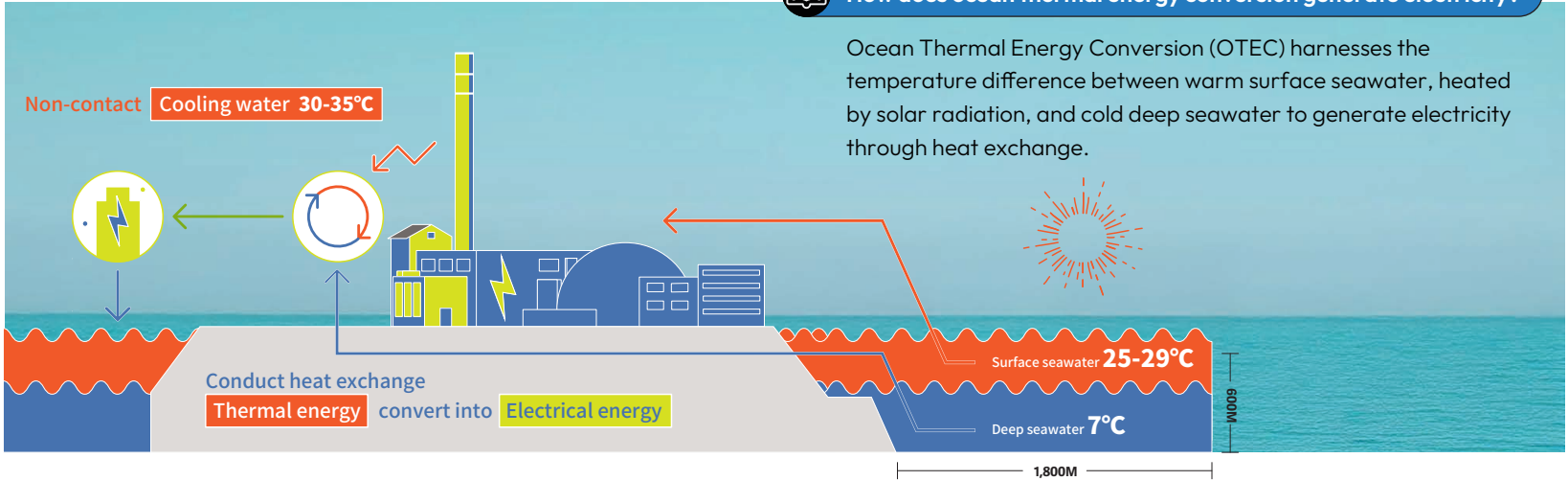


2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

World's First MW-Scale Ocean Thermal Energy Conversion Power Plant

Ocean energy's stability and 24/7 operation make it a viable baseload power option. The key is accessing deep seawater. Off Taiwan's east coast, water depth reaches 600 meters just 1.6 km offshore, ideal for deep seawater intake. TCC's Ho-Ping Power Plant, part of a three-in-one industrial park in Hualien, is well-positioned to integrate Ocean Thermal Energy Conversion (OTEC). The plant's cooling water, which does not contact the process, can be reused for heat exchange with deep seawater to drive turbines. This cooling water, being 5-6°C warmer than surface seawater, enhances generation efficiency.

Ho-Ping Power Company completed the underwater cultural heritage review in 2024 and will enter the Environmental Impact Assessment review process by Ministry of Environment in 2025. Upon completion, it will be Taiwan's first and the world's first MW-scale commercial Ocean Thermal Energy Conversion plant. The first phase is expected to have an installed capacity of 1-2 MW, providing a stable daily supply of approximately 24,000 kWh, sufficient for about 2,000 households. The goal is grid connection and commercial operation by the end of 2029.



How does ocean thermal energy conversion generate electricity?

Ocean Thermal Energy Conversion (OTEC) harnesses the temperature difference between warm surface seawater, heated by solar radiation, and cold deep seawater to generate electricity through heat exchange.

Deep Ocean Water Circulation Aquaculture and Sustainable Applications

According to the "Environmental Assessment Technology for Ocean Thermal Energy Conversion" report published by Taipower in 2012, the deep seawater off Taiwan's east coast has a dissolved salt concentration over 15 times higher than surface water. Rich in nutrients, it holds immense potential for aquaculture, pharmaceuticals, and biotechnology. Ho-Ping Power Company established a pilot ocean ranch in 2024, drawing water from Hoping EcoPort into an aquaculture system to cultivate diverse species, including sea grapes, barred knifejaw, grass shrimp, and local fish species. The company completed its first harvest of grass shrimp and sea grapes in Q4 2025.

This initiative combines sustainability with health promotion, sharing the farming outcomes and

process with employees through low-calorie, high-protein cooking and tasting sessions to enhance their understanding of deep seawater applications and eco-friendly aquaculture. Ho-Ping Power Company has introduced recirculating microfiltration equipment to reduce

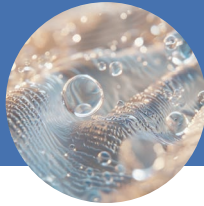
turbidity and stabilize water quality. A continuous water quality monitoring system is planned to further refine the eco-friendly aquaculture model and promote the diverse utilization of deep seawater resources.

Future Co-products & Associated Industries of Ho-Ping Power Plant Deep Sea Water



Mineral-Rich

Premium Deep Sea Drinking Water



Micro-Molecular Structure

Cosmeceuticals, Skincare, and Wellness SPA Tourism



Nutrient-Dense

High-Value Aquaculture
e.g., White Shrimp, Giant Grouper



Stable Low-Temperature

Low-Carbon Agriculture
Cultivating Alpine Fruits & Vegetables on Lowland



Overview

Governance

Carbon Reduction

Energy Transition

Cement and Power Integration:
New Energy Full Value Chain Layout

Battery Energy Storage

Green Energy Supply

Renewable Energy Generation &
Solution

Energy Transmission

Social Aspects of the Energy
Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

7

AFFORDABLE AND
CLEAN ENERGY



Energy Helper TCC Corporation

Supporting users with a contract capacity of 5,000 kW or above, clients with RE targets, independent power producers, or users with self-generation facilities.

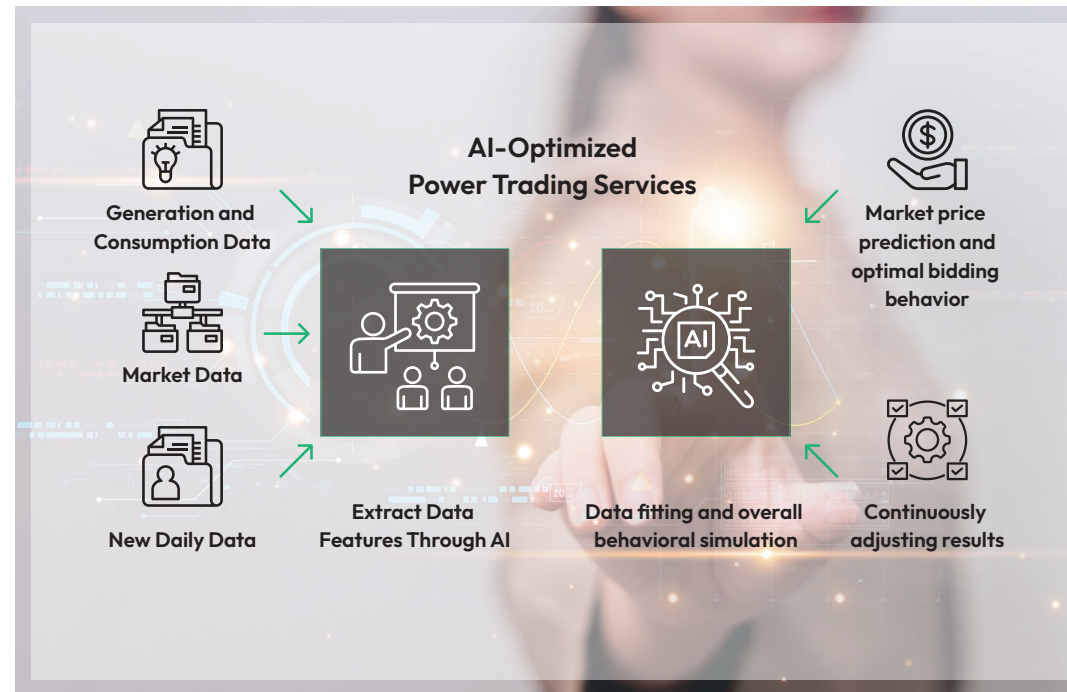
Energy Helper provides large electricity consumers with integrated energy services spanning "renewable power supply - energy storage dispatch - and carbon management," creating a streamlined green energy trading experience akin to a convenience store while allowing power generators to easily list their supplies. The renewable energy trading platform integrates diverse resources, including wind, solar, geothermal, and marine energy, providing real-time supply and demand matching to enhance transaction transparency and efficiency. This offers enterprises more flexible and diverse renewable power procurement options, building a comprehensive ESG green energy integration solution.

Through an AI-driven aggregation platform and cloud-based Energy Management System (EMS), the platform analyzes market price trends in real time to provide clients with optimized renewable power procurement configurations. Simultaneously, it leverages idle power resources to participate in Taipower's electricity trading as a proxy, stabilizing electricity cost structures and creating added value. The "Online Green Power Consultant" and big data matching mechanism integrate diverse renewable energy sources instantly to boost

procurement efficiency. Moving forward, the platform will further integrate green power and carbon management services through mid-to-long-term Power Purchase Agreements (PPAs), assisting clients in reducing electricity

costs, meeting regulatory requirements, lowering carbon fee burdens, and advancing toward RE100.

Furthermore, the AI aggregation platform integrates proprietary and client-owned energy storage sites to participate in all Taipower electricity trading programs, utilizing the advanced EMS to optimize bidding strategies and resource dispatch to balance grid stability and economic efficiency.



TCC KEY FACTS

2023-2025

Over
140 million kWh

of renewable power
wheeled cumulatively

2025

Achieved a 55%

YoY growth rate in renewable power
wheeling volume



The clientele comprises 23 renowned domestic and international enterprises across various sectors, including computer and electronic products, electronic components, IT services, semiconductor equipment, medical devices, finance, hospitality, as well as other manufacturing and chemical industries.

2025

Cumulative
transaction
capacity
reached 253.9 MW

E-dReg market
share reached

20%

with a participating capacity of 195 MW





Overview

Governance

Carbon Reduction

Energy Transition

Cement and Power Integration:
New Energy Full Value Chain Layout

Battery Energy Storage

Green Energy Supply

Renewable Energy Generation &
Solution

Energy Transmission

Social Aspects of the Energy
Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs



3.4

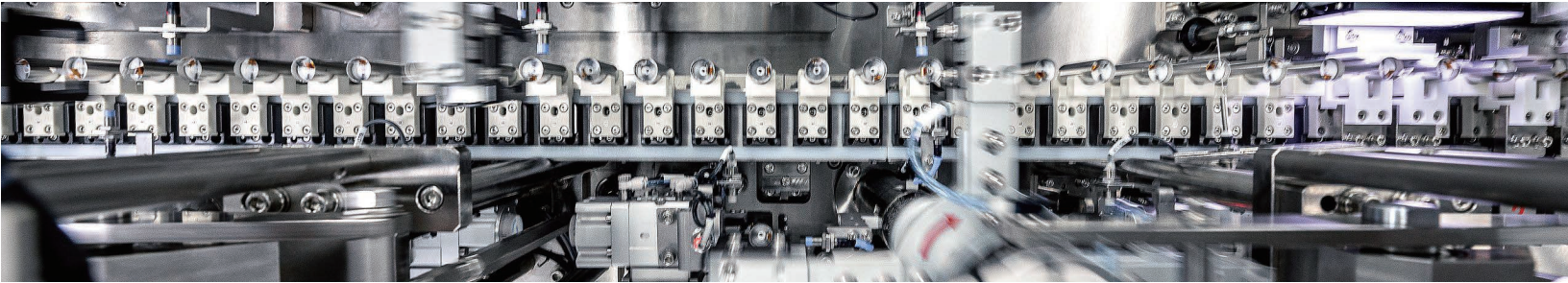
Energy Transmission

Molice ESG Report

E-ONE MOLI ENERGY CORPORATION (Molice) is a global leader in high-power cylindrical lithium-ion batteries, specializing in "Next-Generation High-Performance Ternary Lithium-Ion Batteries." Driven by innovation, its high-power series supports drones, Electric Vertical Takeoff and Landing aircraft (eVTOL), aerospace, heavy-duty tools, and BBU, providing robust support for industrial low-carbon transformation.

Given that geopolitical factors increasingly influence client procurement decisions, strengthening supply chain resilience is essential for high-end cell manufacturers. In 2025, Molice swiftly relocated its ternary production back to E One Moli Corporation to minimize client supply disruptions, and announced a new Malaysia site to manufacture mature products through overseas contract manufacturers. This model rapidly restored capacity, mitigated single-site risks, offered value-added services, and enhanced competitiveness as a versatile supplier.

Following the 2025 fire at Molie Quantum Energy Corporation, the company activated emergency responses for control and investigation, reviewing safety management to enhance risk prevention. Please see [Chapter Q](#) (Risk Governance Enhancing Operational Resilience), [CH 1.3](#), and the [Molice ESG Report](#).



Molice Products and Applications

	AI Data Centers and Battery Backup Units (BBUs)	Energy Storage Systems	High-Performance Electric Mobility & Aerospace
Application Fields	Generative AI Systems, Hyperscale Data Centers, Heavy-duty Tools, and Backup Battery Units (BBUs)	AI Computing Environments, High-voltage DC Energy Storage Systems, and Industrial-grade Energy Storage Applications	High-performance Electric Racing Cars, eVTOLs, Electric Aviation, and Aerospace Vehicles
Technical Support	■ Incorporating Molice's Ultra-high Power S-series Cells ■ Mass-producing the INR-18650-P22S ■ Featuring patented flame-retardant technology in INR-21700-P50S and INR-18650-P30S ■ Fully complying with the latest OCP rack power specifications	■ Adopting high-power, high-stability cell solutions ■ Addressing the demands of high-voltage DC architectures and prolonged high-load operation	■ Delivering high-performance battery cell solutions that offer both high power output and extreme lightweighting ■ Supports high instantaneous output and demanding dynamic operating conditions
Technological Achievements	■ Supporting the continuous computing needs of generative AI and data centers ■ Providing excellent thermal runaway protection and high-temperature resistance in high-load environments ■ Enhancing BBU system stability and security under high-load conditions	■ Improving space utilization of energy storage systems ■ Reducing the overall carbon footprint ■ Achieving substantial breakthroughs in safety and power stability	■ Setting a new international track record with the McMurtry Spéirling PURE electric race car, achieving the world record as the first car capable of driving completely upside down ■ Supporting Vertical Aerospace's hybrid-electric vertical takeoff and landing (eVTOL) aircraft with a range of 1,000 miles ■ Supported Archer Aviation in reaching a 10,000-foot flight altitude milestone
Future Deployment	■ Collaborating with North American clients to develop next-generation BBU and high-voltage DC energy storage solutions. ■ Enhancing data center energy efficiency and system resilience in high-density computing environments	■ Developing next-generation energy storage systems, focusing on AI computing and data center needs ■ Meeting the high-energy demands of next-generation data centers	■ Expanding applications in electric aviation and advanced electric vehicles ■ Enhancing verification of battery propulsion stability under high-altitude, high-pressure, and extreme environmental conditions



Overview

Governance

Carbon Reduction

Energy Transition

Cement and Power Integration:
New Energy Full Value Chain Layout

Battery Energy Storage

Green Energy Supply

Renewable Energy Generation &
Solution

Energy Transmission

Social Aspects of the Energy
Transition

Employee

Nature

Social Inclusion

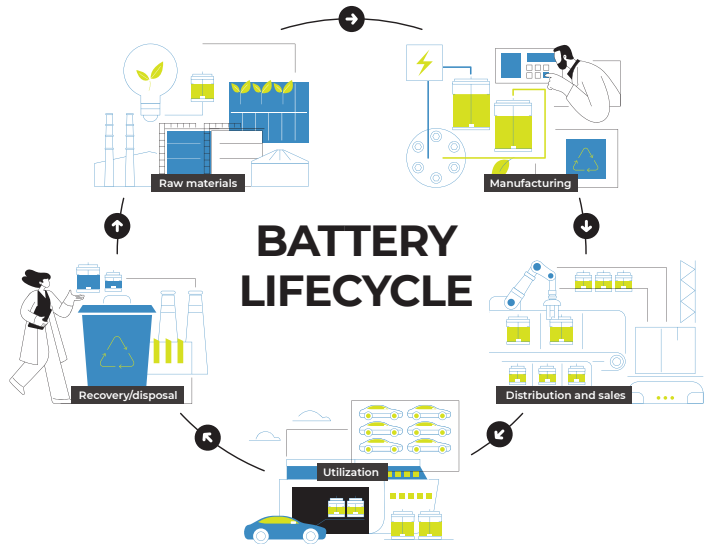
Appendix

Alignment with SDGs



Battery Lifecycle Management

Molice promotes product life cycle management and sustainability strategy, covering product design, process optimization, and recycling. Molice builds local battery recycling systems to fully practice green manufacturing and resource circulation for sustainable operations.



Implementing EPD and ISO 14067

Molice implemented ISO 14067 for product carbon footprint verification since 2023. To meet product lifecycle disclosure requirements starting in 2025, Molice will introduce Environmental Product Declaration (EPD), prioritizing P22S, P45B, and P50B at the Southern Taiwan Science Park to align with EU market regulations, international brand client compliance, and procurement standards.

Progress of ISO 14067 Implementation:

- P42A: Certification obtained; P22S: Inventory process in progress
- P45B/P50B: Inventory processes are underway, with product carbon footprints to be obtained via EPDs

Response to EU Battery Regulation

The EU Battery Regulation mandates that battery products present data through a Digital Product Passport (DPP). The battery passport is the first practical application of the DPP initiative and a prerequisite for battery products entering the European market. Molice is prioritizing the P22S battery for initial implementation, aiming for compliance disclosure by February 2027.

Increasing Recycled Material Proportion

Molice collaborates and engages with suppliers, prioritizing the procurement of recycled materials to steadily increase the recycling rate of all critical materials.

ACTION SPOTLIGHT

Molice Achieves RBA Silver Recognition

E-One Moli Corporation has achieved RBA Silver recognition in 2026. Third-party site audits verified the full implementation of the five core areas of the RBA Code of Conduct: Labor, Health and Safety, Environment, Ethics, and Management Systems, aligning seamlessly with international standards.



TCC KEY FACTS

75%

Cathode scrap recovery rate via chemical extraction

TARGET



Carbon footprint per battery cell
Baseline year: 2023

20% reduction by 2030

Molice Carries Out Conflict Minerals Management

Molice's raw material supply chain complies with international due diligence regulations and responsible sourcing standards.

Molice follows OECD guidelines to manage conflict minerals, avoiding sources linked to illegal mining or armed conflict financing. Internal controls and management systems are strengthened to effectively manage conflict mineral risks. Molice conducts regular due diligence, such as Conflict Minerals Reporting Templates (CMRT) and Extended Minerals Reporting Templates (EMRT), and requires signed declarations from both new and existing suppliers, ensuring regulatory and client compliance while building a responsible and traceable supply chain management system.

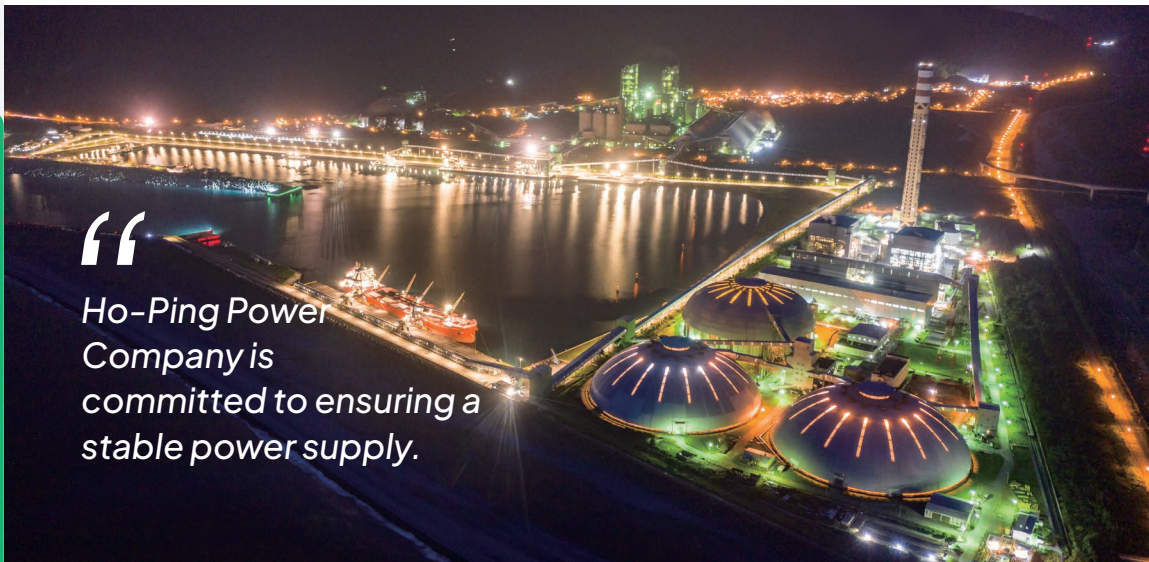


3.5 Social Aspects of the Energy Transition

Ho-Ping Power Company

According to the Ministry of Economic Affairs' "National Electricity Supply and Demand Report," Ho-Ping Power Plant will remain an irreplaceable major power source for the northern and eastern grids until 2033, supplying nearly 4% of Taiwan's total electricity, based on the national plan for thermal power unit transition and decommissioning. Through multiple exchanges with Taipower, TCC and Ho-Ping Power Company have gained a deep understanding of the difficulties and practical progress of energy transition in resource-limited Taiwan. TCC is committed to the net-zero transition and is the enterprise with the most diverse renewable energy projects in Taiwan currently. However, TCC also has a corporate social responsibility to safeguard the electricity

rights of 95% of Yilan residents and 20% of New Taipei City residents. Therefore, following the IEA's Carbon Reduction guidelines and in coordination with Taipower's contract renewal and grid stability needs, Ho-Ping Power Plant plans to operate its coal-fired units until their design life of 2040 at the latest, with unit closure no later than 2040. Ho-Ping Power Plant is simultaneously launching a just transition plan to understand the challenges faced by employees and related stakeholders. Ho-Ping Power Company has initiated an Ocean Thermal Energy Conversion project by the end of 2024, which is also a crucial part of its future transition plan. Please refer to [CH 3.3](#).



“
Ho-Ping Power
Company is
committed to ensuring a
stable power supply.”

ACTION SPOTLIGHT

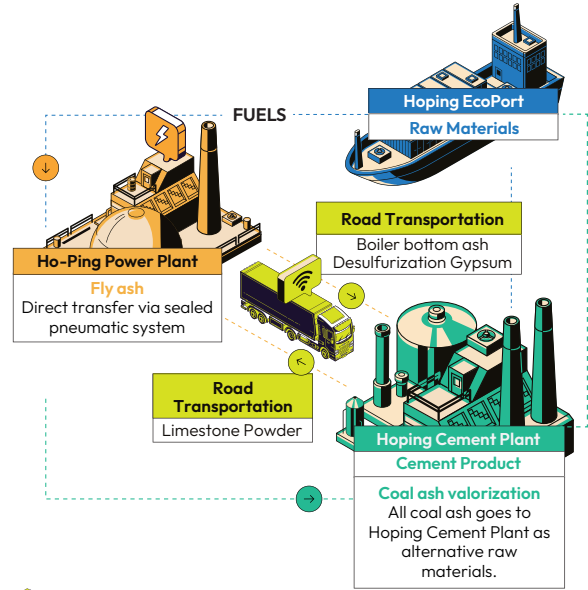
The Only Ash-Lagoo-Free Power Plant In The World

From its inception, the Ho-Ping Power Plant prioritized zero waste and resource recycling. Unlike traditional coal-fired power plants that require ash lagoo for coal ash disposal, the Ho-Ping Power Plant is the world's only coal-fired power plant without one. It partners with the adjacent Hoping Cement Plant and Hoping EcoPort to create a closed-loop material cycle.

SOx Reduction: Hoping Cement Plant provides 60,000 tons of limestone powder annually as absorbent, reducing SOx emissions by 95%.



Electric Truck Transport: Deploying 3 electric trucks in Sept. 2025 for boiler bottom ash, limestone powder, and desulfurized gypsum, achieving 11.5 tons of carbon reduction by Dec. 2025.



Energy Transition Plan

Upgrading Coal-fired Unit to Subcritical Unit

A feasibility study will commence in Q4 2024, with the overall assessment to be completed by Q3 2025. This initiative is projected to enhance unit efficiency by 6.46%, leading to an annual reduction in coal consumption equivalent to approximately 95,700 tons per unit, corresponding to a carbon reduction of 270,700 tons.

Biomass Fuel Feasibility Study

Ho-Ping Power Company initiated a feasibility study on co-firing wood-based fuels and Solid

Recovered Fuel(SRF) in 2024. However, direct co-firing bottom ash cannot be reused in cement manufacturing. To balance carbon reduction and recycling, the second phase shifted to gasification, converting fuels into syngas for boilers to replace an estimated 10% of coal.

Completed in Q3 2025, the study showed a 40% wood chip and 60% SRF mix achieves a 7.9% maximum substitution rate, reducing 300,000 tons of carbon annually. TCC will continue evaluating the fuel supply chain and overall retrofitting feasibility.



Overview

Governance

Carbon Reduction

Energy Transition

Cement and Power Integration:
New Energy Full Value Chain Layout

Battery Energy Storage

Green Energy Supply

Renewable Energy Generation
& Solution

Energy Transmission

Social Aspects of the Energy
Transition

Employee

Nature

Social Inclusion

Appendix

Alignment with SDGs

7 AFFORDABLE AND
CLEAN ENERGY



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

Comprehensive Environmental Management

Coal-fired power plants are often associated with air pollution concerns. From the outset, Ho-Ping Power Company adopted environmental management standards exceeding regulatory requirements, establishing an environmental management system based on ISO 14001. Ho-Ping Power Company continuously optimizes its air pollution control measures. Since 2022, Ho-Ping Power upgraded its AQCS, GGH, AIG, and denitrification systems. Following ISO 50001, the company audited energy consumption nodes and successfully overhauled the generator's fan system, achieving a 40% reduction in electricity use. In 2025, Ho-Ping Power initiated the construction of a PI big data database system to monitor plant data, review energy-saving efficiency, and visualize data for rapid operational oversight.

Ho-Ping Power Company actively promotes self-generation and consumption of renewable energy by fully utilizing plant rooftops for solar power systems. Additionally, the company plans to introduce a 576 kW in-pipe micro-hydro system. The seawater used for generator cooling does not contact the process, allowing the plant to generate power using the flow and potential energy difference during cooling water discharge. Construction is scheduled to begin in Q2 2026, with grid connection to the plant's high-voltage panel in 2028 Q1, and an estimated annual generation of 3.9 million kWh.

ACTION SPOTLIGHT

Innovative Nanofiltration Technology for Wastewater Treatment and Reuse

Ho-Ping Power Company independently developed wastewater reuse technologies and collaborated with National Ilan University on wastewater resource research. In 2024, the patented "Nanofiltration and Reverse Osmosis Membrane System" (Patent No. I832462) was commissioned. This system utilizes membrane technology to recover process wastewater and separate minerals, reintroducing recovered calcium and magnesium ions into the desulfurization system, thereby reducing limestone powder consumption.

Nanofiltration technology has been implemented in the demineralized water plant, increasing the water recycling rate, reducing overall wastewater generation, and minimizing chemical usage. Ho-Ping Power Company plans to further expand the application of this technology to the wastewater treatment plant, expecting to increase the overall water recycling rate to 30%.



TCC KEY FACTS



Air pollutant
emissions

-38%

Base Year 2016
 $SO_x \leq 0.208 \text{ kg/MWh}$
 $NO_x \leq 0.229 \text{ kg/MWh}$
Total Suspended Particulates
(TSP) $\leq 0.014 \text{ kg/MWh}$



Rainwater
Recovery
77,074 m³

100%

re-utilization rate
Self-developed
nanofiltration membrane
water recovery of 108,348 m³



Waste
Management

General Industrial
Waste Recycling Rate

90.33%

(excluding coal ash and catalysts)

Ho-Ping Power Company
was honored with

🏆 **Top-performing companies
in the Ministry of Environment's 2025
"Clean Water Sustainability Award"**

🏆 **Air Quality Purification Area Special
Contribution Award of Hualien County
in 2025**



Employee

4.1	Climate Action Talent	133
4.2	Employee Development	135
4.3	Employee Remuneration and Benefits	140
4.4	Occupational Health and Safety	145
4.5	Human Rights Protection	151



TCC Group Holdings Hot-Air Balloon

Built upon the Pantheon, the world's earliest concrete structure, and composed of TCC cement packaging from different eras and regions, it gathers cross-disciplinary talent from across TCC's global businesses and symbolizes the positive energy of diverse wisdom rising together.



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Climate Action Talent

Employee Development

Employee Remuneration and Benefits

Occupational Health and Safety

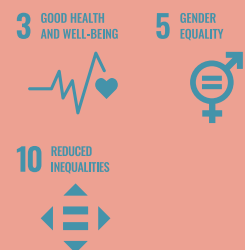
Human Rights Protection

Nature

Social Inclusion

Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

4.1 Climate Action Talent

“ We need talent who can see the future and are willing to solve problems. Finding a job is not difficult for most people. But more importantly—are you choosing a job, or a future you want to participate in? ”

— Chairman Nelson An-ping Chang

Nemo Talent Program Seeking π -Shaped Talent with Pioneering Characters

McKinsey & Company's "Future Talent Trend Study" emphasizes that, unlike T-shaped talent with a single specialty, π -shaped talent requires dual expertise as two supporting pillars, connecting both with "cross-domain thinking" to deconstruct problems in complex situations. TCC targets launching the Nemo Talent Program in 2026 to seek leaders with dual cores

of critical thinking and action. Adhering to the principles of diversity and inclusion, TCC recruits talent from cross-domain backgrounds—including engineering, energy, data, and management—through campus engagement such as recruitment events and industry-academia collaborations to build a competitive team.

Calling "Captain Nemo"

"Nemo", from French author Jules Verne's classic science fiction novel *Twenty Thousand Leagues Under the Sea*, captaining Nautilus to iconically explore the deep ocean in literary history. He symbolizes the courage to explore the unknown and technological innovation, echoing the enterprise's talent cultivation needs for cross-domain capabilities and forward-looking vision to achieve continuous breakthroughs in a changing environment.



In the age of AI automation, thought and cross-domain integration are the true measures of talent.

While many companies use AI to filter candidates and label talent, TCC prioritizes future insights and core values. Evolving from the 2025 "Digital Intelligence Navigators (DIN)" project, the upgraded "Nemo Talent Program" targets new partners with cross-domain integration, independent thinking, and fluent cross-border communication skills to build a globally mobile talent pipeline. Selected candidates will participate in global transformation projects, receiving direct guidance from senior executives of various business groups to navigate a highly volatile global market.

Explore the 7 major projects below:

- + Digital Intelligence Navigator (DIN)
- + EnergyArk Project
- + Portland Resource Recycle Initiative
- + Low-Carbon Materials Innovation Project
- + New-Civilization Construction Project
- + Energy Acceleration Initiative (Europe)
- + AI-Empowerment Project

TCC KEY FACTS

Share of talents with Skills for Green Jobs **73%**

| Taiwan and Mainland China
Note 1: Personnel meeting the ILO definition, holding professional certifications, or verified by the Institute of NextGen Sustainability (formerly TCC Carbon Academy).

ACTION SPOTLIGHT

Headquarters Recruitment

Career Open House

TCC held the 2026 Headquarters Recruitment Information Session, gathering hundreds of young talents from diverse backgrounds and nationalities. The chairman and four senior executives responsible for driving the TCC's AI transformation delivered keynote speeches and shared career experiences.

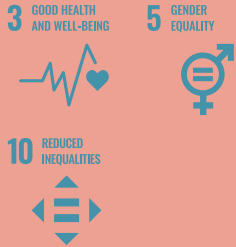
They introduced how to integrate AI and drone technology with basic industries, covering practical applications in Cement and Environmental Protection Business and Charging and Storage Business. The event also provided resume check-ups and networking sessions with the management team, breaking away from traditional one-way presentations. By interacting closely at the industrial site, TCC aims to convey its values and career development paths to potential talents.





- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Climate Action Talent
 - Employee Development
 - Employee Remuneration and Benefits
 - Occupational Health and Safety
 - Human Rights Protection
- Nature
- Social Inclusion
- Appendix

Alignment with SDGs



Deep Campus Engagement

TCC Summer Internship Program

Summer interns engage in corporate practice, thematic courses, and green energy/circular economy site visits to fully grasp industry operations and transformation. Centered on "AI × Sustainability," the program fosters cross-disciplinary thinking and practical application. In 2026, Taiwan operations will expand to include international students for the first time, partnering with Princeton in Asia to strengthen global, cross-cultural talent connections.

Material Sustainability Industry Program and Internship Project

Ho-Ping Power Company collaborated with NTOU, NIU, and NDHU to cultivate applied electromechanical talent by integrating practical power plant environments. Participating students also received salaries and retention bonuses exceeding regulatory requirements. As of March 2026, the retention rate was 11.7%.

Industry-Academia Collaboration on Battery Technology

Molicel collaborated with NTUST and NYCU on multiple projects focusing on high-performance lithium battery technology research. These projects covered key aspects including battery materials, structural design, and safety, deepening students' understanding of industry technologies and application scenarios.

Interdisciplinary Career Immersion – Mentorship Program, NTU

TCC offers project-based corporate practice in human resources, sales, and smart manufacturing, allowing students from diverse backgrounds to gain cross-disciplinary experience.

Hualien Szu Wei Senior High School "Program for Electrical Engineering Technicians"

TCC partners with NDHU on a special program offering local students test-free admission, encouraging professional certifications, and providing priority for future roles within TCC. As of 2025, 26 students have enrolled.

Xingxueshu Mentorship Program, NCHU

Serving as a corporate mentor, TCC guides students to understand corporate carbon reduction and sustainability strategies while offering firsthand experience in new energy applications.

Scholarships

- Dean's Award for Graduate Students, College of Engineering, NTU
- Master's and Ph.D. Thesis Exhibition, Department of Chemical Engineering, NTU
- TCC Summer Internship Grant

ACTION
SPOTLIGHT

CIMPOR Academy NextGen

The CIMPOR Academy talent development program targets fresh graduates from all disciplines, offering a 12-month program that integrates theory, practice, mentorship, and cross-departmental collaboration, achieving a retention rate of over 75% in recent years. In 2026, CIMPOR will launch the NextGen Program for bilingual (English/Portuguese) youth under 30, providing professional training in engineering or operations management, and fostering cross-border and cross-cultural experience through collaboration with CIMPOR's international team. Similarly, NHOA Energy's

Graduate Program recruits top energy and electrical engineering graduates to cultivate future leaders. Over a 24-month period, trainees rotate through the Milan headquarters and key departments—including engineering, business development, and technical sales—to gain versatile skills and diverse experience. They also mentor the next cohort, sustaining the talent pipeline.



OYAK Cement Named Finalist for 2025 PERYÖN Value for People Awards

OYAK Cement's Adana plant in Türkiye launched CEMSTART, a program targeting recent engineering graduates. Under the mentorship of senior engineers, participants undergo a 6-month rotation and hands-on project execution, deepening young talent's expertise while strengthening the industry's long-term competitiveness. The program achieved a 94% retention rate and was a finalist for "Employer Branding for Talent Acquisition" at the 2025 PERYÖN Value of People Awards.



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Climate Action Talent

Employee Development

Employee Remuneration and Benefits

Occupational Health and Safety

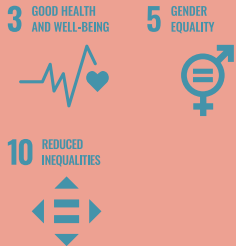
Human Rights Protection

Nature

Social Inclusion

Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS SUSTAINABILITY REPORT

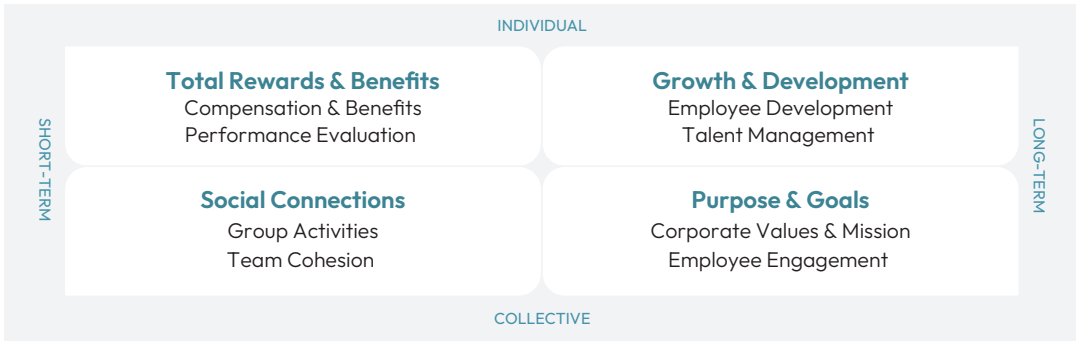
4.2 Employee Development

Championing the Employee Value Proposition Building an Inclusive, Cross-Domain, and Multi-Generational Workplace

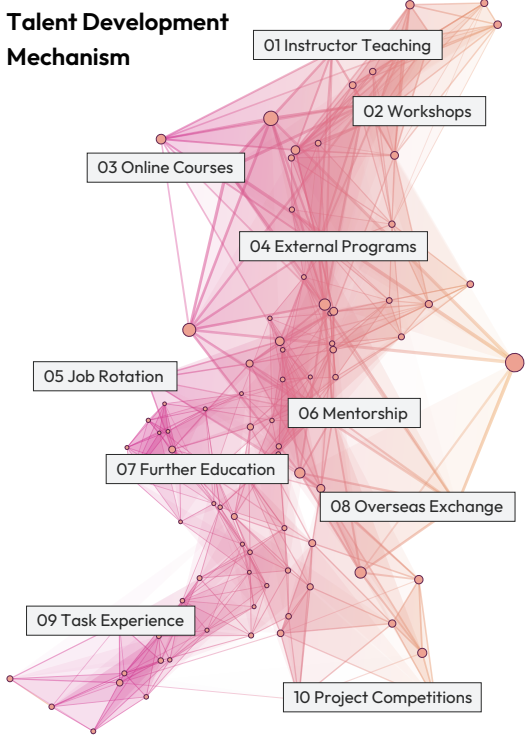
The World Economic Forum's "Future of Jobs Report 2023-2027" indicates that the world is in a period of major skills transition. Cognitive flexibility and the ability to integrate and solve complex problems have become core competencies for future talent. Employees need to develop cross-domain skills such as digital, analytical, and creative abilities through training to face changes in competency requirements caused by AI and technology. Meanwhile, Taiwan will enter a "super-aged society" in 2025, and Europe also faces the brain drain of higher education talent. The workplace simultaneously bears multiple pressures of generational shift, knowledge transfer, and talent transformation. TCC views talent as the driving force for corporate growth, focusing globally on two main

aspects: "cross-domain development" and "cross-generational inclusion," to create a diverse, friendly, and people-centric workplace environment. TCC provides a systematic talent development mechanism to help employees deepen their professional capabilities, promoting talent development and enhancing organizational resilience. TCC targets the further introduction of Employee Value Proposition (EVP) in 2026 to enhance the connection between talent development and corporate vision, aiming to support employee growth while guiding employees to understand their work, the corporate mission, and the value and impact created for society.

Employee Value Proposition (EVP)



Diverse Talent Development Mechanism



TCC Talent Development and Training System: Covering All Supervisors and Employees

Sustainability Program 	- Newcomer Training - Sustainable Learning Action Program - Institute of NextGen Sustainability (formerly Carbon Academy)
Management Program 	- Management Program for Mid-Level and New Managers - Leadership Impact Academy - Information Security Awareness and Management
Cross-Domain Program 	- Generative AI Application Practices - Thinking Program - Professional Image Building and Workplace Etiquette - Global Economic and Investment Trend Observation - Effective Time Management
Language Program 	1-on-1 Courses - Practical Daily Conversation - Writing Intensive Training - Current Affairs Reading - Advanced Business - Online Courses
Development Program 	- Leadership — Development Program - Learning Ability — TCC Lyceum - Life Skills — Health Care and Financial Management



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Climate Action Talent

Employee Development

Employee Remuneration and Benefits

Occupational Health and Safety

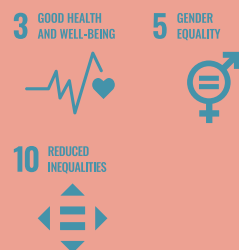
Human Rights Protection

Nature

Social Inclusion

Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

Cross-Domain Talent Development — Sustainable Learning Program

Facing the challenges in global expansion and industrial transformation, in 2025, TCC's training focus is "internationalization" and "AI application" in Taiwan and Mainland China. CIMPOR and OYAK Cement plan training content based on diverse and balanced development. Furthermore, through flexible career paths and internal mobility mechanisms, combined with open vacancy matching and skills training, TCC promotes talent mobility and cross-domain knowledge sharing.

TCC has established online learning platforms across its global sites, including "TCC Lyceum," "CIMLearning," and "OYAK Çimento Academy", providing diverse learning aspects such as general knowledge and basic literacy (newcomer training, group regulations, legal compliance, information security, and language skills), professional competencies and technological transformation (sustainability lectures, energy, AI, etc.), and management and leadership development (management skills). The platforms are continuously optimized annually based on needs to enrich learning resources, creating a diverse and autonomous learning environment free from time and space constraints.



The global Cement and Environmental Protection Business annual meeting focuses on the dual axes of "low-carbon transition × digital intelligence," promoting the exchange and integration of overseas practical experiences.

MITeI Industry Liaison Program

In April 2025, TCC invited professors and scholars from the MIT Energy Initiative (MITeI) to the TCC's headquarter to exchange views with senior executives of various business group under the theme "Towards a greener future."

The discussion focused on the impact of global policies and economic measures on corporate decarbonization strategies, the application potential of AI in carbon reduction and efficiency improvement, and the use of AI to enhance climate-related risk identification, scenario simulation, and adaptation, assisting the Management Team in establishing a consistent decision-making perspective in an environment of increasing uncertainty.

ACTION SPOTLIGHT

OYAK Cement Blended Learning Program Recognized with Enocta Award

OYAK Cement's blended learning program received the "Blended Learning Star" award from Türkiye's Enocta e-learning platform in 2025. Combining physical and digital learning formats, OYAK Cement planned learning modules such as personal awareness, excellent work performance, emerging skills, and management to comprehensively support employee growth. The program encompasses a total of 10 blended learning initiatives, with 1,995 employees assigned to participate, generating over 900 activity learning records.



External Training Programs

Taiwan and Mainland China

TCC provides subsidies for external short-term courses, professional seminars, and workshops to encourage employees to continuously learn new industry knowledge and professional skills. Covering diverse fields such as occupational safety, professional skills, certification acquisition, rule of law, environmental hygiene, general education, and management, employees can apply to participate based on job requirements. In 2025, a total of 3,390 people participated, with subsidies amounting to NT\$8,460,153 and total external training hours reaching 39,013 hours.

TCC KEY FACTS

Percentage of Open Positions Filled by Internal Candidates (internal hires)

67%

| Global





Overview

Governance

Carbon Reduction

Energy Transition

Employee

Climate Action Talent

Employee Development

Employee Remuneration and Benefits

Occupational Health and Safety

Human Rights Protection

Nature

Social Inclusion

Appendix

Alignment with SDGs

3 GOOD HEALTH AND WELL-BEING



5 GENDER EQUALITY



10 REDUCED INEQUALITIES



2025 TCC GROUP HOLDINGS SUSTAINABILITY REPORT

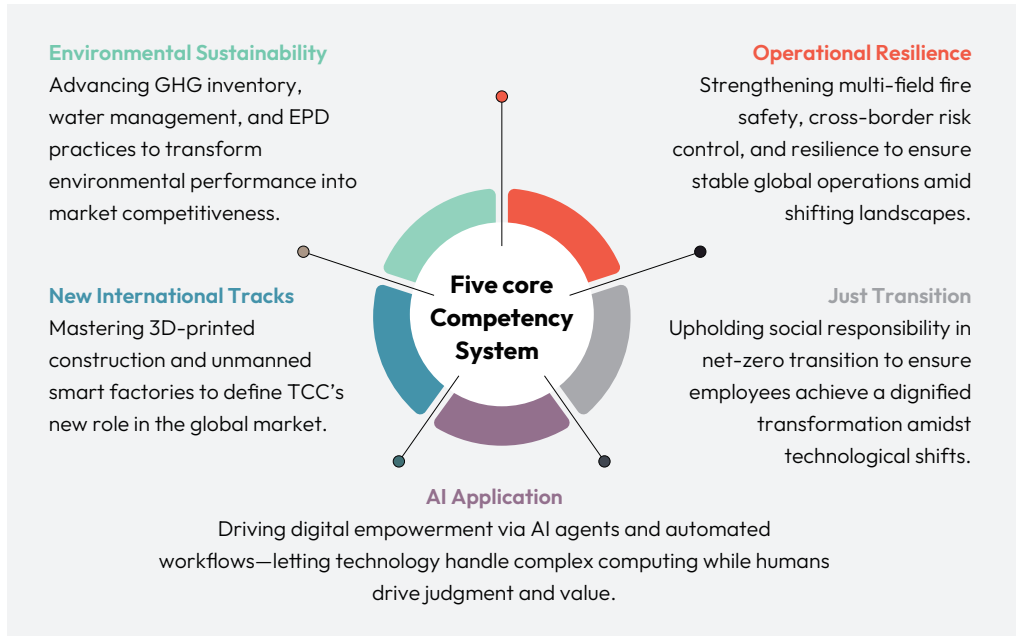
ACTION SPOTLIGHT

Institute of Nextgen Sustainability

Taiwan and Mainland China

Launched in late 2024 to internalize carbon management, TCC's "Carbon Academy" will upgrade to the "Institute of Nextgen Sustainability" in 2026 to meet global supply chain demands in carbon, water, and circular economy management. Guided by the

mission "protecting colleagues with digital technology, defining the future with sustainability," the Institute empowers employees with five core competencies to conquer the information tsunami and focus on high-value decisions.



Note 2: For the career/learning roadmap, please refer to the [ESG Section](#) on the TCC Official Website.

Note 3: Specifically designed for operational market needs, the planned Mainland China course section covers local AI software, policies, and carbon market operations, such as: DeepSeek and ERNIE Bot AI office tool tutorials.

Experience Sharing by Professional Lecturers and Overseas Managers

Courses at the Institute of Nextgen Sustainability feature knowledge transfer by experienced mid-to-senior managers with extensive forum experience, combining fieldwork with theoretical frameworks to align with global sustainability trends.



Ken-Ying Tseng
—
Partner/Attorney
at Lee and Li,
Attorneys-at-Law

Based on "Basic Law on Artificial Intelligence" and generative AI trends, this course shares corporate governance guidelines covering ethics, risk scenarios, and international playbooks. As TCC encourages AI adoption, these guidelines help business entities balance innovation with compliance, enhancing risk awareness.

Özge Aşçıoğlu
—
CIMPOR
Chief Audit Officer



Drawing from cross-border experience, this course shares CIMPOR's global compliance operations, including policy formulation, tech-monitoring of regulations, compliance training, and cross-departmental collaboration. As TCC deepens its international layout, this experience helps business entities strengthen their governance.

Internal Lecturer Training

TCC cultivates professional, enthusiastic colleagues and managers as internal lecturers to foster continuous learning and transform practical experience across regions and business entities into organizational assets. TCC has total of 15 internal lecturers in 2025.

Competencies of Internal Instructors

- **Professional Knowledge:** Profound domain knowledge and practical field experience.
- **Teaching and Expression:** Clear logical structure and engaging communication .
- **Guiding Empathy:** Two-way interaction that inspires thinking from the learner's perspective.

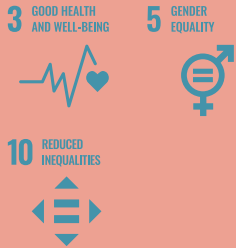
Digital Empowerment Support

- **Hardware & Technical Support:** Providing dedicated recording spaces with HD equipment, while guiding instructors to master digital pacing and interaction techniques.
- **Instructional Design Assistance:** Clarifying learning objectives to enhance the visualization and readability of course materials.
- **Knowledge Sharing Cloud:** Establishing an internal teaching platform to store top-tier lesson plans and videos for easy learning and access.



- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Climate Action Talent
- Employee Development
- Employee Remuneration and Benefits
- Occupational Health and Safety
- Human Rights Protection
- Nature
- Social Inclusion
- Appendix

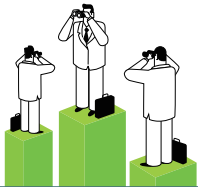
Alignment with SDGs



Cross-Generational Inclusion

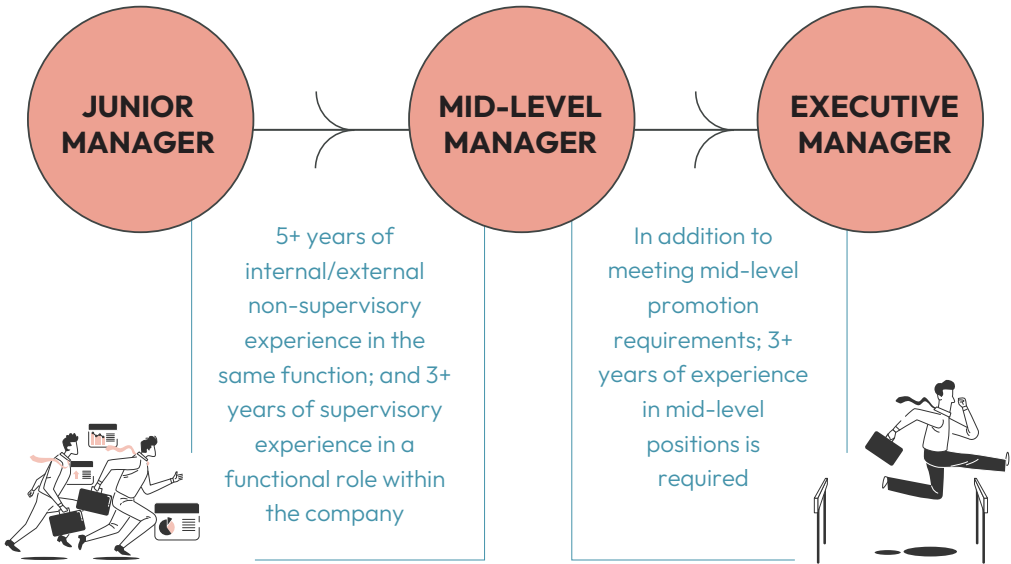
TCC is deeply rooted in the manufacturing industry, where on-site operations rely on the accumulation and transfer of practical experience. Through a mentorship system combined with flexible dispatch mechanisms, TCC hands down knowledge and skills to the new generation of talents, enhances cross-team and cross-generational collaboration, and accelerates the growth of young talents. To break the dilemma of "resignation equals loss," TCC targets launching "Talent Reconnection Mechanism" in 2026 to establish a sustainably linked expert talent pool system.

Stage for Young Talents Internship Program	Mid-Generation Succession and Experts Talent Pool	Cross-Generational Inclusion
Covering 16 professional fields, the program is centered on "early experience, early cultivation, and precise selection." ▪ Cross-Domain Proposal Competition ▪ Cross-Sector Site Visits ▪ Exclusive Workplace Mentors ▪ Diverse Thematic Courses ▪ Global Talent Linkage ▪ Provides multiple options including summer, semester, and academic year programs TCC targets the introduction of an international internship program in 2026 to strengthen cross-cultural interaction and talent exchange.	Cross-Business Unit Transfers — Global: Expands diverse career paths, promotes cross-domain experience, and enhances talent mobility and allocation flexibility. Expert Hub and Talent Pool — Taiwan: Structurally retains the professional qualifications of resigned or retired employees as a basis for filling future key talent gaps and rehiring, reducing recruitment costs and achieving seamless transmission of experience and value. Retiree Rehiring — Taiwan, CIMPOR: Invites retired former employees to pass on knowledge and experience to current colleagues through rehiring or outsourcing.	Mentorship Program — OYAK Cement: Senior employees act as mentors to guide and assist junior employees in developing professional skills and leadership capabilities. Mixed-Age Projects — Taiwan, CIMPOR: Combines senior talent and young teams to jointly participate in projects and technical exchange, strengthening organizational learning and problem-solving efficiency. Reverse Mentorship Program — OYAK Cement: Empowering the younger generation to share digital trends and innovative thinking with senior executives, breaking traditional hierarchies.



Transparent Promotion Channels

TCC establishes a fair and transparent promotion mechanism, selecting key talents based on employee performance and development potential to enhance overall organizational efficiency and strengthen employee retention. For those meeting performance standards and organizational needs, procedures such as performance evaluation, competency assessment, and supervisor recommendation ensure a fair and open selection process, further stimulating employees' motivation for career development.



Promotion background and skills: Bachelor's degree or above, possessing professional technical expertise, related practical capabilities, and required certifications for the position.



Note 4: For information on European subsidiaries CIMPOR, OYAK Cement, NHOA Energy, and Atlante, please refer to each subsidiary's sustainability report.



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Climate Action Talent

Employee Development

Employee Remuneration and Benefits

Occupational Health and Safety

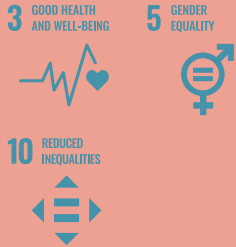
Human Rights Protection

Nature

Social Inclusion

Appendix

Alignment with SDGs



Employee Development Programs

#Reskilling
#Skill Building
| Teams and Networks

Electric Mining Truck Training

| Hoping Quarry
Target: 14 trainees (100% of current traditional mining truck drivers).
Schedule: November 2025 – October 2026.
Content:Deploying AI electric mining trucks ensures a just low-carbon transition and safeguards job rights. TCC drives a multi-year competency shift across basics/hardware, practice/tuning, repair/solving, and teamwork/optimization.

Institute of Nextgen Sustainability

| Taiwan and Mainland China
Target: All employees, 72.25% completion rate
Content: Covers environmental sustainability, AI applications, just transition, operational resilience, and international tech trends to internalize carbon management as a core competency.

Lean Certification Program

| CIMPOR
Target: ~400 participants/year (158 trained cumulatively from 2025 to July 2026)
Schedule: Launched in 2025; full employee coverage within 3 years.
Content: Introduces Lean Production principles and tools paired with practical applications to help employees streamline processes, reduce waste, enhance operational efficiency, and drive cross-departmental collaboration.

#Leadership | Coaching and Mentorship

Leadership Development Program

| Cement Business (Taiwan & Mainland China)
Target Audience: 17 potential mid-level managers from manufacturing, sales, cement plants, and RMC plants.
Content: Offers training, practical exercises, and consultant insights to enhance plant-level management and vision, building a succession pipeline with an "operator's mindset."

Sales Team Excellence Consensus Camp

| Cement Business (Taiwan)
Target Audience: 46 sales department members, RMC plant/branch managers, and potential talent.
Content: Builds a management mindset and communication foundation, combined with sales training and IL concrete expertise to transform knowledge into frontline sales combat power.

CIMLeaders

| CIMPOR
Target Audience: 117 CIMPOR managers and above.
Content: Utilizes gamified learning and management tools to drive agile leadership and self-growth, strengthening collaboration, team performance, and organizational resilience.

#Digital Transformation
| Teams and Networks

Generative AI Application Practices

| Cement and Environmental Protection Business (Asia)
Target: Supervisors and employees in Taiwan and Mainland China (As of 2026/04: 1,807 cumulative online attendees; 116 physical/live-stream attendees; 2,155 total course hours).
Content: Launches dual-track training covering security compliance, mainstream AI productivity tools, and AI Agent workflows. Physical sessions at the headquarter and Hoping Plant will expand to Yingde Plant, Suao Plant, and Ho-Ping Power Company starting June 2026.

#Cultural Education
#Sustainable Transition

Migrant Worker Diverse Care and Human Rights Protection Plan

| MoliceL
Target: All foreign migrant workers (approximately 170 people cumulatively).
Content: Promotes RBA zero recruitment fees and Human Rights Policy awareness. Implements multilingual job guidance via native-language interpretation and mentorship, holds regular symposiums, and organizes hometown festival-themed activities to ensure equal treatment, relieve cross-border stress, and build an inclusive workplace.

#Retirement

LOHAS Retirement Plan

| Taiwan
Target: Employees aged 60+, pre-retirees, and retired TCC partners.
Content: Pioneers age-60 employee stock trusts with multiplied contributions and three retirement insurances (life, accident, medical). Provides financial seminars, regular health checkups, and cross-generational dinners. Rehires key technical talents via flexible elderly employment programs based on project needs.

Linkage to
Company Operations

Revenue Growth of Sustainable Products & Services: +7.5%
| vs. 2024

Share of talents with Skills for Green Jobs: 73%
| Taiwan & Mainland China

External Training Cost Savings: NT\$2.425 million
| Institute of Nextgen Sustainability, Taiwan & Mainland China

Employee Engagement: 82%

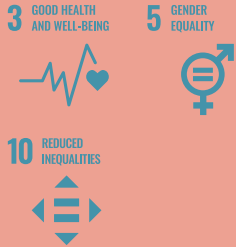
Note 5: Pro forma revenue basis. Scope of sustainable products and services refers to [TCC's 2025 Annual Report](#).



- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Climate Action Talent
- Employee Development
- Employee Remuneration and Benefits
- Occupational Health and Safety
- Human Rights Protection

- Nature
- Social Inclusion
- Appendix

Alignment with SDGs



4.3 Employee Remuneration and Benefits

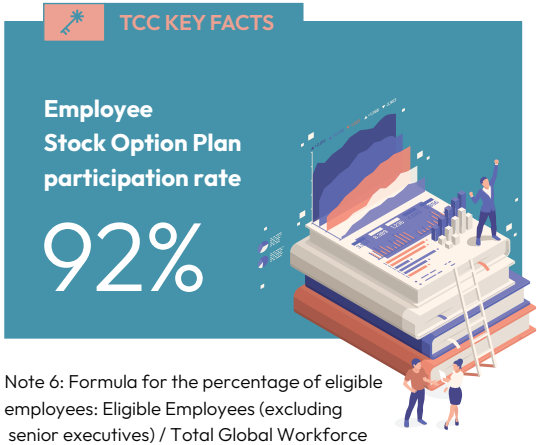
TCC believes that every contribution deserves a fair return, building a solid foundation for employees to grow with peace of mind through a fair and competitive remuneration system and comprehensive welfare guarantees. TCC integrates local commodity prices and living costs to establish a fair and transparent salary structure, and dynamically optimizes compensation levels through regular benchmarking against public data. TCC refers to local commodity prices and living costs to propose a fair wage concept, and continuously reviews local living costs and remuneration structures through public data analysis, gradually moving towards "decent work."

Remuneration Policy and Shared Profits

TCC provides market-competitive salary levels, plans generous performance bonus schemes to motivate employees, and offers diverse welfare systems and comprehensive statutory retirement plans. Adhering to the principle of sharing operational performance, TCC formulates its remuneration policy, where

employee remuneration is determined by comprehensive factors such as performance and job responsibilities, without discrimination based on gender (including sexual orientation), race, class, age, marriage, language, thought, religion, political party, place of origin, birthplace, appearance, facial features, or

physical or mental disabilities. TCC plans variable remuneration based on operational results and individual performance, aiming at profit sharing to reward employees with outstanding performance.



Employee Stock Option Plan (ESOP) Taiwan	TCC launched ESOP in 2019. Employees contribute a fixed amount from their monthly salary, and TCC provides a 1:1 matching contribution, jointly deposited into a dedicated trust account. Two annual lump sums are also allowed, with a 10% company match. Employees retiring at age 60 can receive multiplied contributions, which not only achieves talent retention but also assists employees in accumulating wealth and planning for their future retirement life.
Employee Savings Mutual Fund Taiwan	TCC encourages employee savings by adjusting savings amounts based on age, with deposits made every January and July. Simultaneously, the Employee Welfare Committee matches 50% of this amount, jointly deposited into the employee welfare trust account. In 2025, it was utilized by 1,363 people, with a cumulative amount exceeding NT\$2 million.
Treasury Shares Program 3–10% of eligible employees in Taiwan and Mainland China	The program serves as a long-term incentive, linking performance appraisal indicators with sustainability objectives (e.g., carbon reduction performance). Employees with strong performance in Taiwan and those assigned to overseas subsidiaries are eligible to participate. To recognize CIMPOR's management team's strong 2025 performance and strengthen long-term retention, a free share allocation equivalent to 5% of CIMPOR shares (approximately €30 million) has been approved for the management team, subject to a strategic lock-up period.
Quarterly and Performance Bonuses Taiwan and Mainland China	100% of employees are eligible for quarterly and performance bonuses. TCC introduced the quarterly bonus system in 2018 to share results with employees. Besides measuring quarterly EPS and key indicators, it incorporates the achievement of Science Based Targets (SBT) carbon emission intensity targets at each plant. Performance bonuses are also issued based on operational results and individual performance. ▪ Environmental indicators: Pollution control, SBT target achievement ▪ Social indicators: Occupational safety ▪ Governance: Quality, information security, anti-corruption, and anti-bribery

Note 7: For the average and median salaries of full-time employees not in managerial positions in 2025, and their changes compared to the previous year, please refer to [CH 7.1](#).



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Climate Action Talent

Employee Development

→ Employee Remuneration and Benefits

Occupational Health and Safety

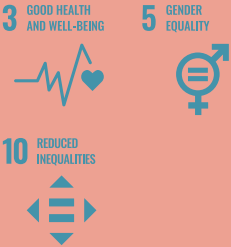
Human Rights Protection

Nature

Social Inclusion

Appendix

Alignment with SDGs



Performance Appraisal

TCC's fair appraisal system effectively links individual performance with overall corporate profitability and strategy. In 2025, TCC Group Holdings' performance appraisal rate reached 82% (excluding new hires under a 3-month

probation). Furthermore, all global sites link annual appraisals to sustainable development indicators, adjusted according to local operations and business priorities.

Mechanism	Execution Targets and Content
Goal-Oriented Management	Direct and second-level supervisors conduct initial/secondary evaluations, concluding 60% quantitative goals (including sustainability actions by all) and 40% qualitative competencies. Execution Once a year
Agile Dialogue	Departments communicate continuously via monthly/weekly meetings, with supervisors encouraged to proactively feedback performance during quarterly appraisals. Execution At least Once a quarter
Multi-Dimensional Performance Appraisal	The headquarter and plants co-evaluate general affairs, HR, and finance staff to ensure covering all aspects of performance. Execution Once a year
Team Performance Appraisal	Evaluates cross-team or cross-business project working groups and provides corresponding rewards for encouragement. Execution Once a year

TCC KEY FACTS

2017-2025
1,002 TCC babies born
| Cement and Affiliates in Taiwan and Mainland China (Mainland China started tracking in 2024)

Childbirth Gifts and Subsidies Accumulated
2,394,253 NTD
| Global Operation Sites

Note 8: The above table covers all sites in Taiwan and Mainland China, corresponding to seven business groups: Cement and Environmental Protection Business (Asia), Asset Management Business, Charging and Storage Business (Asia), Battery Energy Business, Energy for Social Transformation Business, and Investment Business.

Note 9: European subsidiaries CIMPOR, OYAK Cement, NHOA Energy, and Atlante conduct annual performance appraisals.



Annual Performance Appraisal Linked to Sustainability Indicators

Senior Management Remuneration Linkage Please refer to [CH1.2](#)

Sustainable Action by All

| Taiwan and Mainland China (cross-Business Group)

Annual appraisals for all TCC employees (from the President to senior management) directly link 10% to TCC's sustainable development goals via "Sustainable Learning Action Program." Indicators cover environmental protection, decarbonization, water/waste management, supply chain partnerships, risk management, talent training, anti-corruption, and anti-bribery.

SBT-Linked Remuneration Linkage

| Cement plants of Cement and Environmental Protection Business (Asia)

TCC sets plants' SBT carbon targets, using cementitious material carbon intensity targets per ton as KPI for quarterly and annual performance bonuses.

TCC Family Comprehensive Care Plan

TCC is committed to fostering a healthy and safe workplace. Centered on its Employee Assistance Program (EAP), TCC provides comprehensive support for physical, mental, and family well-being, fulfilling its long-term responsibility and commitment to employee welfare.

- + Institute of NextGen Sustainability
- + Flexible Hours
- + Childbirth Incentives and Family Support Program
- + Employee Stock Option Plan
- + Family Care Leave
- + Green Transportation Subsidies
- + Group Insurance and Health Examination System for Retirees (**Industry First!**)
- + Free 12-Month Uber One Membership
- + Uber Safe Night Commute Subsidies

- + Employee Assistance Programs (EAPs)
- + Friendly Long-term Care Program

Note 10: For information on overseas subsidiaries CIMPOR, OYAK Cement, NHOA Energy, and Atlante, please refer to their respective sustainability reports.

ACTION SPOTLIGHT

Employee Assistance Program (EAP)

Partnering with Metamorphosis Counseling Center, TCC provides multilingual counseling (Mandarin, English, Japanese, Taiwanese) covering psychological, legal, and financial matters. Taiwan-based employees can access immediate support via a toll-free hotline or 1-on-1 sessions (in-person, phone, video) to manage stress and enhance well-being.



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Climate Action Talent

Employee Development

Employee Remuneration and Benefits

Occupational Health and Safety

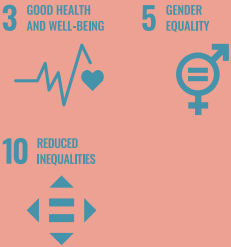
Human Rights Protection

Nature

Social Inclusion

Appendix

Alignment with SDGs



Employee Support Plan

Work Autonomy and Flexibility

Flexible Working Hours and Agile Work

- **Flexible Attendance** | Taiwan
Office and overseas subsidiary employees can adjust working hours as needed, with flexible attendance intervals provided (including subsidiaries CIMPOR, OYAK Cement, NHOA Energy, and Atlante).
- **Flexible Reduced Working Hours and Flexible Part-Time Work** | NHOA Energy
Released the Family Working Manifesto, providing temporarily reduced working hours with proportionally adjusted salary and flexible part-time plans to meet employees' care needs at different life stages
- **Time Zone Leave** | Taiwan
Employees in cross-border roles working across time zones can apply for time zone leave the following morning.
- **Paid Childcare Commute Leave – Family-Friendly Reduced Hours Pilot Program** (To be launched in H2 2026) | Taiwan
Provides eligible employees (based on Taipei City Government criteria) with a 1-hour reduction in daily working hours with no reduction in pay, supporting colleagues with childcare needs.

Diverse Leave Options

- **Paid Personal and Sick Leave** | Taiwan
3 days of fully paid leave to support employees in various life situations.
- **Paid Care Leave** | Taiwan
Eligible employees are entitled to 3 days of fully paid leave for special care needs of elderly family members or young children, or for handling emergencies.
- **Paid Volunteer Leave** | Taiwan
Half a day of volunteer leave is granted for 3 hours of volunteer service, and 1 day for 6 hours or more, up to 2 days per year.
- **Reward Annual Leave** | NHOA Energy
Employees who fully utilize their annual leave are entitled to an additional 5 days of leave.
- **Birthday and Holiday Leaves** | CIMPOR
Paid leave on the employee's birthday, and early dismissal on the eves of Easter and Christmas.



Physical and Mental Health and Safety

Medical Care

- **Medical Subsidies** | Taiwan
Up to NT\$40,000 for NHI or out-of-pocket medical, dental, and health check-ups; extendable to dependents.
- **Online Medical Care** | Taiwan
Phone or video consultations for sites without on-site medical personnel.
- **Vaccine Subsidies** | Taiwan
Free annual flu vaccinations.
- **On-site Services** | HQ
Free monthly 20-minute doctor/nurse consultations for stress or disease prevention; 646 visits in 2025.
- **Stress & Relaxation Seminars** | HQ & Online
Seminars by physical therapists or counselors for stress management and health promotion.
- **Employee Assistance Programs** | Taiwan
Partnered with counseling clinics since 2025 to support physical and mental balance.
- **Health Insurance** | Taiwan & CIMPOR
Preferential medical insurance extendable to immediate family (and spouses in Taiwan).
- **Health Checkups**
Annual checkup subsidies, confidential advice for medium-to-high risk employees (Taiwan); Free daily occupational health consultations and free family/general clinics 1–2 times weekly (CIMPOR) ; DNA testing and expert consultation (NHOA Energy)

Transportation and Travel Subsidies

- **Late-Night Overtime Program** | Taiwan
If employees work late due to urgent projects or temporary assignments, they can take designated taxis home with expenses covered by the company.
- **Green Transportation Subsidy** | Taiwan
A one-time electric scooter subsidy of NT\$15,000 is provided to help reduce the financial burden on employees transitioning to green transportation.
- **Travel Subsidies** | Taiwan
Provides an annual travel allowance of up to NT\$15,000 to encourage relaxation and well-being.

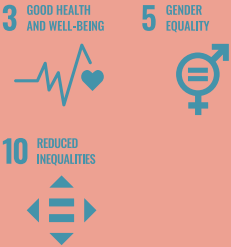




- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Climate Action Talent
- Employee Development
- Employee Remuneration and Benefits
- Occupational Health and Safety
- Human Rights Protection

- Nature
- Social Inclusion
- Appendix

Alignment with SDGs



Employee Support Plan

Family Care and Support

Maternal Protection and Friendliness

- Nurse Care Services** | Taiwan: Pregnant employees are scheduled for one interview during pregnancy and one postpartum, along with occasional phone contacts to provide health education consultations.
- Lactation Rooms** | All Operating Sites: Lactation rooms are available for unlimited use during milk collection times, which are counted as regular working hours.
- Paid Lactation Leave** | Atlante: Eligible employees in Italy are entitled to 2 hours of lactation leave per day.
- Wedding Cash Gift** | Taiwan and Mainland China: Distributed according to the regulations of each site, celebrating employees entering a new stage of life.
- Childbirth Bonuses and Cash Gifts**: Taiwan employees receive a bonus of NT\$10,000 for the first child, NT\$20,000 for the second, and NT\$50,000 for the third; Mainland China, CIMPOR, and OYAK Cement also refer to local practices and living consumption levels to provide corresponding childbirth cash gifts and support measures.

Family Care Support

- Work from Home** | Taiwan: Office employees with childcare needs for children under 12 can choose to work from home for 3 days per month (NHOA Energy assists employees in balancing professional and personal responsibilities by promoting hybrid work).
- Paid Care Leave** | Taiwan: Provides 3 days of paid family care leave, exceeding legal requirements (Atlante in Italy provides 3 days of paid "disability care leave" in accordance with the law).
- Retirement Protection** | Taiwan: Pioneered a retirement insurance plan where retired colleagues can participate voluntarily, and occasionally holds retirement banquets and plant visits. Additionally, regular health check-ups for retirees are held at various operating sites in Taiwan.

Paid Maternity and Parental Leave

Site	Maternity Leave (Primary Caregiver)	Paid Parental Leave (Primary and Non-primary Caregivers)	Fully Paid Paternity/ Prenatal Check-up Leave (Non-primary Caregiver)
Taiwan	8 weeks (fully paid)	6 months (26 weeks) at 80% of insured salary	7 days (fully paid)
Mainland China	14 weeks (98 days), up to 26 weeks (188 days) per local regulations	For children under 3, up to 10 days annually	Up to 30 days per local regulations
NHOA Energy	Sites in Italy provide 340 days; others per local regulations	Up to 12 weeks fully paid, or tops up government allowance to full salary	Italy 321 days, Australia 71 days, USA 41 days, Taiwan 14 days



NHOA Energy is certified as a Great Place To Work® in Italy, the United States, and Australia.

Note 11: Paid maternity leave, parental leave, and paternity leave for other European subsidiaries CIMPOR, OYAK Cement, and Atlante are provided in accordance with local regulations.

Note 12: Unless otherwise specified, the scope applies to sites in Taiwan and Mainland China.

ACTION SPOTLIGHT

Participation in the Taipei City Government's Reduced Working Hours for Childcare Program and Creation of a Friendly Long-Term Care Workplace

In response to the Taipei City Government's 'Reduced Working Hours for Childcare' initiative, TCC allows employees with children under the age of 12 residing in Taipei City to reduce their daily work hours by 1 hour with no reduction in pay. TCC expects to pilot this program in July 2026 to support colleagues in balancing work and family life. Furthermore, as Taiwan enters a super-aged society, TCC partnered with the Taiwan Association of Family Caregivers (TAFC) in 2025. Through this collaboration, the association provides supportive services to help family caregivers access long-term care resources, including information on Long-Term Care 3.0, professional care, skills training, private respite services (independent of government quotas), mental and emotional relief support, and case referrals. Simultaneously, TCC Lyceum has introduced long-term care courses to support employees navigating various stages of life.

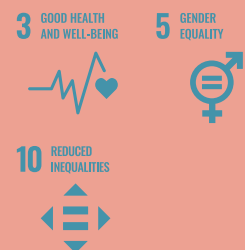


- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee

- Climate Action Talent
- Employee Development
- Employee Remuneration and Benefits
- Occupational Health and Safety
- Human Rights Protection

- Nature
- Social Inclusion
- Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

Creating a Vibrant Workplace



TCC Dragon Boat Team

By providing rewarded official leave, overtime pay, and weekly professional coaching, TCC encourages employees to join internal and regional dragon boat races. Collaborative training and racing deepen cross-team communication, enhancing physical fitness and organizational cohesion. In 2025, a total of 155 employees participated.



Sun Moon Lake Swim

TCC guarantees entry quotas and five-star hotel accommodation at Fleur de Chine to encourage employees to join the Sun Moon Lake swim challenge. Professional training and testing foster mutual support and boost confidence. In 2025, 43 employees participated.



TCC Youth and Senior Sports Meet

Annual health competitions integrate sports into daily work through individual point challenges and team contests, cultivating healthy habits. In 2025, cumulative participation reached 693.



Jiantanshan Trail Mountain Cleanup Trip

Annual hiking activities combine environmental cleanup with mutual encouragement. Cross-generational partners share experiences during hikes, relieving work stress and enhancing connections. In 2025, there are 58 people participants.



PolimiRun in Milan

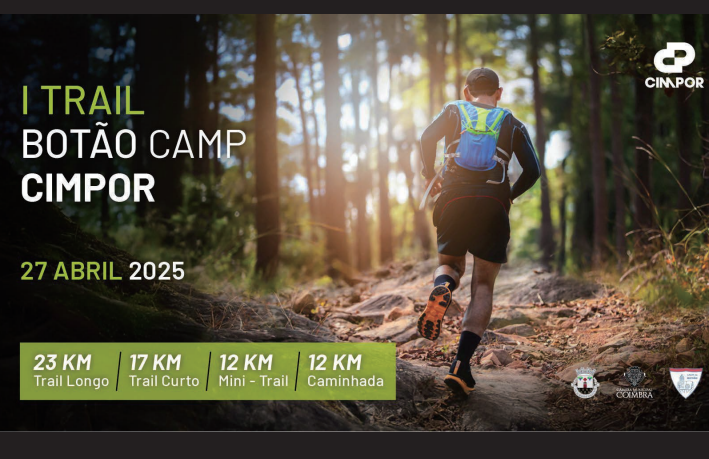
Leveraging NHOA Energy and Atlante's proximity to Politecnico di Milano, the companies encourages employees to join the biannual PolimiRun. Participating together fosters cross-team synergy and engages potential talent, thereby enhancing organizational cohesion and employer brand visibility. In 2025, the initiative recorded 35 employee participants.



ACTION SPOTLIGHT

Running with the Surrounding Community for Half a Century: CIMPOR Souselas "Trail Run"

To celebrate the 50th anniversary of the Souselas Plant, CIMPOR collaborated with the surrounding Botão community in April 2025 to organize the first Trail Botão Camp — CIMPOR trail run. This event encouraged employees to challenge themselves, relieve work stress through sports and nature, and support the development of the surrounding community. Registration fees varied by difficulty, and the total event revenue of 9,500 euros was fully donated to the Centro Social Cultural e Recreativo de Botão, a key local long-term care base. The funds will be used directly to purchase critical equipment for the center. For more information, please watch [Video - Cimpor](#).



TCC KEY FACTS

2024-2025

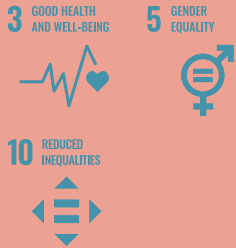
Sports for All Agency,
Ministry of Sports

Sports Enterprise
Certification





Alignment with SDGs



4.4 Occupational Safety and Health

“Whether for employees or outsourced personnel, we have a responsibility and must make every effort to prevent industrial safety incidents whenever they enter the Company's premises.”

— Chairman Nelson An-ping Chang

Occupational Safety and Health Management

TCC is committed to creating a safe working environment and has formulated "Occupational Safety and Health Policy Statement" of TCC Group Holdings to ensure consistent safety management across all global sites. Sites in Taiwan and Mainland China have established "Internal Control Policies for Occupational Safety and Health Management", which apply to cross-business employees, outsourced workers, and contractors. Safety regulations include "Occupational Safety and Health Management Regulations", "Occupational Safety and Health Management Plan", and "Occupational Safety and Health Code of Practice", driving a safety culture through behavior-oriented management. Cement and Environmental Protection Business (Europe-Africa) further specifies the importance of occupational safety in its "Integrated Management System Policy", with global sites striving toward a zero-injury vision.

To enhance management intensity, Cement and Environmental Protection Business explicitly links occupational safety indicators to compensation.

Performance bonuses for the management team and first-level supervisors at the operational headquarters are subject to deductions based on safety performance. At CIMPOR, 10% of variable compensation for all employees is directly linked to safety performance. OYAK Cement utilizes a OSH incentive program to encourage employees to actively promote safety awareness among partners and visitors through bonuses, driving continuous workplace safety improvements.

Charging and Storage Business (Europe) established an Integrated Management System for Health, Safety, Environment, and Quality (HSEQ), covering occupational safety and health, environmental management, and quality management. This system applies to all employees and operations, ensuring the regular identification, assessment, and mitigation of occupational safety and health risks.

TCC KEY FACTS

Obtaining ISO 45001 Occupational Safety and Health Management System

Cement and Environmental Protection Business (Asia)	Operational Headquarters, Cement Plants and RMC Plants in Taiwan and Mainland China
Cement and Environmental Protection Business (Europe - Africa)	CIMPOR Cement Plants, RMC Plants, Aggregate Plants, Dry Mortar Plants, and Paper Bag Plants, Central Laboratory OYAK Cement Headquarters, Cement Plants, RMC Plants, and Aggregate Plants
Energy for Social Transformation Business	Ho-Ping Power Company
Charging and Storage Business (Europe)	NHOA Energy and Atlante
Battery Energy Business	E-One Moli Corporation
Investment Business	Hoping EcoPort and Taiwan Transport & Storage

100% of contractors signed the Safety and Health Responsibility Commitment

Taiwan and Mainland China (Cross-Business Group), Atlante (European Charging and Storage Business)

TARGET



2026
Cement and Environmental
Protection Business (Asia)
LTIFR reduced to below 0.38

2030
Cement and Environmental Protection
Business (Europe - Africa)
LTIFR reduced to below 1
LTISR reduced to below 0.001

Occupational Safety and Health Policy Statement

Note 13: The target scope for Cement and Environmental Protection Business (Asia) includes cement plants, RMC plants, and affiliated environmental technology companies, excluding office locations, Longshan & Liaoning Cement Plants, Fuzhou & Liuzhou Grinding Stations, and the subsidiaries E.G.C. Cement Corp. and Feng Sheng Enterprise Company.

ACTION SPOTLIGHT

OYAK Cement OSH Management Recognized by World Cement Association

OYAK Cement's "Project 2425: A New Approach to Occupational Safety and Health Management Towards Zero Accidents" won 2026 World Cement Association Health & Safety award. Its "Digital Visitor Management System" (introduced in 2024) restricts access and tracks risk. Visitors must watch a customized "OSH Welcome" video before entry, while digital logging and SMS notifications streamline site controls and enhance personnel safety.



- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee

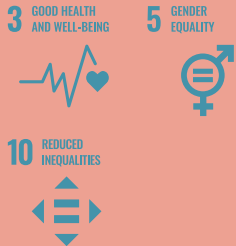
- Climate Action Talent
- Employee Development
- Employee Remuneration and Benefits

Occupational Health and Safety

- Human Rights Protection

- Nature
- Social Inclusion
- Appendix

Alignment with SDGs



Occupational Safety and Health Committee

TCC prioritizes workplace safety, regularizing OSH reviews as a fixed agenda in chairman-led monthly senior management meetings, with global strategies applied worldwide. Accordingly, all domestic and overseas subsidiaries establish OSH systems per local regulations.

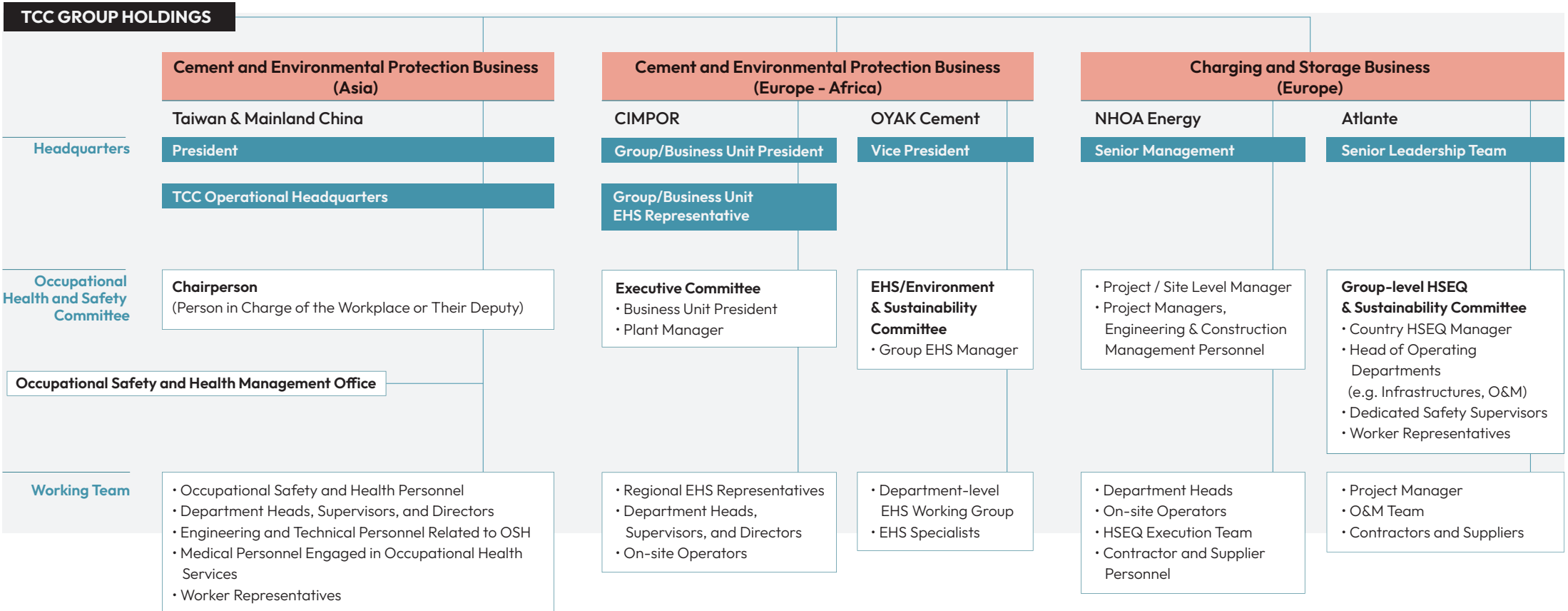
TCC Operational Headquarters and all cross-business sites in Taiwan and Mainland China feature plant-level OSH committees with at least 33% labor representation. These sites meet quarterly and monthly to track improvements. Since 2025, each plant has formed a “Safety Improvement Promotion Team” to enhance disaster prevention, while the

OSH Office enforces personnel accountability via President-approved reward and punishment mechanisms.

The OSH governance of CIMPOR and OYAK Cement spans corporate to operational levels, executing action plans and progress reporting. NHOA Energy leverages its Joint Health and

Safety Committee for systematic site-level risk control and compliance tracking. Atlante implements national-level Health, Safety, Environment and Quality (HSEQ) management, comprising executives and employee representatives to ensure consistent safety and quality standards across all operations.

Occupational Safety and Health Committee Organization





Overview

Governance

Carbon Reduction

Energy Transition

Employee

Climate Action Talent

Employee Development

Employee Remuneration and Benefits

Occupational Health and Safety

Human Rights Protection

Nature

Social Inclusion

Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS SUSTAINABILITY REPORT

Occupational Safety Reporting Mechanism

OSH Information Reporting and Compilation

Occupational Safety Weekly Report

Routinely tracks occupational injury data, safety and health audit deficiencies and improvement results, contractor violations and handling outcomes, and the implementation of safety and health education and training.

Occupational Accident Reporting Platform

- Replaces email reporting with a platform to unify reporting channels.
- Completes reporting within 1 hour of an accident.
- Introduces integrated form design to improve reporting accuracy and efficiency.

Occupational Disease and Health Management

- Sites manage occupational diseases per TCC principles and local regulations.
- Conducts quarterly/semi-annual environmental monitoring via recognized institutions based on regulations and risks.
- Employees legally take avoidance measures during immediate hazards.
- Health check-up: Triennial (Taiwan) / annual (Mainland China); on-site medical personnel perform graded tracking.
- NHOA Energy conducts annual employee health and safety surveys.
- OYAK Cement drives the CEMHEALTH360 preventive occupational health program.

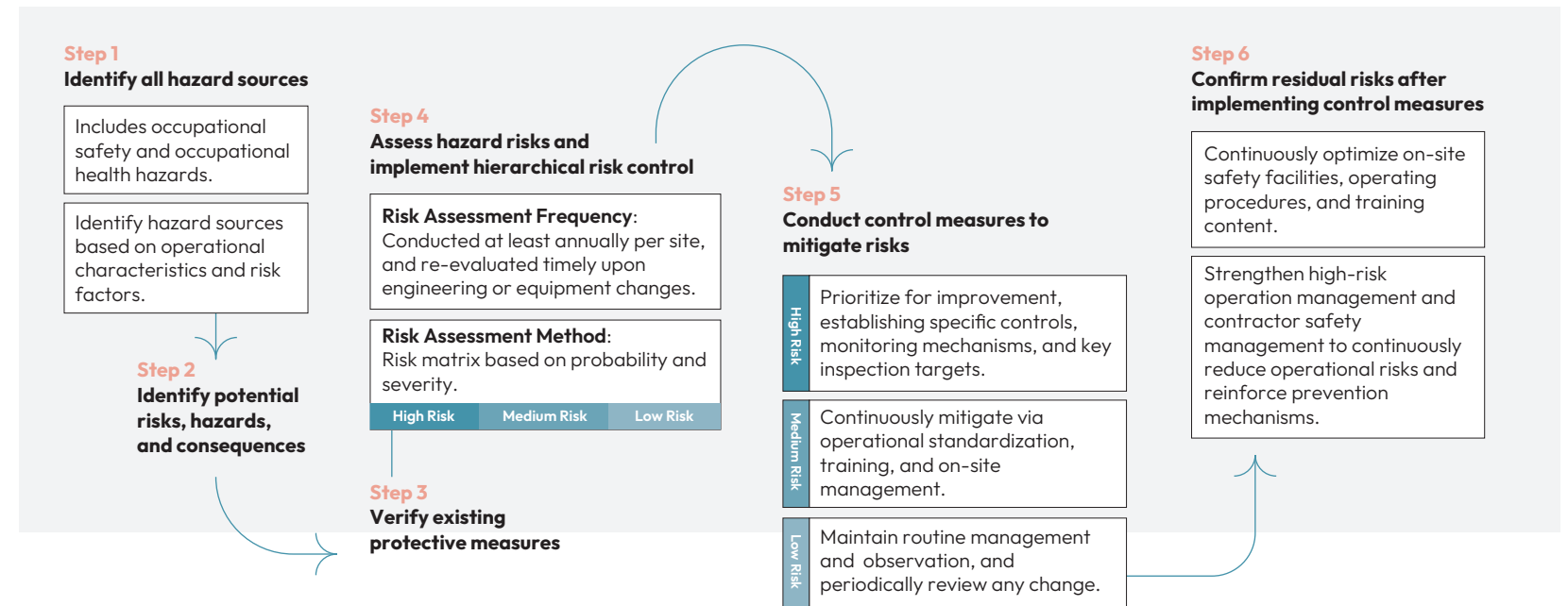
Note 14: Occupational diseases are diagnosed or judged by qualified physicians or institutions.



Hazard Identification and Risk Assessment

TCC's global workplaces feature clear warning signs, safety boards (covering risk warnings, PPE, and emergency contacts), evacuation cards, and the 7 Life-Saving Rules. Employees have the right to stop work and evacuate during imminent danger. Regular hazard identification and risk assessments cover all routine and non-routine operations, including hazardous workplaces and processes.

For the European Charging and Storage Business, dedicated HSEQ personnel coordinate cross-functional teams and suppliers. Following a systematic "Hazard Identification-Affected Parties-Existing Controls-Mitigation Measures-Risk Classification" process, they combine documented assessments and Job Safety Analyses (JSA) for full-stage control. In 2025, most risks were effectively controlled, with high-risk items tracked for improvement. Sites continue to optimize safety facilities, SOPs, and training, while strengthening high-risk operation and contractor safety management.





Overview

Governance

Carbon Reduction

Energy Transition

Employee

Climate Action Talent

Employee Development

Employee Remuneration and Benefits

Occupational Health and Safety

Human Rights Protection

Nature

Social Inclusion

Appendix

Alignment with SDGs

3

GOOD HEALTH AND WELL-BEING

5

GENDER EQUALITY

10

REDUCED INEQUALITIES

ACTION SPOTLIGHT

Heat Hazard Project

Building on the supplier survey results from the 2024 human rights and environmental due diligence, and in response to the increasingly significant heat hazard risks brought by extreme weather, TCC launched “Heat Hazard Project.” Since 2024, TCC has established a systematic high-temperature protection mechanism for outdoor workers (including employees and contractors) at various plants and quarries of the Cement and Environmental Protection Business (Asia).

Regarding hazard prevention strategies, TCC prioritizes source environmental protection and invests resources to optimize outdoor workspaces, including adding dedicated shaded rest areas and strictly requiring sufficient water dispensers or bottled water around operational hot spots.

Simultaneously, it supplements these efforts with high-temperature operational safety advocacy to strengthen personnel awareness of heat hazard prevention. In addition to optimizing the physical working environment, TCC issues high-temperature allowances to technical

personnel working outdoors. The scope covers the Cement & Environmental Protection Business (Asia), Energy for Social Transformation Business, TCC Green Energy Corporation, and Hoping EcoPort.

Under the premise of implementing environmental improvements, TCC combines supplementary welfare allowances based on regulations to ensure workers' health.

Issuance Conditions: Regardless of Temperature Levels, Calculated Based on Work Attendance Days

Taiwan Plants	Mainland China Plants
June to October annually	July to September annually

TCC KEY FACTS

2025
High-Temperature Allowance
Cumulative issuance of
approximately
NT\$10.74 million

Work Injury & Near-Miss Incident Investigation and Improvement Process

Work Injury and Fatality Incidents		Near-Miss Incidents
Incident Reporting	After a major occupational disaster occurs, it is immediately reported to the OSH Office and superior supervisors. Contractors shall report to the supervising unit by phone within 30 minutes and notify fire and medical units according to relevant regulations. If a major occupational disaster occurs, Taiwan plants report to the local labor inspection agency within 8 hours, while Mainland China plants report within 1 hour.	When a near-miss incident occurs, the unit must complete the report to the management level on the same day and register the incident details in the “Investigation Form of Near-Miss Incidents”, which is subsequently submitted to the OSH Office for record-keeping.
Cause Investigation	Following a major occupational disaster, the OSH Office assists units in establishing an “Occupational Accident Investigation Taskforce” to conduct on-site inspections with labor representatives and department heads. After submitting “Accident Prevention Report” to the President, a review meeting for the major occupational disaster investigation report is convened within one week to review the incident and handling process.	After an incident occurs, the unit must analyze the cause and provide supporting documentation. The OSH Office reviews the source management and the completeness of improvement measures, and provides explanations during OSH monthly meetings.
Review and Improvement	Based on the improvement items proposed by the Occupational Accident Investigation Taskforce, each unit tracks progress until completion and conducts a comprehensive review. The site of a major occupational disaster must be photographed for evidence and submitted to the Occupational Safety and Health Management Office along with the investigation report to serve as training material, preventing similar incidents from recurring.	Improvement measures for near misses are tracked by the OSH Office to confirm their effectiveness, with on-site re-inspections conducted as needed to verify the measures.

In 2025, minor occupational safety incidents at global sites included falls, minor sprains, flying objects, falling, and collisions. Source management was conducted post-incident.

Main causes were insufficient employee safety awareness, lack of anti-collision markings on glass, or failure to follow regulations. To strengthen accident prevention and safety resilience while preventing recurrence, TCC implements comprehensive improvements rather than single-point fixes. All sites comprehensively implement operational adjustments, training, and increased audit frequency, and optimize office environment design to achieve the "zero occupational injuries" goal.



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Climate Action Talent

Employee Development

Employee Remuneration and Benefits

Occupational Health and Safety

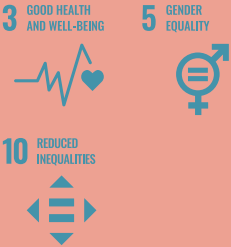
Human Rights Protection

Nature

Social Inclusion

Appendix

Alignment with SDGs



Contractor Safety Management

"When you join TCC, you become part of our family." TCC extends its OSH management to contractors. To ensure on-site compliance, TCC established "Contractor OHS and Environmental Management Rules" and incorporates them into standard contracts based on work content, requiring contractors in Taiwan and Mainland China to comply with regulations and assume management responsibilities. Contractors must sign the "Safety and Health Responsibility Commitment", complete OSH training, and fill out "Workplace Environmental Hazards Notice" and "Notification." before entering the plant. For major occupational injuries, contractors may be blacklisted or suspended.

The Cement and Environmental Protection Business (Europe - Africa) manages contractors following "Occupational Health and Safety Contractor Management Manual" and "Occupational Health, Safety and Environmental Regulations." OYAK Cement applies contract reward/sanction mechanisms, while Charging and Storage Business (Europe) conducts on-site contractor audits. Furthermore, TCC enforces road safety via pre-trip breathalyzers and dashcams installed by late 2025.

Health & Safety Education and Training to Enhance OSH Awareness

Following current government regulations, TCC annually organizes labor, OSH, and disaster prevention training. It regularly arranges initial and refresher certification training for first aiders, oxygen-deficient operations, hazardous equipment, and OSH affairs managers. Based on on-site operational needs, TCC conducts additional training for OSH certifications to continuously strengthen safety expertise. In 2025, to further enhance accountability, Cement and Environmental Protection Business (Asia) organized an OSH competition evaluated on five main themes: establishment of safety and health systems, implementation and operation, verification and performance, proactive OSH performance actions, and supervision and inspection.

TCC KEY FACTS			
2025 TCC Global Cross-Business Occupational Safety and Health Education Training			
	Cumulative Training Participants	Cumulative Training Hours	
	Employees 66,261	Employees 110,536	
	Contractors 13,719	Contractors 19,030	

Occupational Safety and Health Education and Training Planning

Taiwan Annual hours: 10 hours for all employees (including general staff and all supervisors) Content: Strengthening safety regulations for on-site working environments	CIMPOR Annual hours: 14 hours for all employees Content: Work at heights, confined space work, 7 Life-Saving Rules, first aid, fire drills, etc.
Mainland China Annual hours: At least 72 hours for quarrying personnels and 24 hours for others Annual "Safety Re-education Training": At least 20 hours for quarrying personnels and 8 hours for others	OYAK Cement Annual hours: 16 hours for all employees and contractors Strengthening OSH culture: Individual training for supervisors and specialized training for high-risk roles

ACTION SPOTLIGHT

Company Implements Digital OSH, Making Safety a Habit

Ho-Ping Power

Moving beyond rigid regulations, Ho-Ping Power Company focuses on "people." Each month, supervisors, employees, and contractors conduct joint site inspections, transforming one-way commands into two-way communication to internalize safety into daily habits.

- Smart access monitors site entry; contractors require prior safety training.
- Deploys color-coded and arrow-marked pipelines to reduce misjudgment and risk.
- Work Permit System enforce hazardous operation isolation and disconnection.
- Certified training, monthly journals, and the 2025 wellness team foster OSH.

See [Sustainable E-Newsletter](#) for details>> [Watch the video](#)



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Climate Action Talent

Employee Development

Employee Remuneration and Benefits

→ Occupational Health and Safety

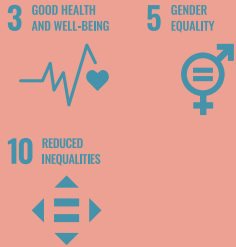
Human Rights Protection

Nature

Social Inclusion

Appendix

Alignment with SDGs



Smart OSH Applications

The "cyber-physical integration" of work environments systematically improves safety in high-risk locations. TCC continues to introduce automated equipment, integrating AI smart monitoring and digital platforms to identify potential OSH risks in real time and provide early warnings for a resilient proactive management system. For specific applications of AR glasses, autonomous mining trucks, and AI x IoT, please refer to [Pillar IV](#).

AI High-Risk Operation Identification Combined With "Grid Member" Advanced Management

Yingde Plant

TCC's Hangzhou Operational Center promoted the "CTC Enterprise Safety Production Management System" across all plants, pioneering the "Ying An Lian" AI risk identification software at Guangan Plant to establish a PDCA digital closed-loop management based on the original "Grid Member Mechanism." from risk detection, feedback, and prompting to execution. Starting in 2026, the center is upgrading this grid management into a five-level hierarchy for systematic block control. Managers must regularly execute inspections and report to the management platform, which automatically issues warnings for overdue audit items to ensure effective hazard improvement.

AI Intelligent Driving Supervision

- Yingde Plant
- Taiwan RMC Plant (Under Planning)

Yingde Plant introduced a driver monitoring system using image recognition to detect unsafe driving in real time. Anomalies automatically sends images to alert the central control room for immediate intercom intervention. This smart supervision is expanding to Taiwan RMC plants to enhance remote early warnings, successfully reducing cross-site logistics operational risks.

Remote Medical Services

Ta-Ho Maritime

Since 2024, TCC has collaborated with Taipei Medical University to establish a remote healthcare network, providing 24-hour real-time medical contact and emergency consultation services. This initiative covers education and training on medication use, first aid knowledge, mental health, and health management, increasing medical accessibility for crew members while reducing voyage deviations caused by medical needs.

AI Facial Recognition Management

Ho-Ping Power Company

In 2019, Ho-Ping Power Company pioneered the introduction of a contractor facial recognition system, and in 2020, expanded it to employee identity management. This system integrates with OSH Office's digital monitoring platform, adopting "diverted management" for employees and contractors, enhancing personnel access control and contractor management.

AI Drone Inspection

Yingde Plant

TCC introduced AI smart drone inspections by integrating AI algorithms with drone multispectral sensing modules for automated solar patrols via a central platform. This accurately identifies component defects to ensure green energy efficiency, while replacing high-risk manual inspections and reducing personnel operational risks.

AI Image Recognition

- OYAK Cement all Plants
- Suao Plant
- Taipei Plant
- Guangan Plant
- Xuyong Plant
- Taiwan Transport & Storage

Cement and Environmental Protection Business (Europe - Africa) deployed approximately 60 sets of monitoring equipment at plants in Türkiye and Portugal, where OYAK Cement completed the monitoring system across all its plants to automatically verify PPE compliance (hard hats, safety belts, masks, and reflective vests). Portugal's Alhandra Plant piloted Protex AI for future drone-integrated fire equipment monitoring. Cement and Environmental Protection Business (Asia), followed 2024 pilots at Suao and Taipei plants, expanding the system to Guangan and Xuyong plants' high-risk zones in 2025 to track PPE, violations, and personnel clearance, adding



remote shouting and searchlights.

Additionally, Taiwan Transport & Storage applies AI for warehouse hard hat tracking and slope forklift safety, while planning 24/7 thermal imaging at EV and electric forklift charging areas for early heat-source warnings.



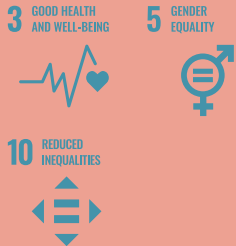
Overview
Governance
Carbon Reduction
Energy Transition
Employee

Climate Action Talent
Employee Development
Employee Remuneration and Benefits
Occupational Health and Safety

Human Rights Protection

Nature
Social Inclusion
Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

4.5 Human Rights Protection

Aligning with EU Human Rights and Environmental Due Diligence CSDDD

TCC strictly adheres to the principles of prohibiting child labor, human trafficking, and forced labor, while fully complying with all regulations regarding wages and working hours. While ensuring the timely payment of fair wages, TCC provides a healthy and safe working environment, supporting employees in maintaining good physical, mental, and spiritual health to achieve work-life balance.

To implement the Human Rights Policy and ensure its effectiveness, TCC initiated the establishment of human rights due diligence in 2019. In 2024, TCC proactively aligned with the EU Corporate Sustainability Due Diligence Directive (CSDDD), referencing UN and OECD guidelines, as well as relevant standards such as ISO and ESRS, to integrate due diligence into

corporate policies and management systems. From commitment and governance to operational processes, TCC avoids negative impacts on human rights and the environment, publishing its first Human Rights and Environmental Due Diligence Report in December 2024.

Referencing the AA1000 Stakeholder Engagement Standard, TCC identified a total of eight categories of Rightsholders and related issues based on five principles: dependency, responsibility, tension, influence, and diverse perspectives. Most material issues have been effectively managed through existing mechanisms, while the remaining risks are incorporated into remediation procedures with strengthened prevention.

Survey Boundaries	Operation Headquarters, Cement and Environmental Protection Business (Asia): Cement and RMC Plants Taiwan Sites	Operation Headquarters, Cement and Environmental Protection Business (Asia), Cement and Environmental Protection Business (Europe-Africa), Asset Management Business, Charging and Storage Business (Asia), Battery Energy Business, Energy for Social Transformation Business, and Investment Business
	2024	2025
Rightsholders	Employees, female employees, local communities, clients, suppliers/contractors, and indigenous people	Employees, female employees, local communities, clients, suppliers/contractors, indigenous peoples, migrant workers ¹⁶ , and female migrant workers ¹⁶

Note 15: Cement and Energy Storage Business (Europe-Africa) and Charging and Storage Business (Europe) are expected to continue in 2026.

Note 16: Migrant workers are included as they are employed at the Taiwan sites of the Battery Energy Business.

[Human Rights Policy](#)

[2025 Human Rights and Environmental Due Diligence Report](#)

Human Rights and Environmental Due Diligence Process





- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee

- Climate Action Talent
- Employee Development
- Employee Remuneration and Benefits
- Occupational Health and Safety

Human Rights Protection

- Nature
- Social Inclusion
- Appendix

Alignment with SDGs

3

GOOD HEALTH AND WELL-BEING

5

GENDER EQUALITY

10

REDUCED INEQUALITIES

Human Rights and Environmental Risk Assessment and Confirmation

TCC refers to the ISO 31010 risk assessment methodology and the OECD Due Diligence Guidance for Responsible Business Conduct, utilizing international human rights and environmental risk indicators, questionnaires, and focus groups to assess risk items across eight categories of Rightsholders. Items with a high likelihood and significant impact are prioritized for due diligence.

To verify whether potential or negative impacts are appropriately addressed, TCC references the UN Guiding Principles on Business and Human Rights (UNGPs) to set quantitative or qualitative indicators, tracking management measures, effectiveness, and remediation grievances for each risk in a dashboard format. Through existing management systems alongside prevention and mitigation measures, most risks have been reduced to low residual risks, with the remainder remediated and their preventive management strengthened. For more information, please refer to the ESG section on [TCC official website](#) and the [TCC 2025 Human Rights and Environmental Due Diligence Report](#).

Facing systemic risks such as climate change, aging populations, and the net-zero transition, TCC will continue its due diligence in 2026, gradually expanding the scope to global locations (including human rights issue management in the international supply chain).

By introducing multiple communication channels—such as workshops, qualitative interviews, and questionnaires—TCC aims to drive the in-depth participation of Rightsholders, ensuring that results meet actual needs. This will enable early formulation of more comprehensive prevention and mitigation strategies, strengthening overall response capabilities.



Supply Chain Human Rights and Environmental Due Diligence

Identifies human rights risk issues among significant Tier-1 suppliers and contractors through international human rights and environmental indicators, as well as questionnaire surveys of TCC employees, office operations, and plant operation suppliers and contractors. The scope of issues includes but is not limited to: forced labor, human trafficking, child labor, freedom of association, collective bargaining, wages and benefits, bullying and harassment, climate change, biodiversity, and environmental degradation.

2025 Human Rights Due Diligence Results

Scope	Percentage of Assessed Risks	Percentage of Identified Risks	Percentage of Mitigated Identified Risks
Own Operations	100%	1.20% ¹⁷	100% ²¹
Contractors and Tier-1 Suppliers	100% ¹⁸	3.94% ¹⁹	100% ²⁰
Joint Ventures ²²	100%	0%	100%

Note 17: Recordable work-related injury or ill health of global business entities ÷ total number of employees

Note 18: Tier-1 suppliers of the following business entities identify risks using sustainability questionnaires, while other business entities identify risks using international human rights and environmental indicators.

- Cement and Environmental Protection Business (Asia): Cement plants (including Longshan Plant), RMC plants, grinding stations (including Fuzhou Plant), environmental technology companies under each plant, office locations in Taiwan and Mainland China, as well as subsidiaries Feng Sheng Enterprise Company and E.G.C. Cement Corp.
- Energy for Social Transformation Business.

Note 19: The aforementioned supplier sustainability questionnaires identified a total of 12 high-risk suppliers, representing the proportion of total procurement amount.

Note 20: Proportion of suppliers among the 12 identified high-risk suppliers with whom improvement plans have been discussed.

Note 21: All business entities have formulated corresponding prevention and mitigation plans based on the risk identification results.

Note 22: The joint venture is Ta-Ho Environmental.





Overview

Governance

Carbon Reduction

Energy Transition

Employee

Climate Action Talent

Employee Development

Employee Remuneration and Benefits

Occupational Health and Safety

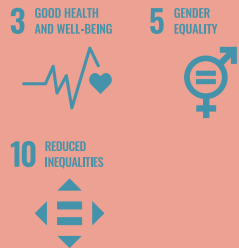
Human Rights Protection

Nature

Social Inclusion

Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

Strengthen Human Rights Management

Human Rights Education and Training

Across TCC's Taiwan and Mainland China operations (across business groups), the Human Rights Policy, the Statement of Integrity and Ethical Conduct, and the Anti-Discrimination, Anti-Harassment, and Anti-Bullying Policy form part of the mandatory annual training program. All employees are required to read the policies and complete the required assessments annually.

In the Cement and Environmental Protection Business(Europe-Africa), human rights-related policies and requirements are also incorporated into the Code of Business Ethics Acknowledgement, which all new employees are required to sign.

Zero Tolerance for Bullying, Discrimination and Harassment

TCC values employee feedback and rights, actively creating a safe, diverse, and inclusive workplace. To protect human rights from infringement or negative impacts, TCC has formulated the Anti-discrimination, Anti-harassment, and Anti-bullying Policy , which applies to all global operational sites.

Adhering to relevant conventions of the International Labor Organization (ILO) and local regulations, the policy eliminates all forms of workplace discrimination, harassment, and bullying. All global subsidiaries must adopt this policy as a guiding principle, combining it with local laws to develop specific implementation

measures. TCC also conducts regular training to enhance employee awareness of anti-discrimination, harassment, and bullying to jointly maintain a friendly working environment. TCC establishes grievance channels, including an online friendly workplace platform and an employee feedback email, which are handled confidentially by dedicated personnel. TCC takes appropriate protective measures according to the law to safeguard the personal data and privacy of whistleblowers or complainants, and has established an appeal review committee to ensure that incidents are handled professionally and fairly, preventing unfair retaliation or treatment. Furthermore, TCC has implemented workplace anti-discrimination, anti-harassment, and anti-bullying grievance and disciplinary measures to protect the physical and mental health of colleagues and co-create a harmonious working environment.



TCC KEY FACTS

Global employee
nationalities

58 countries

Human rights training

2,921.5 hours

7,464 participants

| Taiwan & Mainland China, OYAK Cement,
Atlante(Planning underway for the other sites)

Multicultural Inclusion

Cross-Cultural Exchange

Following its transition into an international holding company in 2024, cross-border and crosssector collaboration has become standard practice at TCC. To foster multicultural integration, TCC promotes understanding among employees from diverse backgrounds through various activities. For foreign expatriates stationed in Taiwan, TCC invites them across all business units to join annual recruitment events, year-end parties, and Dragon Boat races to fully experience the local culture.

In addition, to support foreign colleagues in adapting to work and life in Taiwan, NHOA Energy provides real estate rental matching resources, medical assistance, dedicated transportation for energy sites, and Mandarin courses to help foreign colleagues integrate into the Taiwanese workplace. By 2026, TCC plans to integrate employee-related information and service resources through the SAP SuccessFactors digital HR system, providing a systematic and real-time support mechanism.

[Anti-discrimination, Anti-harassment, and Anti-bullying Policy](#)
[Anti-Discrimination, Anti-Harassment and Anti-Bullying Complaint and Disciplinary Procedures](#)

ACTION SPOTLIGHT

Cross-national and Cross-business Integration Conference



Cultural diversity is fundamental to bridging gaps in cross-national collaboration and building mutual trust.

The 2025 TCC Global Cement and Environmental Business Annual Conference brought together senior executives from Europe, Asia, and Africa for strategic exchanges on low-carbon transition and energy innovation. The program also included visits to the National Palace Museum and the Dadaocheng Historic District, highlighting Taiwan's cultural heritage and TCC's 80-year legacy of growth alongside the island. A Chinese calligraphy workshop further allowed participants to experience the Eastern values of focus and balance, strengthening global team cohesion and alignment.



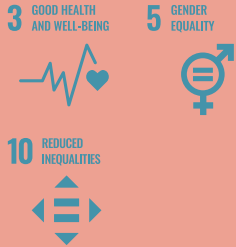
- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee

- Climate Action Talent
- Employee Development
- Employee Remuneration and Benefits
- Occupational Health and Safety

Human Rights Protection

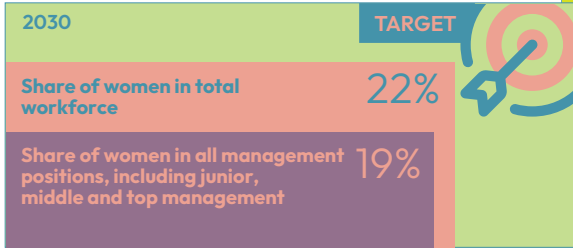
- Nature
- Social Inclusion
- Appendix

Alignment with SDGs



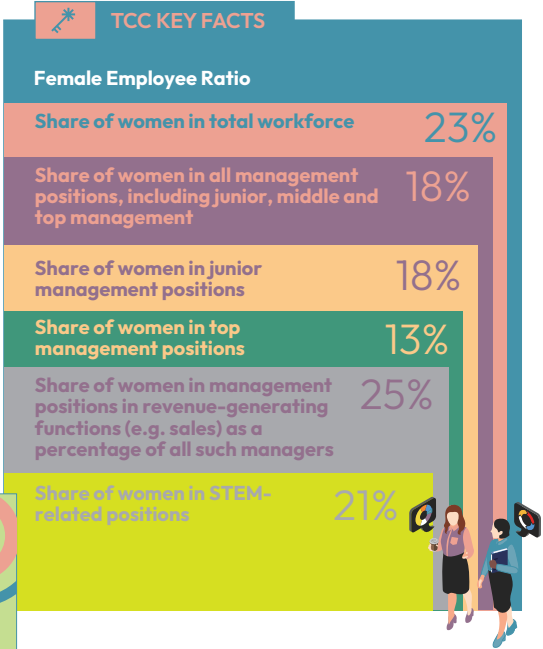
Gender Diversity and Inclusion

TCC firmly believes that diverse perspectives drive corporate innovation. Due to industry characteristics, most job applicants across the Group’s business entities are biologically male. To build an inclusive culture and reduce groupthink in corporate decision-making, TCC sets targets for the proportion of female employees. TCC strictly adheres to equal employment principles during recruitment, focusing on candidates’ abilities and potential, breaking traditional restrictions on gender, educational background, and major, and complying with local regulations and labor norms at all operating sites to provide equal employment opportunities. For recruitment at sites in Taiwan and Mainland China, TCC utilizes a self-developed AI resume talent analysis system, which matches talent expertise through big data computing, effectively eliminating unconscious bias that may arise from manual review. Furthermore, global sites rigorously review recruitment content, using gender-neutral expressions or non-binary language to eliminate gender stereotypes from the source.



Gender Equality Policy | Atlante

In response to the cross-border operation of charging stations in Southern Europe and Switzerland, Atlante published its first gender equality policy in 2026 and incorporated diversity, equity, and inclusion into corporate governance based on the framework of UNI/PdR 125:2022, the national standard guidelines for gender equality management in Italy, where its headquarters is located. Atlante established a Gender Equality Committee responsible for overseeing policy implementation, KPI monitoring, and continuous improvement, ensuring that fair recruitment, equal pay, and career development mechanisms are implemented in daily management.



Note 23: The scope of female employee targets and performance covers Cement and Environmental Protection Business (Asia), Molicel, and NHOA Energy, but excludes Longshan Plant, Liuzhou Plant, and Feng Sheng Enterprise Company.

ACTION SPOTLIGHT

NHOA Energy Promotes Female STEM Education

NHOA Energy supports the Girls@Polimi initiative at Politecnico di Milano, sponsoring scholarships to encourage female high school students considering university options to enter STEM (science, technology, engineering, and mathematics) fields. NHOA Energy donates one scholarship per year, valued at 24,000 euros.



As CIMPOR Global, we are proud to celebrate success!

CIMPOR Supports Gender Equality in Sports

In 2025, CIMPOR and OYAK Cement jointly sponsored Turkish professional boxer Dilara Yücel. The athlete’s resilience and “She Wolf” spirit align closely with the corporate values of both companies. This partnership reflects a shared commitment to promoting equal access to resources and opportunities for people of all genders across both sports and broader society.





Overview

Governance

Carbon Reduction

Energy Transition

Employee

Climate Action Talent

Employee Development

Employee Remuneration and Benefits

Occupational Health and Safety

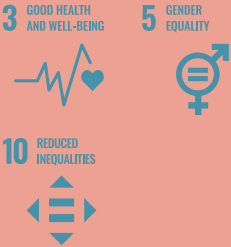
Human Rights Protection

Nature

Social Inclusion

Appendix

Alignment with SDGs



Employee Engagement Survey

TCC initiated the employee engagement survey in 2019 and introduced the Willis Towers Watson (WTW) engagement survey tool in 2024. Considering TCC's extensive locations and focus on mitigation measures, the survey frequency was adjusted to biennially. Based on the results, TCC communicates key feedback with department heads and employees, formulates improvement and optimization action plans, and tracks execution through regular meetings to ensure effective implementation. The most recent survey in 2024 covered all employees in Taiwan and Mainland China across business groups.

Commissioned to a third-party professional institution, the anonymous survey ensured the expression of genuine opinions and achieved a 94% response rate. Evaluation dimensions included job satisfaction, work purpose and

sense of mission, stress indicators, growth and development, communication transparency, and resource support, using a five-point scale to collect feedback. TCC will continue to promote specific actions based on the results to deepen the employee experience. Cement and Environmental Protection Business (Europe-Africa) and NHOA Energy were also included in the Group-wide employee engagement survey for the first time in 2025; Atlante targets execution by March 2026, with plans to expand to all overseas locations in the future.

Engagement Survey Results over the Past Four Years

	2022	2023	2024	2025*
Engagement	90%	93%	87%	82%
Survey Score				
Response Rate	98%	95%	98%	94%

Note 24: TCC has shifted its employee engagement survey to a biennial cycle starting in 2024 (latest data: 2024 for Taiwan and Mainland China). In 2025, the survey scope expanded to Cement and Environmental Protection Business (Europe-Africa) and NHOA Energy sites, with Atlante implementation underway.

Labor-Management Communication

To build harmonious and mutually beneficial labor-management relations, TCC has legally established labor unions and signed labor agreements across global plants. As of 2025, the number of employees joining labor unions or signing collective agreements at global sites reached 49% of the total workforce. To implement the principle of equality, the protection scope of collective agreements and work rules in Taiwan covers all colleagues, ensuring that employees are not treated differently due to their willingness to join a union or differences in conditions, thereby fulfilling the protection of employees' rights. Each site regularly holds labor-management and union meetings to exchange views on operational and labor issues. In addition, to deepen the connection between the Management Team and grassroots colleagues, TCC Operation Headquarters regularly holds Town Hall Meetings, where the Chairman delivers a

keynote speech; these meetings combine on-site real-time questioning with online anonymous Q&A mechanisms to ensure that the opinions of employees at all levels receive immediate and positive responses.

Labor Rights Practices

For more information, please refer to the [ESG Section](#) on the TCC Official Website

Principles

- Wages are not lower than the cost of living
- Regularly communicate with labor representatives regarding working conditions
- Ensure employees receive their entitled paid annual leave
- Track working hours, including overtime management
- Track the gender pay gap
- Provide training or retraining to mitigate the negative impacts of industrial or climate transitions
- Ensure payment of employee overtime pay
- Expand the coverage of social protection for workers

Engagement Survey Items

Job Satisfaction <u>Survey Core</u> <u>I would recommend others to work at the Company if a suitable opportunity arises.</u> <u>I am willing to take on extra work to help the Company succeed.</u> <u>Improvement Plans and Actions</u> → Develops career development paths and growth dialogue mechanisms, and promotes onboarding for new employees. → Promotes the TCC Communication Program to strengthen two-way interaction between supervisors and employees.	Purpose <u>Survey Core</u> <u>I understand how my work contributes to the Company's goals.</u> <u>I clearly understand the overall goals of the Company.</u> <u>Improvement Plans and Actions</u> → Promotes the TCC Culture Navigation Program, organizing town hall meetings and diverse communication activities to enhance consensus on corporate mission and vision.	Well-Being <u>Survey Core</u> <u>My work gives me a sense of accomplishment.</u> <u>Improvement Plans and Actions</u> → Enhances well-being, employee physical and mental health, and sustainable living based on the TCC Well-being Guide.	Stress <u>Survey Core</u> <u>I do not encounter significant obstacles in completing my work.</u> <u>My department/team can handle our work challenges.</u> <u>Improvement Plans and Actions</u> → Promotes the TCC Talent Sustainability Program, introducing employee assistance programs (EAPs) and stress management courses. → Adds health lectures and family-friendly childcare facilities.
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Nature

5.1	TCC Nature Action: TNFD	157
5.2	Forest & Soil Restoration	166
5.3	Marine Restoration	174
5.4	Nature-based Solutions (NbS)	180
5.5	Natural Benefit Sharing	182
5.6	Environmental Education	184

Seven Continents

A work by Danish artist Bjørn Okholm Skaarup, it distills the world into seven animals: the panda (Asia), emperor penguin (Antarctica), badger (Europe), tapir (South America), raccoon (North America), zebra (Africa), and koala (Australia). On shared land they join hands and dance, a feast across regions and cultures. TCC serves life, and the Seven Continents symbolizes dancing with nature, protecting biodiversity and realizing harmony between industry and nature.



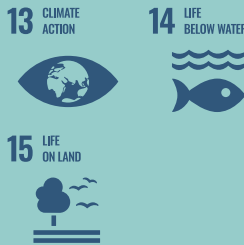


TCC Nature Action: TNFD

Forest & Soil Restoration
Marine Restoration
Nature-based Solutions (NbS)
Natural Benefit Sharing
Environmental Education

Social Inclusion
Appendix

Alignment with SDGs



5.1 TCC Nature Action: TNFD

TCC remains committed to exploring ways for civilization and nature to coexist in harmony, serving life, always in service of life.

—Chairman Nelson An-ping Chang

From cement to energy, and from Taiwan to the world, biodiversity has always been a crucial part of TCC's development. TCC Nature Action aligns with the 2030 actions and 2050 goals of Kunming-Montreal Global Biodiversity Framework from the UN Biodiversity Conference (COP15). In quarries, TCC restores native species and protects Bonelli's Eagle nests in Lisbon. At Hoping EcoPort and Sea of Marmara, cement is used to build habitats for corals and fish. In Gaoshu, Pingtung, the world-class botanical conservation center supported by TCC safeguards the future of rare plants and humanity.

The 2025 Climate Change Conference (COP30) in the Amazon further deepens the link between climate action and biodiversity. TCC believes Earth's balance relies on the restorative power of ecosystems like forests, oceans, and soil. TCC continues to focus on biodiversity initiatives, investing in forward-looking carbon sink and soil research, aiming for Net Positive Impact (NPI) and No Net Deforestation by 2040.

TCC's Terrestrial and Marine Nature and Biodiversity Programs Mapped to 23 GBF Targets

Reducing threats to biodiversity

2 11 Committing to Long-term Forest, Soil, and Marine Restoration and Research Projects [CH 5.2-5.3](#)
CIMPOR Bonelli's Eagle Conservation
OYAK Cement Artificial Reef Project

3 Hoping EcoPort Listed as Taiwan Marine Other Effective Area-based Conservation Measures (OECMs) [CH 5.3](#)

4 13 Dr. Cecilia Koo Botanic Conservation Center (KBCC): Ex-situ Conservation Plan / Pharmaceutical Development [CH 5.5](#)

6 8 Invasive Alien Species White Popinac Removal [CH 5.4](#)

8 Chiayi Aquavoltaics, Yingde Plant Solar Grazing [CH 5.4](#)
Low-carbon Construction Materials Development [CH 2.1](#)

Fulfilling Human Needs through Sustainable Utilization and Benefit Sharing

12 Kaohsiung Shoushan Land Transformation to Detention Basin Park

16 Green Value Chain Alliance / Low-Carbon Construction Pioneers Alliance

Implementation tools and mainstreaming solutions

14 21 Little Tern Conservation Project
Environmental Education_Hoping EcoPort, TCC DAKA, Guigang and Yingde Plants, and Ho-Ping Power Company [CH 5.6](#)

15 Biodiversity Management Plan (BMP)
Regular Monitoring of Quarry and Marine Ecosystems
Release of Task Force on Nature-related Financial Disclosures (TNFD) Report

19 20 Ho-Ping Ark Ecological Program 2.0 [CH 5.2](#)

22 Implementation of Consultation and Consent Rights for Indigenous Peoples

23 Nature-related Project Team is Led by a Woman (the Chief Sustainability Officer)

Note 1: Kunming-Montreal Global Biodiversity Framework available on [Convention on Biological Diversity \(CBD\) website](#).



[Biodiversity Policy](#)
[No Deforestation Commitment](#)



- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature

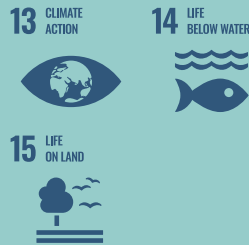
TCC Nature Action: TNFD

- Forest & Soil Restoration
- Marine Restoration
- Nature-based Solutions (NbS)
- Natural Benefit Sharing
- Environmental Education

Social Inclusion

Appendix

Alignment with SDGs



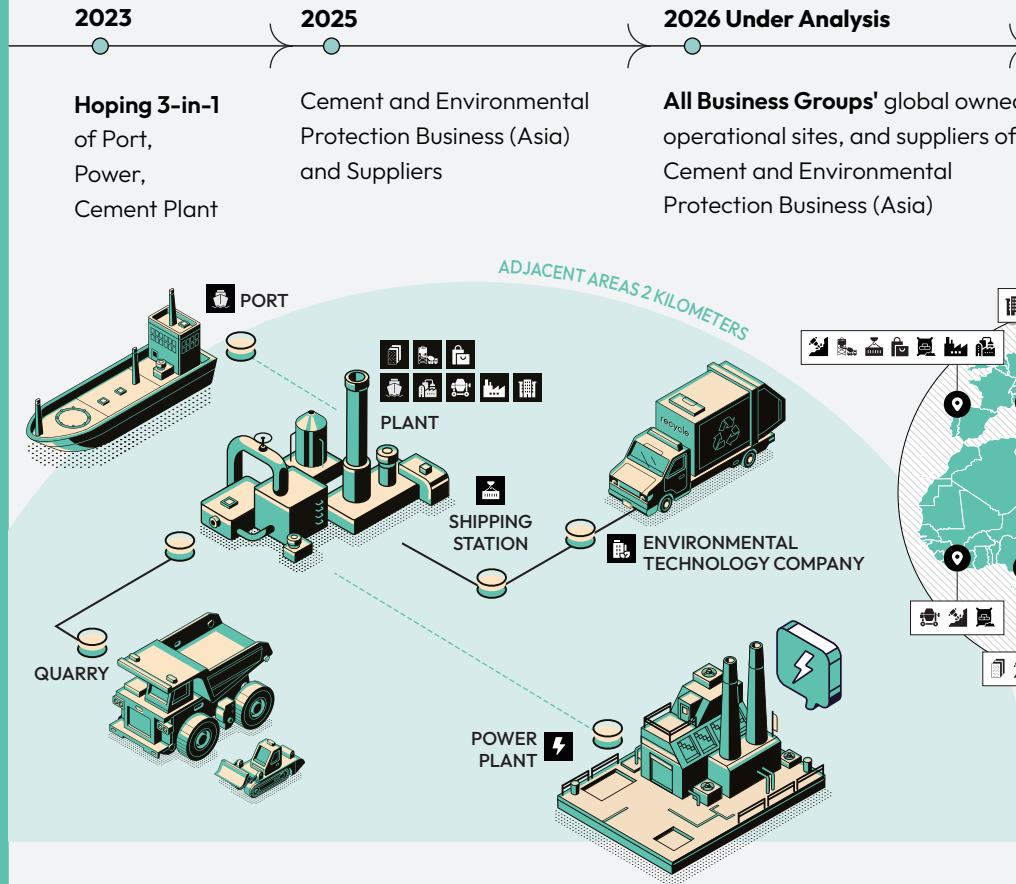
TCC Nature Management

Assessment and Management Conducted in Accordance with International Standards, the Task Force on Nature-related Financial Disclosures (TNFD)



Under the Corporate Sustainable Development Committee, TCC established Biodiversity Group using the TNFD LEAP methodology. This allows TCC to inventory natural capital dependencies and impacts, establish strategies, identify risks, and conduct financial assessments, thereby elevating nature issues to the corporate strategy and risk governance. Since 2023, TCC has aligned nature conservation actions with international TNFD transition plan guidance, and published TNFD REPORT to demonstrate concrete actions and performance in response to global initiatives.

LOCATE



Upstream	Owned Operation	Downstream	Adjacent Area
QUARRY	AGGREGATE PLANT	SHIPPING STATION	POWER PLANT
PORT	CEMENT PLANT	PORT	
	RMC PLANT	ENVIRONMENTAL TECHNOLOGY COMPANY	
	GRINDING STATION		
	OFFICE		
	GYPSUM PLANT		
	DRY-MIX MORTAR PLANT		
	PAPER BAG PLANT		
	RENEWABLE ENERGY SITE		
	BATTERY PLANT		

For 2026 LOCATE analysis results and site areas, please refer to the [ESG section of TCC's official website](#). (expected to be released in September 2026)

2026 Analysis Boundaries:

Owned operational sites:

Global sites of TCC's nine business groups, including Taiwan, Mainland China, Türkiye, Portugal, Cameroon, and Ivory Coast, totaling 390 sites.

Supplier sites:

Cement and Environmental Protection Business (Asia) suppliers on Science Based Targets Network (SBTN) high-risk list.



- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature

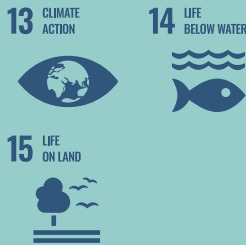
TCC Nature Action: TNFD

- Forest & Soil Restoration
- Marine Restoration
- Nature-based Solutions (NbS)
- Natural Benefit Sharing
- Environmental Education

Social Inclusion

Appendix

Alignment with SDGs



LOCATE

TCC Locate Methodology Description



100% of TCC's operational sites are not situated within World Heritage areas or International Union for Conservation of Nature (IUCN) Category I-IV protected areas

Note2: Taiwan's ecosystem sensitivity analysis areas encompass important biodiversity habitats, including National Parks, Important Wetlands, Coastal Protection Zones, Nature Reserves, Nature Preserves, Wildlife Refuges, Major Wildlife Habitats, Conservation Corridors, and Key Biodiversity Areas (KBAs).

Sites are evaluated based on two major criteria: Criterion I – Natural Sensitivity and Criterion II – Operational Impact.

Criteria	Nature Sensitivity		Criterion II – Operational Impact
	Criterion I-1 – Ecosystem Sensitivity	Criterion I-2 – Species Sensitivity	
Basis	Whether sites are located in or adjacent to ecologically sensitive areas	The number of threatened species potentially occurring around sites	Taiwan sites added analysis based on actual conditions Calculate the vegetation naturalness of the site based on current land use to determine the degree of operational impact on the environment
Taiwan	- Ministry of the Interior's National Land Function Zones - Ministry of the Interior's Marine Resource Areas - Statutorily Protected Areas in Taiwan - Non-statutorily Protected Areas in Taiwan - Disaster Potential Map	Taiwan Biodiversity Network Data	Methodology for Assessing Plant Naturalness in Environmental Impact Assessments
Mainland China	- National Protected Areas - World Database on Protected Areas (WDPA) - Key Biodiversity Areas (KBA) Database - Ramsar Convention (Ramsar) List of Wetlands of International Importance (newly added) - Man and the Biosphere Programme (MAB) World Network of Biosphere Reserves (newly added)	- China Natural Observation Species Distribution Database - IUCN Redlist Species Distribution Database - Mean Species Abundance (MSA)	-
Overseas sites	- World Database on Protected Areas (WDPA) - Key Biodiversity Areas (KBA) Database - Ramsar Convention (Ramsar) List of Wetlands of International Importance (newly added) - Man and the Biosphere Programme (MAB) World Network of Biosphere Reserves (newly added)	- Mean Species Abundance (MSA) - IUCN Redlist Species Distribution Database	-

Definition of Priority /Nature Sensitivity Rated from low to high as L, M, H, and VH

VH

Contains important ecosystems, hosts multiple threatened species, and is located in areas with high naturalness; operations may have negative impacts on nature.

H

Contains important ecosystems, hosts multiple threatened species, and is located in areas with high naturalness.

M

Contains relatively important ecosystems, hosts a few threatened species, and is located in areas with relatively low naturalness.

L

Does not contain important ecosystems, has no distribution of threatened species, and is located in areas with low naturalness.



- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature
 - TCC Nature Action: TNFD
 - Forest & Soil Restoration
 - Marine Restoration
 - Nature-based Solutions (NbS)
 - Natural Benefit Sharing
 - Environmental Education
- Social Inclusion
- Appendix

Alignment with SDGs



EVALUATE-ENCORE

Analysis for Owned Operations, Upstream, Downstream, and Surrounding Areas

In alignment with the TNFD methodology and Sector Guidance, TCC uses the ENCORE (Exploring Natural Capital Opportunities, Risks and Exposure) tool, jointly developed by the UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) and Finance Initiative (UNEP FI), to analyze the potential dependencies and impacts of operational sites on nature at a global scale.



ENCORE Description

Based on various scientific literature and databases—such as Intergovernmental Panel on Climate Change (IPCC) and UNEP—industries are assessed for their levels of impact and dependency on nature, rating them from 1 to 5 (low to high).

ENCORE Analysis for Owned Operations, Upstream, Downstream, and Surrounding Areas

TCC's Operations' Dependencies on Ecosystem Services	Types of Owned Operational Sites				
	Quarry	Cement Plant RMC Plants Grinding Station	Office	Port Area	Power Plant
Flood mitigation services	4	3	1	4	3
Global climate regulation services	4	1	1	1	3
Dilution by atmosphere and ecosystems	3	2			
Rainfall pattern regulation services	5	2	1	1	
Soil and sediment retention services	4	2	1	2	3
Solid waste remediation		3			3
Storm mitigation services	3	3	1	3	2
Water flow regulation services	4	3	1	3	4
Water purification services	5*	3			3
Water Supply	4	3	1	2	4
Natural disaster protection (earthquakes, mudslides, typhoons, etc.)	5	5	5	5	5
Impact of TCC Operations on Ecosystem Services					
Area of freshwater use	4	3		1	3
Area of land use	3	2	3	2	3
Area of seabed use	4*			3	
Disturbances (e.g, noise, light)	4	3	1	1	5
Emissions of GHG	4	4	1	3	5
Emissions of non-GHG air pollutants	4	4	1	2	5
Emissions of nutrient pollutants to water and soil		3	1	3	
Emissions of toxic pollutants to water and soil	4	5	1	2	5
Generation and release of solid waste	2	3	1	2	4
Introduction of invasive species	1				
Other abiotic resource extraction	5				
Volume of water use	3	3	2	2	3

Note 3: For ENCORE results of other operational types (e.g., shipping stations, environmental technology companies, and paper bag plants), please refer to [ESG section of TCC's official website](#).

Note 4: TCC's quarries only require water quality standards for plant restoration and have relatively low dependence on water quality. Moreover, all quarries are located on land and do not affect seabed usage.



Overview
Governance
Carbon Reduction
Energy Transition
Employee
Nature

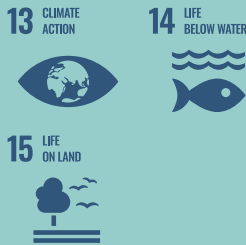
TCC Nature Action: TNFD

Forest & Soil Restoration
Marine Restoration
Nature-based Solutions (NbS)
Natural Benefit Sharing
Environmental Education

Social Inclusion

Appendix

Alignment with SDGs



LOCATE

EVALUATE-ENCORE

COMPREHENSIVE ANALYSIS



Hoya carnosa

Nature is a prerequisite for TCC's operational development

TCC prioritizes the management of sites with VH natural sensitivity and adopts corresponding databases as the basis for determination according to local conditions.

Taiwan sites integrate national land functional zones and biodiversity network data, while combining the naturalness survey methods of environmental impact assessments to add operational impact for analysis. Mainland China and overseas sites utilize international databases such as WDPA, Convention on Wetlands, World Network of Biosphere Reserves, and IUCN species distributions. Since

Through engagement, TCC guides suppliers to deepen ecological thinking, align with the corporate philosophy, and demonstrate a commitment to mutual benefits, thereby establishing a foundation of trust for future actions.



Yang Sheng-hsien & Liu You-kai
TCC Supply Chain Management Department

VH sites are located in close proximity to critical ecosystems and contain threatened species, poor management can trigger environmental resilience degradation, worsening natural disaster impacts and operational losses. Located mainly in upstream quarries and owned plants, TCC's VH sites are cross-evaluated with ENCORE level 5 operational types to map dependencies and impacts on natural capital.

Concurrently, TCC formulates adaptation strategies and measures to minimize impacts and promote biodiversity restoration. Reserves, and IUCN species distributions.

Supplier Nature-related Risk Assessment

TCC used the high-impact list of SBTN and the proportion of procurement amount as screening principles to target raw material suppliers of limestone and aggregates for Locate analysis. The results show that 10 suppliers are located in sensitive ecosystem areas such as protection forests and river zones, with multiple threatened species potentially distributed within their operational scopes. In October 2025, TCC selected 4 of these limestone suppliers to initiate engagement, explaining the TCC's emphasis on biodiversity, informing them of the potential impacts of their operational sites on ecological protection areas, and further conducting on-site visits. The suppliers also shared on-site ecological observations and actual restoration actions, jointly discussing feasible mitigation measures and future collaboration directions to reduce potential impacts upstream in the value chain.



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Nature

TCC Nature Action: TNFD

Forest & Soil Restoration

Marine Restoration

Nature-based Solutions (NbS)

Natural Benefit Sharing

Environmental Education

Social Inclusion

Appendix

Alignment with SDGs

13 CLIMATE ACTION

14 LIFE BELOW WATER

15 LIFE ON LAND



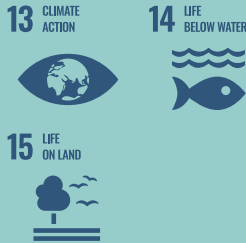
Location of VH Sites	Locate	Evaluate(ENCORE)	Comprehensive Analysis Results	Adaptation Methods
Hoping Quarry Taibaishan Quarry Shoushan Land Taiwan	Hoping and Taibaishan Quarry are adjacent to coastal protection and land protected areas; Shoushan land is adjacent to Shoushan National Park, featuring species such as pangolins, brown wood owls, etc.	Quarry Relies on rainfall regulation services to avoid floods and mudslides; quarrying operations will alter land use, affecting biodiversity.	Quarrying destroys environment, increases the risk of debris disasters in quarries, and shortens their service life.	All quarries implement a Biodiversity Management Plan (BMP). Collaborating with academia, TCC uses scientific surveys for plant restoration and sustainable resource use (CH 5.2).
Yingde Quarry (Dapashan and Qingshuijing) Shaoguan Beihushan Quarry Mainland China	The Yingde and Shaoguan quarries are adjacent to Black Tea Valley Forest Nature Park and Huashuihan Nature Reserve, respectively, with potential distributions of endangered species such as the Chinese giant salamander, golden coin turtle, etc.			
Limestone Suppliers Taiwan	The suppliers’ locations are adjacent to coastal protection areas, security forests, and rivers, with potential distribution of protected animals such as the styan’s bulbuls, and fairy pittas, etc.		Quarrying damages the ecological environment, increases the risk of debris disasters, and leads to the decline of coastal protection functions.	TCC communicates ecological impacts to suppliers, verifying their environment assessment compliance, and partners with authorities for restoration and ongoing mitigation talks.
Zhongli RMC Plant Taiwan	Adjacent to nationally important wetlands, the surrounding area features abundant natural forests and low development. Potential habitats include protected species such as plumbeous water snakes, and Taipei grass frogs, etc.	RMC Plant Operations may generate GHG emissions and water pollution.	Highly alkaline wastewater with high suspended solids can cause long-term soil alkalization and water pollution in sensitive areas. Beyond increasing equipment maintenance and water extraction costs, these discharges damage ecosystems and weaken environmental resilience.	Implementing environmental management systems, the plants ensure regulatory compliance to minimize impacts. Both Zhongli and Yingde plants achieved zero process wastewater discharge and recycled rainwater. Zhongli also conducted third-party monitoring, while Yingde introduced multi-stage combustion to reduce air pollution.
Yingde Cement Plant Mainland China	Adjacent to Black Tea Valley Forest Nature Park, with potential distribution endangered species such as the Chinese giant salamander, golden coin turtle, etc.	Cement Plant Operations may cause air and water pollution.		



- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature
- TCC Nature Action: TNFD
- Forest & Soil Restoration
- Marine Restoration
- Nature-based Solutions (NbS)
- Natural Benefit Sharing
- Environmental Education

- Social Inclusion
- Appendix

Alignment with SDGs



0403 Hualien Earthquake:
Nature-related Risk
and Resilience Assessment

Origin Time: 2024/04/03 07:58:09 (GMT+08:00)
Lat:23.77N Lon:121.67E Mag:7.2 Depth: 15.5 km

Source: National Science and Technology Center for Disaster Reduction (NCDR)

Hoping 3-in-1 of Port, Power, Cement Plant:
VH Site Highly Dependent on Natural Ecosystem Services

Introducing TNFD LEAP in 2023, TCC identified its Hoping 3-in-1 of Port, Power, Cement Plant as a nature-sensitive core site, assessing natural resource dependencies and impacts via ENCORE and practical experience:

Dependency shows "Natural disaster protection" reached level 5, indicating high dependence.

Impact identifies "Other abiotic resource extraction ", "Emissions of non-GHG air pollutants", "Emissions of GHG ", and "Disturbances" as core issues, indicating the potential impact on surrounding environment and habitats.

Financial Impacts

By 2025, sites' losses reached NT\$2.2 billion. Hoping Cement Plant repairs will continue into 2026.

Nature and Biodiversity Expenditures

In 2025, TCC invested NT\$57.71 million in nature protection actions, including diverse eco restoration, Hoping Eco-Ark, building long-term natural resilience.

Aspect	Impact	Response Measure
Natural Impact	Other abiotic resource extraction	Compared to traditional open-pit quarrying, Hoping Quarry adopts "vertical shaft quarrying" and long-term restoration for soil and water conservation. Quarry's structure remained stable without collapse during the strong earthquake.
	Emissions of non-GHG air pollutants	Via EMS, smart monitoring, low-carbon equipment, and enclosed corridor transportation for dust control, the plant achieves zero wastewater discharge to minimize operational impacts.
	Emissions of GHG	
Operational Impacts	Disturbances	
	Interruption of External Roads	After the earthquake blocked roads, TCC activated emergency responses and backup routes, ensuring personnel safety. Operations maintained via shifts during month-long repairs, while TCC formally applied to construct a permanent backup quarry road.
	Post-earthquake Recovery and Environmental Monitoring	Following earthquake damage, TCC completed repairs and seismic retrofitting across these sites to enhance disaster resistance. Post-disaster surveys confirmed the port area maintains healthy coral habitats, demonstrating natural resilience.

Demonstrating Environmental Resilience and Adaptation Capabilities

Daily nature-risk management enables TCC to respond rapidly to disasters. In 2026, Hoping Plant will introduce ISO 22301, advancing post-earthquake repairs and drills to strengthen resilience while re-identifying physical risks like earthquakes and slope stability. Concurrently, TCC formulated a nature management plan, integrating quarry and coral data to promote NbS and OECM, balancing ecological conservation with operational resilience and enhancing adaptation capabilities.

For more information, please refer to past [TNFD REPORTs](#) and [ESG section of TCC's official website](#).



- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature

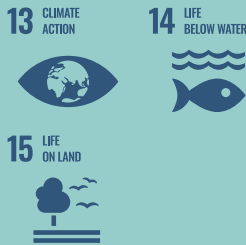
TCC Nature Action: TNFD

- Forest & Soil Restoration
- Marine Restoration
- Nature-based Solutions (NbS)
- Natural Benefit Sharing
- Environmental Education

Social Inclusion

Appendix

Alignment with SDGs



SBTN AR3T

TRANSFORM

- Recycles waste and uses agricultural residues (cocoa shells, corn stalks) as alternative fuels to cut carbon.
- Hoping EcoPort Obtained Marine OECMs certification.
- Shoushan land was transformed into a trail and detention basin park for recreation and flood control.
- Promotes NbS and ecological construction, transforming industrial spaces into environmental education bases.
- OYAK Cement's Beypazarı solar project completed an environmental assessment, proposing environmental mitigations.

REGENERATE
RESTORE

- Taiwan and Mainland quarries plant native species to restore soil health and increase carbon sinks.
- Connecting plants with surrounding mountains establishes ecological corridors, reducing habitat fragmentation for species migration.
- Restoring neighboring water bodies creates eco-ponds, rain gardens, and drip irrigation systems.
- Hoping EcoPort added land crab-friendly corridors in wetlands, connecting ocean and land as a habitat relay station.
- CIMPOR monitors Bonelli's Eagle nests in Alhandra quarry to conserve endangered bird species.
- OYAK Cement deployed 100 artificial reefs and released juvenile fish to restore marine ecology.

REDUCE

- Deployed electric mining trucks to cut emissions, noise, and air pollution, reducing disturbance.
- Removing invasive alien species reduces ecological harm; Hoping and Suao plants convert white popinac into biomass fuel.
- Separates rainwater and sewage to reduce impacts on local water systems.
- Plants use cement kilns to dispose of sludge, domestic waste, and other wastes, reducing potential environmental pollution.
- Cement, battery plants, and Ta-Ho Maritime install automatic monitoring and optimize fuel to mitigate air pollution.

AVOID

- No TCC sites quarry in global national protected areas; all Taiwan and Mainland China quarries passed environmental impact assessments.
- Enclosed quarry corridors prevent raw material dust, while ecological buffer zones protect surrounding natural areas from construction.
- Collecting cooling water and rainwater, plants implement zero wastewater discharge.
- Bans herbicides and pesticides, using manual mowing or solar grazing.
- Evaluates suppliers' biodiversity impacts and response measures.
- Installed AI fire control and warning systems to prevent emergency environmental damage.



SCIENCE BASED
TARGETS NETWORK
GLOBAL COMMONS ALLIANCE



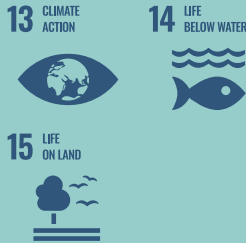
What Is SBTN?

The SBTN, built on the Science Based Targets initiative (SBTi), is a network of 80+ NGOs and business groups—including CDP, WRI, WWF, and IUCN working with companies to drive positive outcomes for nature through alignment with global ecosystem initiatives.



- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature
 - TCC Nature Action: TNFD
 - Forest & Soil Restoration
 - Marine Restoration
 - Nature-based Solutions (NbS)
 - Natural Benefit Sharing
 - Environmental Education
- Social Inclusion
- Appendix

Alignment with SDGs



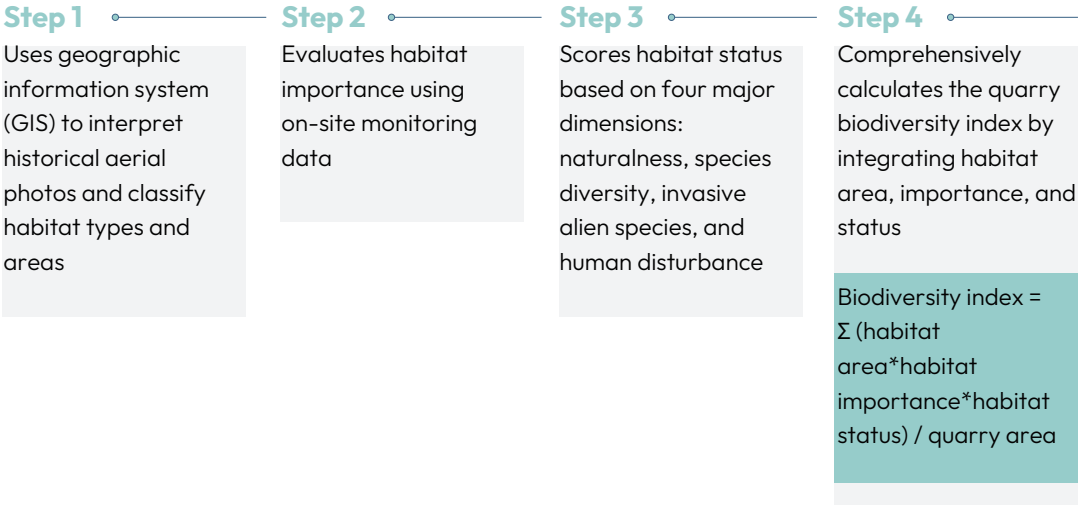
Setting 2040 Net Positive Impact

TCC's Taiwan quarries have initiated long-term restoration plans since 2016. To assess whether restoration efforts have a positive impact on nature, scientific analyses of ecological trends since the start of quarrying were conducted, thereby setting a 2040 net positive impact (NPI) target.

Adopted Methodology: Net Impact Assessment (NIA) references the "GCCA Sustainability Guidelines for Quarry Rehabilitation and Biodiversity Management" and the "WBCSD Net Impact Assessment Methodology for the Cement Sector"⁵, analyzing in 3–4 year intervals.

Analysis Boundaries: Hoping Quarry and Taibaishan Quarry, which will gradually expand to global quarries.

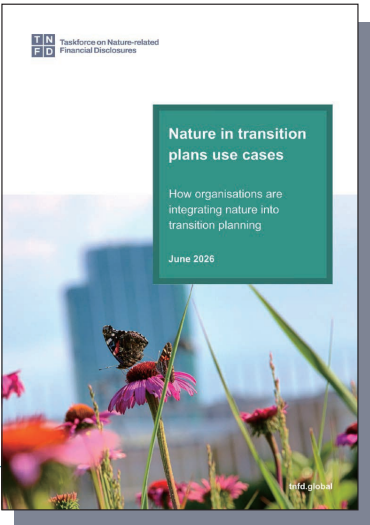
Analysis Steps:



Analysis progress: Completed analysis of mining start year 2002 and 2008–2022; will subsequently conduct an in-depth analysis of the 0403 strong earthquake's impact on the differences before and after in quarry ecology. The NIA trend chart is expected to be published on the [TCC official website's ESG section](#).

Note 5: For more information, please refer to the GCCA Sustainability Guidelines for Quarry Rehabilitation and Biodiversity Management, and the World Business Council for Sustainable Development (WBCSD) Methodology for the Net Impact Assessment of Biodiversity in the Cement Sector.

ACTION SPOTLIGHT



Hoping Quarry Enhancement and Empowerment Project Selected as a TNFD Transition Plan Case Study

To accelerate ecological restoration at Hoping Quarry's 1,015-meter area, TCC launched a team empowerment program in 2024, engaging experts to optimize methods and developing a dedicated manual. This initiative aligns with "Governance" skills and competencies under nature transition planning, and was selected as a demonstration case in the TNFD "Nature in transition plans use cases" published in June 2026.

Subheading TCC Implements It's Now for Nature Pulse Transition Pathway

The October 2025 "It's Now for Nature Pulse" report notes a global gap in comprehensive nature disclosure. As an initiative partner, TCC actively implements the TNFD framework and LEAP methodology across operations and suppliers, and was invited to share its practical results within the report.

It's Now for Nature

"Nature is the Sine Qua Non, an essential element. By openly disclosing our dependencies on nature, we can prioritize the most impactful actions. As well as helping us to proactively manage risks, this has helped turn our nature-positive efforts into a competitive edge."

Nelson An-ping Chang
Group CEO, TCC Group Holdings

Discover more in the It's Now for Nature Pulse.



- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature

TCC Nature Action: TNFD

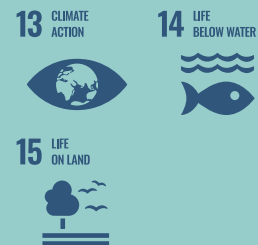
Forest & Soil Restoration

- Marine Restoration
- Nature-based Solutions (NbS)
- Natural Benefit Sharing
- Environmental Education

Social Inclusion

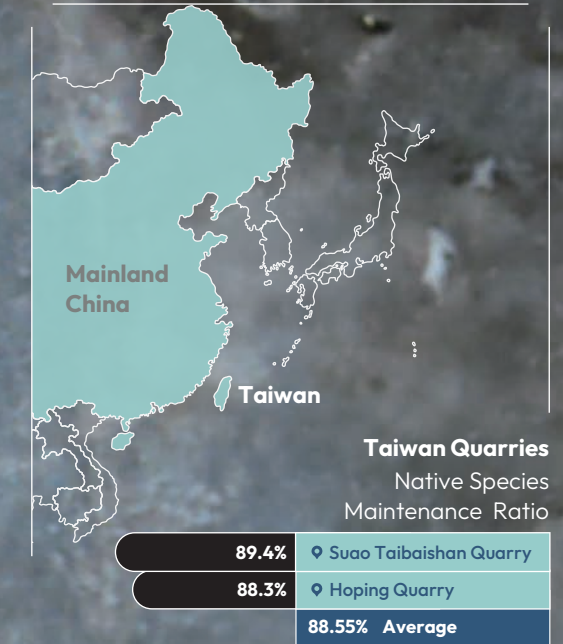
Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

5.2 Forest & Soil Restoration



Rehabilitation
and Revegetation Rate



TCC KEY FACTS

Biodiversity Management Plan (BMP)

| Cement and Environmental Protection Business (Asia)

Quarry Rehabilitation Plan (QRP)

| Cement and Environmental Protection Business (Asia)

| Cement and Environmental Protection Business (Europe-Africa)

Coverage
Rate

100%

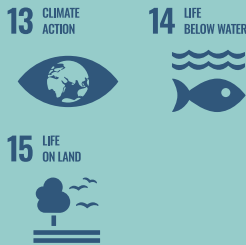


Taiwanese endemic plant *Dischidia formosana*, photographed at Hoping quarry



- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature
- TCC Nature Action: TNFD
- Forest & Soil Restoration
- Marine Restoration
- Nature-based Solutions (NbS)
- Natural Benefit Sharing
- Environmental Education
- Social Inclusion
- Appendix

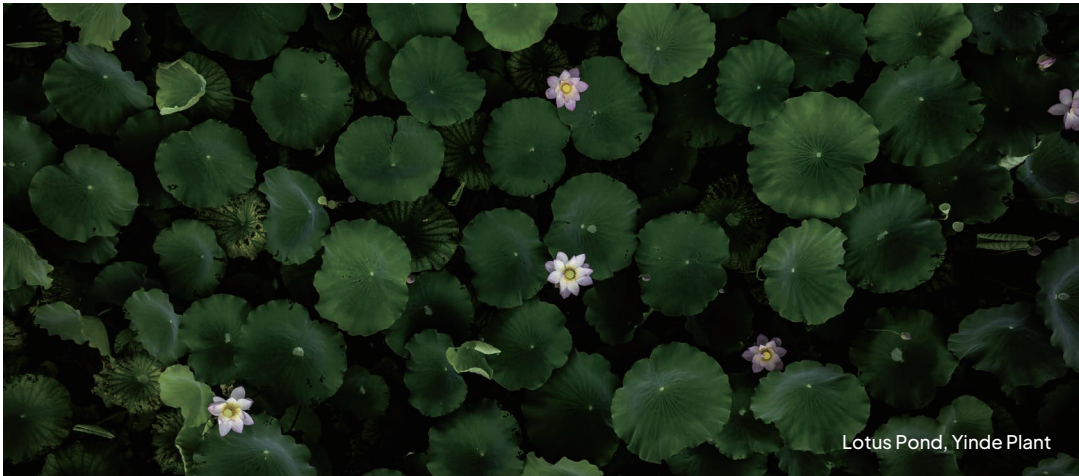
Alignment with SDGs



Forest Restoration

Quarries are the core of the cement industry. TCC strives for minimal environmental impact during quarrying and ensures that sites are restored to nature after operations cease.

TCC quarries adopt an ecosystem restoration model, prioritizing the Cement and Environmental Protection Business to formulate a Biodiversity Management Plan (BMP). Global quarries have established a Quarry Rehabilitation Plan (QRP), aiming to achieve the Nature Positive goal.



Cement and Environmental Protection Business (Asia) — Taiwan Quarries	Cement and Environmental Protection Business (Asia) — Mainland China Quarries	Cement and Environmental Protection Business (Europe-Africa)
- Adheres to the principle of simultaneous quarrying and rehabilitation - Targets native species for rehabilitation - Collaborates with the Dr. Cecilia Koo Botanic Conservation Center (KBCC) and professional units to establish nurseries and hardening facilities at plants to cultivate local native species - Increases vegetation diversity through natural succession	- Upholds the principle of "restoring farmland to farmland, forest to forest," and formulates quarry geological environment protection and land reclamation plans - Responds to the national standard of "General Principles for Assessment of Green Mine" to build "new green quarries" - Adopts stepped quarrying to minimize environmental impact, uses vegetation bags made of naturally degradable materials to stabilize slopes, and coordinates with hydroseeding methods for greening - Actively promotes rehabilitation in closed quarry areas, including slope adjustment, topsoil preparation, soil covering, and tree seedling planting	- Follows the biodiversity roadmap of CEMBUREAU - Refers to GCCA's Sustainability Guidelines for Quarry Rehabilitation and Biodiversity Management and the EU's Nature Restoration Regulation  Actively plans habitat rehabilitation measures, and targets to formulate quarry biodiversity management guidelines based on the rehabilitation results of the Antalya Plant in Türkiye, and the biodiversity monitoring plans of the Darica Plant and Bolu Plant.



Ecological Recovery Wheel and Biodiversity Index Survey: Tracking Restoration Effectiveness

TCC established the Ecological Recovery Wheel based on the Society for Ecological Restoration (SER) methodology, using seven indicators: canopy cover, non-pioneer species, stratification, vegetation height, regeneration species, biodiversity index and important value index of indigenous species (IVI). The 2025 assessment covers Hoping and Taibaishan quarries, with tracking to expand to other sites.

Additionally, biodiversity surveys across six major biological taxa have been conducted since 2021 for long-term management.

The Results: Hoping Quarry exhibited steady growth in long-term succession indicators like vegetation height and biodiversity index. Meanwhile, Taibaishan Quarry utilized diverse afforestation strategies to stabilize the restoration area environment within a shorter timeframe.

Though adopting different approaches, both quarries significantly improved biodiversity.

Note 6: The 2026 Ecological Recovery Wheel indicator data will be disclosed in the [ESG section of the TCC official website](#).



- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature

TCC Nature Action: TNFD

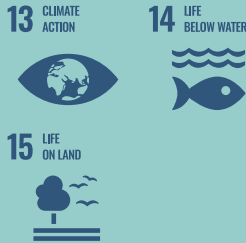
Forest & Soil Restoration

- Marine Restoration
- Nature-based Solutions (NbS)
- Natural Benefit Sharing
- Environmental Education

Social Inclusion

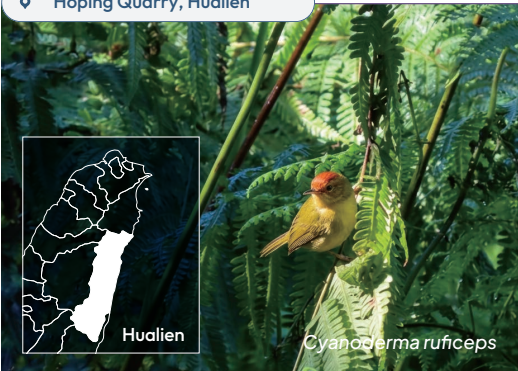
Appendix

Alignment with SDGs



Native Plant Rehabilitation

Hoping Quarry, Hualien



Rehabilitation Starting Point:

Launched a long-term rehabilitation plan since 2016

Third-Party Monitoring:

Conducted quarterly since 2003

Team:

Hoping Cement Plant and Ho Sheng Mining Co., Ltd.

Rehabilitation Method:

Assisted natural regeneration, accelerating the rehabilitation process with less intervention

Habitat Type:

Mainly primary and secondary forests

To ensure rehabilitation effectiveness, the team cultivates seedlings in stable, low-altitude nurseries, transplanting them to harsher quarries once adapted to boost survival rates. Meanwhile, the team collects fruits from local native plants to raise seed-grown seedlings for replanting, thereby maintaining genetic diversity within the quarry area.

Wind-Resistant, Drought-Tolerant, and Site-Specific Rehabilitation

Taibaishan Quarry, Suao



Rehabilitation Starting Point:

Initiated non-rapid rehabilitation since 2017

Third-Party Monitoring:

Conducted semi-annually since 2003

Team:

Professor Ji-Wei Huang, Sustainable Landscape Research Laboratory, National Ilan University

Rehabilitation Method:

Miyawaki Method, achieving environmental protection through high-density planting of multiple species

Habitat Type:

Shrubland and secondary forest, with a landscape characterized by highly water-retention-deficient karst topography

Taibaishan Quarry uses unique solar-powered drip irrigation system, windbreak nets, and rainwater harvesting to increase water availability. To boost soil fertility and plant growth, barren soil is mixed with chicken manure, spent mushroom substrate and organic matter. Increasing planting density further enhances the plants' resistance to strong winds.

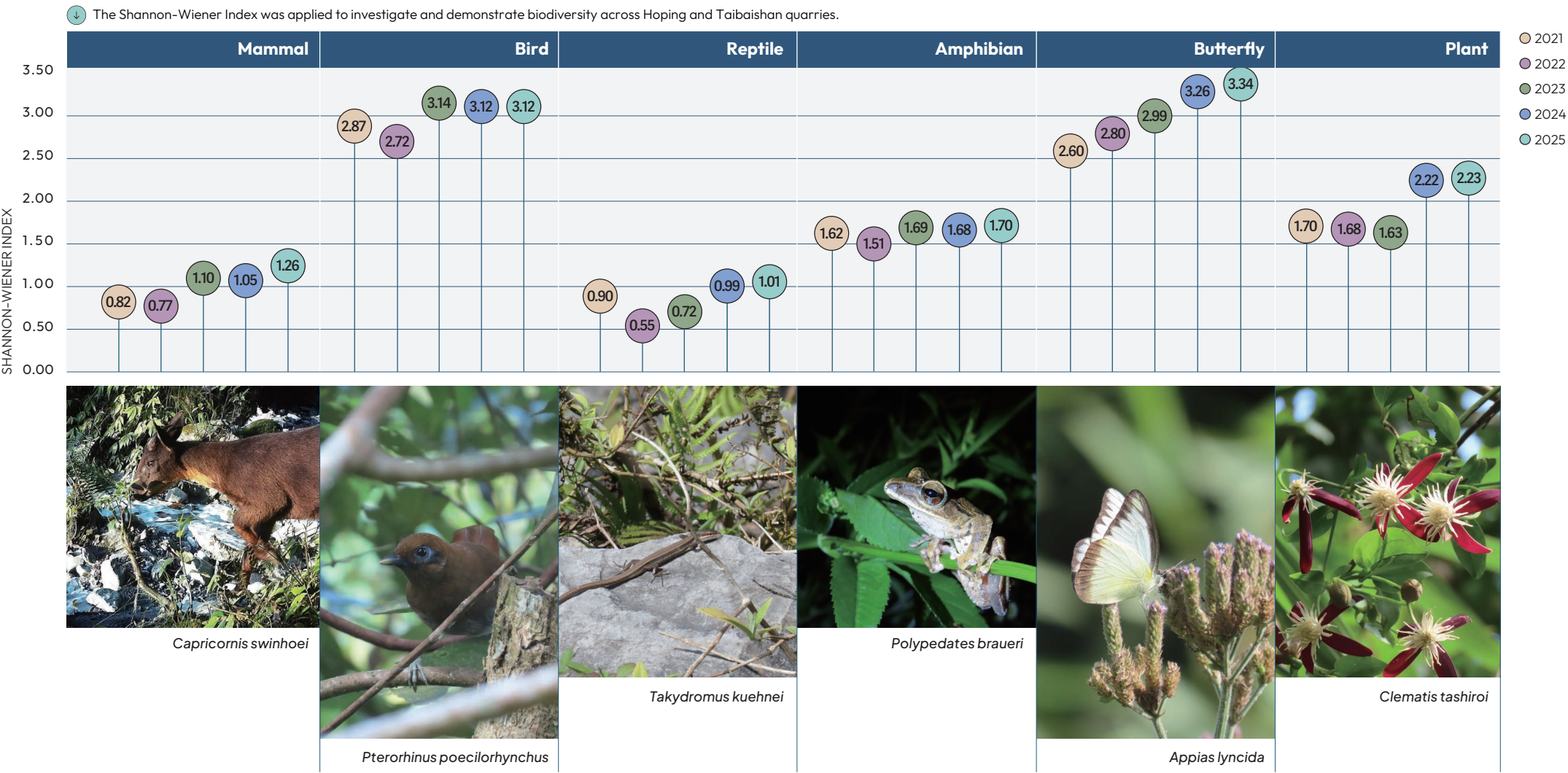
OYAK Cement

Quarries, Türkiye



Since halting production in 2017, the Antalya Plant has replanted over 13,000 trees and installed 12 km smart drip irrigation and wildlife water stations. The Darıca and Bolu plants launched biodiversity monitoring in 2025, surveying vascular plants, mammals, birds, amphibians, and reptiles alongside habitat features and conservation status. These results will guide specific actions, serving as the foundation for quarry rehabilitation across OYAK Cement.

Biodiversity Index





- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature

TCC Nature Action: TNFD

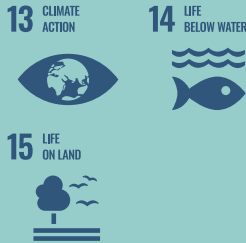
Forest & Soil Restoration

- Marine Restoration
- Nature-based Solutions (NbS)
- Natural Benefit Sharing
- Environmental Education

Social Inclusion

Appendix

Alignment with SDGs



ACTION
SPOTLIGHT



CIMPOR Joins Forces
with Government and Academia
to Protect the Endangered Bonelli's Eagle

The Bonelli's Eagle, an endangered species in Portugal, faces threats such as habitat degradation, power line collisions, and illegal hunting. A breeding pair has established a nest within CIMPOR's Bom Jesus quarry, providing an opportunity to integrate biodiversity conservation into quarry operations. In 2024, CIMPOR joined the EU LIFE LxAquila Project, partnering with public

authorities, the Portuguese Society for the Study of Birds (SPEA), academia to support habitat protection and species recovery. In 2025, CIMPOR incorporated biodiversity protection into quarry management, implementing measures to safeguard the nesting area and reduce disturbance during breeding periods. Key conservation measures include:



Established a 500-meter buffer zone around the nesting site, whose location is kept confidential, and implemented seasonal restrictions during the breeding season (December–June), with regular monitoring conducted in partnership with SPEA.

Implemented cliff protection and power line insulation measures to reduce risks from rockfalls and electrocution.

Restored water sources, native vegetation, and key food-chain species to enhance habitat suitability.

Partnered with SPEA under a land stewardship model to support habitat restoration and transform the quarry into a biodiversity conservation site.



National-Level Green Quarries

Mainland China



8

National-Level
Green Quarries

- 1 Jurong Xiguoding Quarry
- 2 Chongqing Niubeiji–Shujingpo Quarry
- 3 Anshun Hejiayuan Quarry
- 4 Yingde Qingshuijing Quarry
- 5 Yingde Longweishan Quarry
- 6 Guigang Huanglian Bayangshan Quarry
- 7 Guigang Huanglian Heshangshan Quarry
- 8 Guigang Huanglian Yishan Quarry

8

Provincial or Autonomous
Region-Level Green Quarries

- 1 Yingde Dapashan Quarry
- 2 Yingde Hongguang Quarry
- 3 Jingzhou Tongle Quarry
- 4 Gangan Shujingpo Quarry
- 5 Shaoguan Beihushan Quarry
- 6 Guigang Hongyuan Quarry
- 7 Liaoning Limestone Quarry
- 8 Xuyong Huangcaoping Limestone Quarry



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Nature

TCC Nature Action: TNFD

Forest & Soil Restoration

Marine Restoration

Nature-based Solutions (NbS)

Natural Benefit Sharing

Environmental Education

Social Inclusion

Appendix

Alignment with SDGs

13 CLIMATE ACTION



14 LIFE BELOW WATER



15 LIFE ON LAND



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

Soil Research

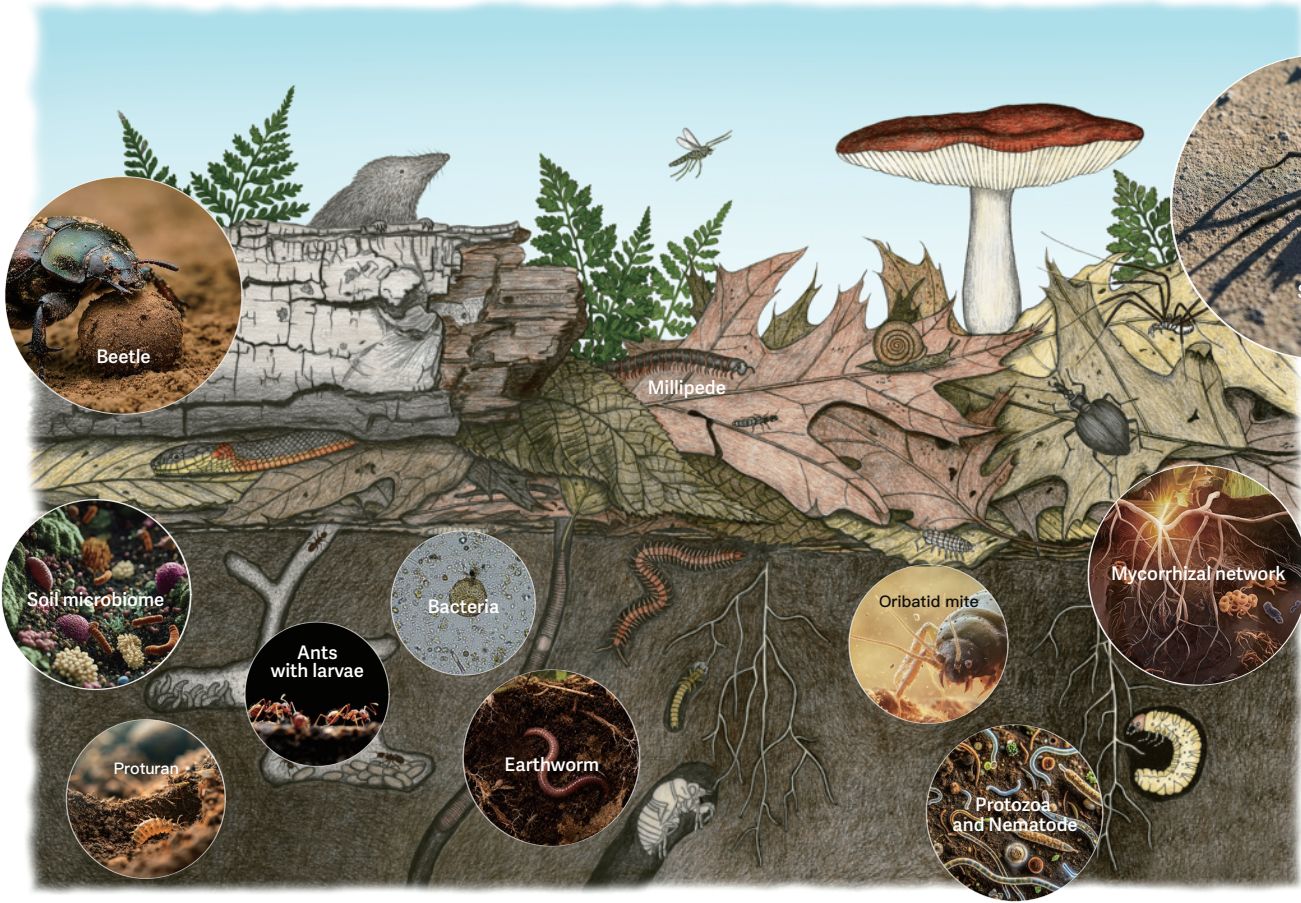
Soil is the most important terrestrial carbon sink, absorbing 25% of human greenhouse gas emissions annually, with 60% of biodiversity living underground. However, human activities cause soil degradation and biodiversity loss. During forest restoration at the quarries, TCC discovered that soil cannot return to its original state simply by backfilling or retaining topsoil,

because soil properties are inherently disturbed during quarrying. To improve restoration outcomes, TCC initiated in-depth soil research in 2022.

TCC's 2024 preliminary survey at Hopping Quarry showed that after 16 years of multi-phase restoration, soil Total Organic

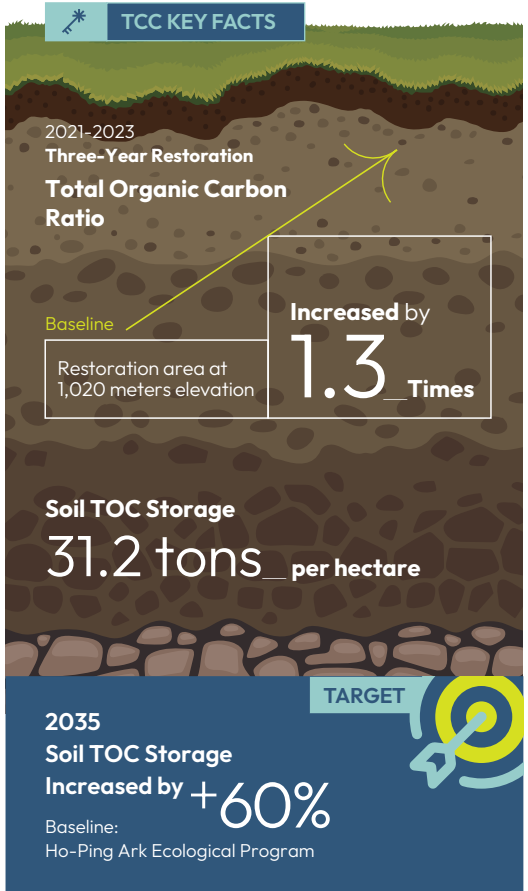
Carbon (TOC) storage exceeded those of urban parks. Notably, topsoil backfilling and vegetation restoration at 1,060 meters elevation (restored for 3 years) resulted in TOC storage 1.3 times higher than the 1,020 meters elevation area. Furthermore, after over a decade of vegetation restoration, typical soil fauna like earthworms and native nematodes have emerged, indicating

that TCC's long-term efforts are gradually recovering soil ecosystem services. The second-phase survey targets completion by August 2026. Because soil TOC accumulates over long periods with minimal short-term fluctuations, TCC plans to conduct surveys every five years to scientifically verify effectiveness.



Soil teems with life—from ants and earthworms to springtails, pseudoscorpions, and countless microbes essential to soil health.

Reference:
Life in the Soil:
A Guide for Naturalists and
Gardeners. (James B. Nardi.,
2007)





Overview

Governance

Carbon Reduction

Energy Transition

Employee

Nature

TCC Nature Action: TNFD

Forest & Soil Restoration

Marine Restoration

Nature-based Solutions (NbS)

Natural Benefit Sharing

Environmental Education

Social Inclusion

Appendix

Alignment with SDGs

13

CLIMATE ACTION



14

LIFE BELOW WATER



15

LIFE ON LAND



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

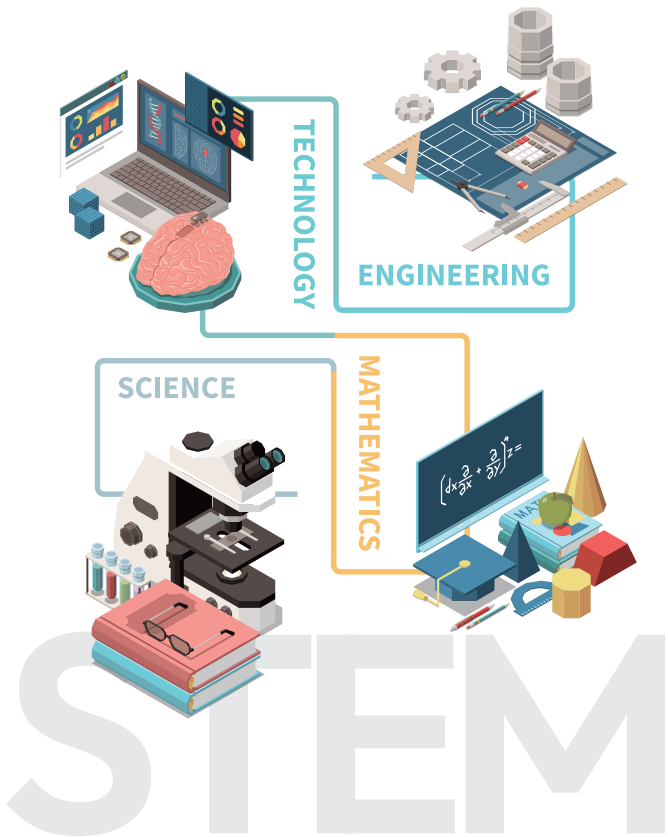
Soil Talent Development

TCC aims to inspire young students to enter soil science. Since 2024, TCC has established the Soil Award and organized the Soil Camp to encourage academic research. The 2025 Soil Camp, themed "Earthworm Class Reunion," used this common organism as an entry point to introduce participants to the underground world

of soil organisms, from millipedes and spiders to lesser-known pseudoscorpions and fungi. Targeting rising high school sophomores, the camp encourages young women to enter STEM fields by implementing a one-third minimum female quota.

The Soil Award represents an academic breakthrough, inspiring professionals to continuously cultivate and pass on their expertise. The 2024 Gold Award winner, Hsiang-Yun LIN, who discovered a new pseudoscorpion species unseen in Taiwan for over 80 years, now fosters grassroots science

education as a student teacher. Invited as a lecturer for the 2025 Soil Camp, she shared her journey of soil enlightenment, transforming her passion for the land into inspiration for future generations.



2025 TCC "Earthworm Class Reunion" AI Summer Camp:

A Shovel of Soil, a Sustainable Future
— A Dialogue Between Tech and Earth



TCC offered a specialized course exploring AI and land management, progressing from AI fundamentals to practical environmental monitoring. Beyond theoretical cases, hands-on sessions led students to operate simple monitoring instruments and use AI to interpret soil moisture data for a practical firsthand experience. Through this three-day empowerment, students proactively integrated

their learning with external data to propose innovative, AI-driven soil management concepts on the final presentation day. Ultimately, the course inspired youth to view AI not just as a data tool, but as a critical solution for environmental challenges and land sustainability.



- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature

TCC Nature Action: TNFD

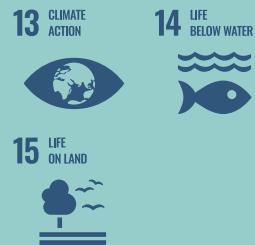
Forest & Soil Restoration

- Marine Restoration
- Nature-based Solutions (NbS)
- Natural Benefit Sharing
- Environmental Education

Social Inclusion

Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT



Ho-Ping Ark Ecological Program 2.0

TCC launched the soil-centric Ho-Ping Ark Ecological Program in 2022 and targets its 2.0 edition in 2026. Focusing on soil talent development and soil trials, the program utilizes proprietary sites for zoned ethnobotanical restoration on limestone terrain, alongside soil health and biodiversity research, integrating



scientific expertise with traditional ecological knowledge to create soil remediation solutions.

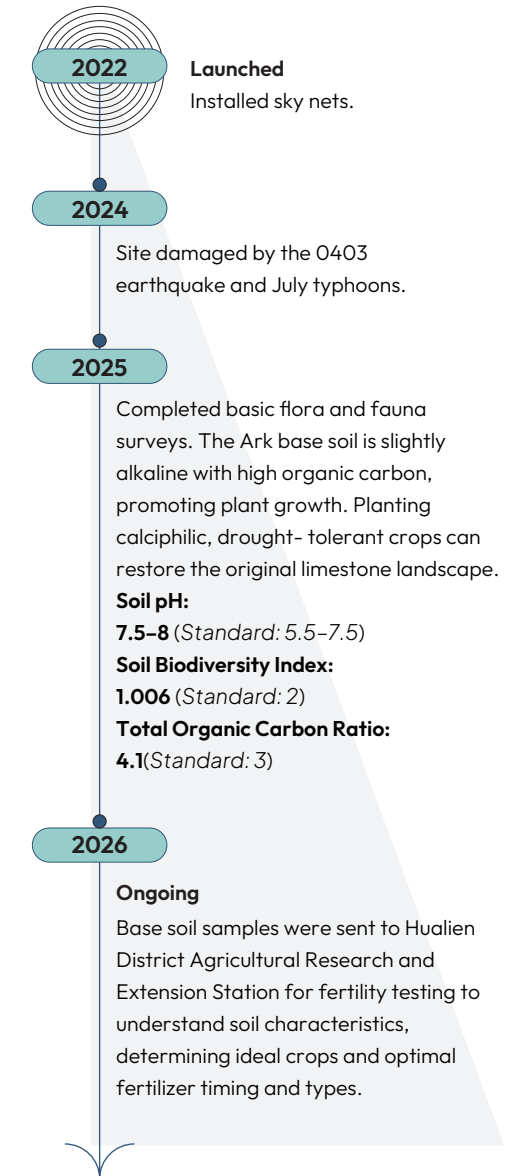
Focus 1 — Soil Talent Development: Combining Traditional Ecological Knowledge to Restore Soil and Knowledge

TCC plans to collaborate with key indigenous schools in eastern Taiwan or local Hoping tribal groups. Integrating university internships with just transition principles, this initiative will establish a green skills training base to cultivate professional talents, continuing and innovating indigenous agricultural wisdom. Through agroforestry and ecological mutualism, TCC will intercrop and rotate traditional crops with native plants to enhance soil activity and productivity. Based on Truku records, native species like *Schefflera octophylla* and *Rhus chinensis* will be selected as alternative configurations.

Theme 2 — Soil Trials: Creating Nature-based Resilience Through Field Experiments and Verification

TCC will collaborate with the Taiwan Forestry Research Institute to conduct ethnobotanical restoration trials on-site, regularly monitoring soil pH and physical properties. Simultaneously, controlled laboratory trials will evaluate combining cement industry materials with biochemical mechanisms for substrate improvement. This initiative will gradually establish a long-term soil health database and develop climate-resilient, recycled products, aligning with international Nature Positive trends.

Ho-Ping Ark Ecological Program History





Overview

Governance

Carbon Reduction

Energy Transition

Employee

Nature

TCC Nature Action: TNFD

Forest & Soil Restoration

→ **Marine Restoration**

Nature-based Solutions (NbS)

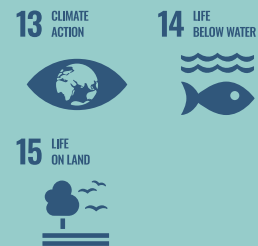
Natural Benefit Sharing

Environmental Education

Social Inclusion

Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

5.3 Marine Restoration

Giant Clam Survey

3 species
Individuals 98



Fish and Shellfish Survey

217 species
Individuals 11,091



OYAK Cement Artificial Reef

Sea of Marmara, Türkiye



TCC KEY FACTS

Coral Restoration Project

2025 Newly Added Coral Seedlings

+1,145 seedlings

Number of Restored Corals

+589 seedlings

Accumulated as of 2025/12/31



Coral Survival Rate

82.96%

2024-2025

Second Phase Coral
Planting Project
with Grating Plates

Coral Area Growth Rate

142.10%

Biodiversity of Hoping EcoPort's coral reef ecosystems



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Nature

TCC Nature Action: TNFD

Forest & Soil Restoration

→ Marine Restoration

Nature-based Solutions (NbS)

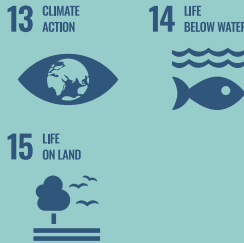
Natural Benefit Sharing

Environmental Education

Social Inclusion

Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

Hoping EcoPort

Located in Hualien, Hoping EcoPort was built via inland excavation to accommodate vessels while preserving the eastern coastline's natural landscape, unexpectedly becoming a coral sanctuary. Adhering to international standards, the port integrates environmental friendliness into its core operations. Since discovering corals within its waters over a decade ago, it has actively driven conservation and established comprehensive ecological data.

Trajectory of Coral Restoration at Hoping EcoPort

2015	Conducted underwater biological surveys
2019	Achieved EcoPorts PERS Certification (maintained continuously ever since).
2020	Conducted coral species identification surveys.
2021	- Achieved Green Port Award System (GPAS) certification (maintained continuously ever since). - Launched Bio Cube Construction Project
2023	Initiated fish and shellfish survey.
2024	- Launched coral planting project with grating plates - Created artificial wetlands - Won First Prize in the National Environmental Education Award (Corporate Category)
2025	- Initiated Chinese Spiranthus Survey and Bird Survey - Won the inaugural Corporate Marine Sustainability Contribution Award - June: Recommended for OECM designation following Ocean Affairs Council on-site assessment.
2026	April: Officially designated as an OECM by the Ocean Affairs Council.



Hoping EcoPort Designated as Taiwan's Marine OECMs

The global ocean is nearing an ecological tipping point. Under COP15's Kunming-Montreal GBF, the "30x30" target aims to protect 30% of global land and oceans by 2030, leveraging Other Effective Area-based Conservation Measures (OECMs) as a key mechanism. This initiative drives a "Nature Positive" approach to actively reverse environmental degradation. Taiwan's Marine Conservation Act took effect in July 2024, making Taiwan the first nation to codify OECMs into law to align with the international "30x30" conservation target through expert certification. Since 2021, Hoping EcoPort has driven coral restoration, creating healthy marine habitats and establishing a complete ecological management mechanism. Recommended by the Ocean Conservation Administration (OCA) and marine experts, the

port officially applied at the end of 2025. Following rigorous review, it was successfully designated as part of Taiwan's first batch of marine OECMs in April 2026. Moving forward, TCC will regularly upgrade ecosystem restoration plans, expand the marine protection network, and interconnect surrounding critical habitats. This initiative aims to enhance the resilience of Taiwan's blue territory, practicing the harmonious coexistence of TCC's industry and nature.



What Are OECMs?

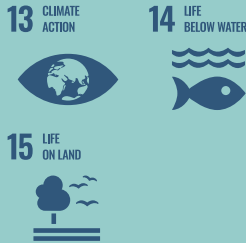
OECMs are geographically defined areas other than Protected Area. Through effective governance, they deliver positive, long-term sustainable impacts on ecosystem services while supporting cultural, spiritual, and socio-economic values. Under the UN Convention on Biological Diversity, OECMs count toward global conservation acreage within the "30x30" target. Consequently, identifying and designating OECMs has become a strategic priority for nations worldwide.





- Overview
- Governance
- Carbon Reduction
- Energy Transition**
- Employee
- Nature
 - TCC Nature Action: TNFD
 - Forest & Soil Restoration
 - Marine Restoration**
 - Nature-based Solutions (NbS)
 - Natural Benefit Sharing
 - Environmental Education
- Social Inclusion
- Appendix

Alignment with SDGs



Three Major Zones of Hoping EcoPort OECM

In accordance with the grading concept of "Sanctuary Zones" in the Marine Conservation Act, Hoping EcoPort divided the recognized area of 43.3 hectares into a "Core Zone", "Buffer Zone", and "Sustainable Use Zone" to balance ecology and operations.

Total Designated Area: 43.3 ha

Core Zone: 9.89 ha
(30-meter Coastal Ecological Hotspot)

—
The ecological nucleus for coral, fish, and shellfish growth. Hoping EcoPort implements the strictest ecological conservation and monitoring here to ensure the stable development of habitat organisms.



Buffer Zone: 27.61 ha

—
Situated between the Core and Sustainable Use Zones to maintain ecosystem and nutrient cycle integrity, mitigating potential disturbances from port operations on the Core Zone while conducting ongoing ecological surveys.

Sustainable Use Zone: 5.8 ha
(30-meter buffer from the 500-meter turning basin edge)

—
Surrounding the turning basin to ensure vessel safety, this zone continuously monitors environmental data due to the higher ecological impacts associated with port operations.

5 Major Biodiversity Values of Hoping EcoPort

- Critical Ecological Connectivity**
Connecting East Coast coral ecosystems
- High Biodiversity**
Total 11,091 fish and shellfish 217 species
- Rare Natural Resources**
Discovered of 3 rare giant clam species
- Biodiversity Protection**
Fishing prohibited to protect aquatic life
- Important Life History Habitat**
High maturity ratio of *Tridacna maxima*, serving as a germplasm repository

Ecosystem Service Functions and Values of Hoping EcoPort as OECM

- Provisioning Services: Fish and Shellfish**
Indirect eco-benefits via the habitat support.
- Regulating Services: Climate Regulation**
Ecosystems indirectly enhance coastal resilience.
- Supporting Services: Food Webs & Habitats**
Restoration fosters robust food webs.
- Cultural Services: Tourism, Education & Research**
Academic collaboration advocates ecosystem value.

Village Chief:

Unrealized how breathtaking the port in our hometown is!



TCC engaged key stakeholders to communicate Hoping EcoPort's OECM value and restoration achievements, securing their Free, Prior, and Informed Consent (FPIC).





- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature

- TCC Nature Action: TNFD
- Forest & Soil Restoration

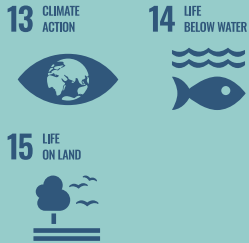
→ **Marine Restoration**

- Nature-based Solutions (NbS)
- Natural Benefit Sharing
- Environmental Education

Social Inclusion

Appendix

Alignment with SDGs



↑ Millepora

During a coral species identification survey at Hopping EcoPort in 2020, there are many small branching corals on shallow wave-dissipating revetments highly vulnerable to wave damage or mortality. In 2021, the Bio Cube Coral Construction Project was launched in collaboration with the Eco-Angel Environment Conservation Association, utilizing low-carbon cement bases for coral restoration.

First Phase of the Bio Cube Construction Project

In 2021, the team installed bio cubes in areas of the port less affected by wind and waves. Integrating TCC's core business, Hopping Ecoport used low-carbon cement as the base to transplant coral fragments broken by natural factors or port waves onto the bio cubes, restoring their growth opportunities. Although some bio cubes were damaged by earthquakes and typhoons in 2024, the total coral area growth rate reached 3.7 times from 2021 to the end of 2024, with an average annual survival rate exceeding 80%. As growth has stabilized, monitoring will be conducted simultaneously with the second phase starting in 2026.

Second Phase of the Coral Planting Project with Grating Plates

The team expanded the coral planting area, completing all coral habitat creation with grating plates in January 2024, marking Taiwan's first successful coral restoration case in an industrial port. However, frequent natural disasters in recent years have challenged restoration results, with typhoons and earthquakes successively striking in 2024–2025, damaging 269 corals. Although the impacts occurred, 1,145 new coral seedlings were naturally added in 2025, demonstrating the resilience of the port's ecosystem. Hopping EcoPort will initiate repair and expansion works in 2026, reinstalling 20 grating plates (approximately 100 corals restoration). In the future, Hopping Ecoport will evaluate allowing the public to participate in coral planting, encouraging public attention and involvement in marine conservation actions.

Giant Clam Survey

Although coral reefs cover only 0.2% of the ocean, they support a quarter of marine life. As coral populations enrich, the underwater ecosystem of the port increasingly completes. Beyond transplanted corals, natural coral seedlings and giant clams—listed in Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) since 1983—were discovered on bio cubes. Thus, Hopping EcoPort incorporated giant clam growth data into marine management indicators in 2022. Giant clams are highly sensitive to environmental conditions; wild populations are extremely rare due to environmental changes and human disturbances. Eco-Angel recorded 108 individuals at Hopping EcoPort in 2025, but

only 56 remain following recent earthquakes and typhoons. The maturity proportion is high, with an 88% maturity rate for *T. maxima*, the highest in Taiwan. Future monitoring and research on giant clam growth and maturity will clarify how environmental stressors affect their life history.

*Secretary-General of Eco-Angel:
Hopping EcoPort Has the Highest
Density of Giant Clams in Taiwan*



↑ Tridacna maxima



- Overview
- Governance
- Carbon Reduction
- Energy Transition**
- Employee
- Nature

TCC Nature Action: TNFD
Forest & Soil Restoration

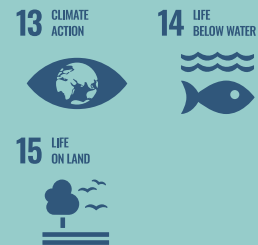
→ **Marine Restoration**

Nature-based Solutions (NbS)
Natural Benefit Sharing
Environmental Education

Social Inclusion

Appendix

Alignment with SDGs



Fish and Shellfish Survey

Hoping EcoPort collaborates with Taipei University of Marine Technology to conduct fish

and shellfish surveys using Underwater Visual Census and underwater cameras for species identification. The 2024 survey results showed

that biodiversity around the bio cubes was the highest, meaning the bio cubes and the corals growing on them provide sufficient habitat

space and food sources for fish. Long-term monitoring will continue to track whether biodiversity is increasing annually.

**ACTION
SPOTLIGHT**

**Optimization Directions for
TCC's 3D Printed
UHPC Restoration Bases**

TCC studied algae and coral attachment on various base materials. As 3D printing creates natural-like wrinkles and porous structures simulating natural coral reef textures, 3D-printed UHPC restoration bases were installed in October 2024 on Hoping EcoPort grating plates for long-term recording and observation of coral growth.

Research Objectives:

- Whether it promotes coral fragment attachment and algae colonization
- Impact of base shape on fish hiding
- Durability of UHPC in seawater environments

**OYAK Cement
"Footprints of Life:
Nest of the Ocean" Project**

On the 2025 International Biodiversity Day, OYAK Cement deployed 100 artificial reefs in waters 8–12 meters deep along the coast of Izmit Bay, using Durabet concrete made from its lowest-carbon cement. To increase populations, 6,000 juvenile fish were released in the bay, with long-term monitoring conducted alongside Kocaeli University to enhance ecological benefits.





- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature

TCC Nature Action: TNFD

Forest & Soil Restoration

Marine Restoration

Nature-based Solutions (NbS)

Natural Benefit Sharing

Environmental Education

Social Inclusion

Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

Artificial Wetland and Bird Survey

Hoping EcoPort added an artificial wetland in 2024, connecting land and sea areas, and introduced native plants and the endemic species *Aphyocypris kikuchii* listed in The Taiwan Red List, gradually attracting the natural migration of shrimp, crabs, amphibians, and reptiles. Migratory *Macrobrachium spp.* were recorded in February 2025. Monitoring by National Dong Hwa University recorded 49 bird species and 1,460 individuals as of 2025, covering protected species such as Styan's Bulbul and Little Tern, indicating a stabilized environment.

Hoping EcoPort expands conservation from artificial wetlands to local land crabs, protecting their land-sea life cycle of inland habitats and marine spawning migrations. The wetland serves as an ecological corridor buffer, reducing industrial habitat fragmentation and shortening migration distances.

By using leaf compost, Hoping EcoPort created land crab habitats and guided them from ditches to wetland ponds. This also provides habitats for lizards and skinks, boosting bird foraging and multi-level food chains. Future work will focus on insect surveys, native species conservation, and ecological corridor optimization.

Chinese Spiranthes Survey

Chinese spiranthes is listed in Appendix II of the Convention on CITES due to habitat loss and over-collection. Hoping EcoPort avoids herbicides and pesticides, serving as a native sanctuary. A 2025 survey by the team from National Dong Hwa University identified 1,943 individuals in 1.3 hectares, alongside rare species such as *Ophioglossum thermale* and *Eulophia dentata*. Population monitoring will continue in 2026 to provide a foundation for green space management within Hoping EcoPort.

Rare Terrestrial Species First Discovered in the Artificial Wetland:

 **Birds:**
Northern Lapwing
(rare migratory bird)

 **Frogs:**
Latouche's Frog

 **Snakes:**
Oriental Rat Snake

 **Butterflies:**
Plain Tiger



↑ The long-distance migratory Northern Lapwing, the national bird of Ireland, was recorded for the first time at the wetland, resting during its transit through Taiwan.

ACTION SPOTLIGHT

Hoping EcoPort Water Environment Watch

The Water Environment Watch was voluntarily established by employees in 2023 and grew to 18 members by 2025, representing an internal employee participation rate of 41%. The team targets the continued maintenance of the coastal environment at the estuary of Heping River and plans to establish two-way ecological connection through land crab habitat creation. In 2025, a total of 99.81 kg of waste was collected, with no abnormal incidents reported during this period.

TCC KEY FACTS

Artificial Wetland Creation

14 utilized species

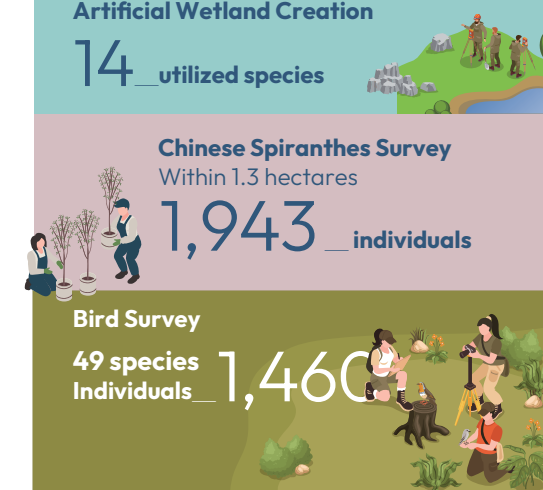
Chinese Spiranthes Survey

Within 1.3 hectares

1,943 individuals

Bird Survey

49 species
Individuals 1,460





Overview

Governance

Carbon Reduction

Energy Transition

Employee

Nature

TCC Nature Action: TNFD

Forest & Soil Restoration

Marine Restoration

→ **Nature-based Solutions (NbS)**

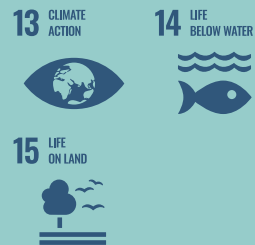
Natural Benefit Sharing

Environmental Education

Social Inclusion

Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

5.4 Nature-based Solutions (NbS)

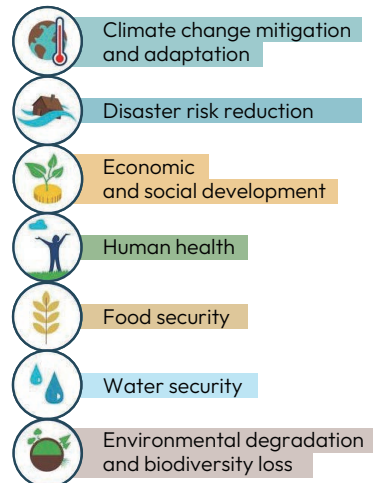
The 2025 COP30 in the Amazon urged returning “life itself” to climate dialogues. With United Nations Framework Convention on Climate Change (UNFCCC) viewing Nature-based Solutions (NbS) as key to the climate-nature crisis, TCC implements an NbS operational model to drive carbon reduction and green

enhancement. By managing site-level environmental impacts, restoring ecosystems, and protecting endangered species, TCC transforms damaged natural capital into resilient ecological assets, mitigating climate change while creating a nature-positive impact.



What Is NbS?

The International Union for Conservation of Nature (IUCN) defines NbS as actions to protect, sustainably manage, and restore ecosystems to address societal challenges, simultaneously benefiting human well-being and biodiversity.



+ TCC NbS Cases

**Removing Invasive White Popinac:
Mitigating Ecological Threats and Reducing Carbon**
TCC co-processes invasive White Popinac into zero-carbon energy, removing **606.45 tons** in 2025 to reduce **721.68 tCO₂e**.



Hot Springs Also Generate Green Energy

Vakangan Hot Spring Park, Taitung

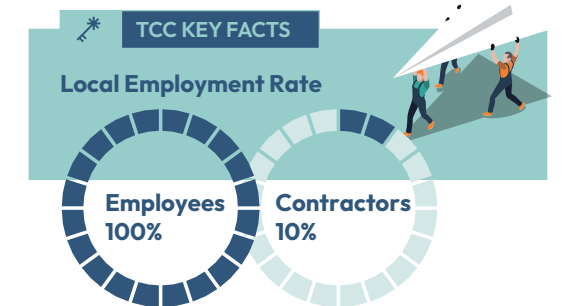
Addressing Challenges:
Climate Change Mitigation and Adaptation,
Economic and Social Development

Creating Opportunities:
Transitioning to low-carbon energy, promoting
local employment, and empowering local talent

After Typhoon Morakot, TCC applied its DAKA experience to propose a dual-track model of geothermal energy and tourism, cooperating with LDC Hotels to build "Vakangan Green Energy Hot Spring Park." The park adopts low-impact development, retaining one-third of green space for flood storage to enhance climate resilience.

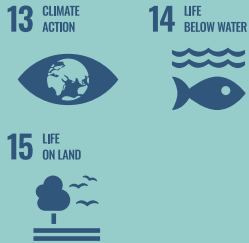
**OECMs - Hoping EcoPort Ecological Restoration:
Building Homes for Corals with Concrete Bases**
Hoping EcoPort enhances biodiversity as a sanctuary for marine ecosystems.

**Chiayi Aquavoltaics:
Revitalizing Fishing Villages Under the Sun**
Green energy hub helps 80% of farmers get TAP, supporting Green Care.





Alignment with SDGs



ACTION
SPOTLIGHT

Solar Grazing: Creating a Triple Win for Economy, Environment, and Society

Addressing Challenges:

Climate change mitigation and adaptation, economic and social development, environmental degradation and biodiversity loss

Creating Opportunities:

Lowering operational costs, fostering community co-prosperity, and enhancing ecological benefits

Since 2024, TCC Yingde Plant has pioneered a "solar grazing" model, transforming a 34,000 m² solar site into a pasture. Sheep replace chemical herbicides by grazing naturally, raising their market value to 1.6 times that of captive-bred livestock, creating an economic and environmental win-win. Targeting solar expansion in 2026, the plant integrates grazing routes into panel design. The flat terrain also reduces risks for elderly shepherds, addressing an aging farming population. TCC further plans academic collaborations to study how sheep manure improves soil health, establishing quantitative indicators for a scientific operational model.

TCC KEY FACTS





- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature
- TCC Nature Action: TNFD
- Forest & Soil Restoration
- Marine Restoration
- Nature-based Solutions (NbS)
- Natural Benefit Sharing
- Environmental Education

- Social Inclusion
- Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

5.5 Natural Benefit Sharing

Dr. Cecilia Koo Botanic Conservation Center

The Convention on Biological Diversity (CBD) sets three main objectives: "the conservation of biological diversity," "the sustainable use of its components," and "the fair and equitable sharing of the benefits arising out of the utilization of genetic resources." Furthermore, the Kunming-Montreal Global Biodiversity Framework (GBF) and CBD COP 16 both emphasize the importance of fair and equitable sharing of genetic resources globally.

TCC has supported the Dr. Cecilia Koo Botanic Conservation Center (KBCC) since 2007. Located in Gaoshu Township, Pingtung County, KBCC is dedicated to conserving tropical and subtropical plants globally, having become the world's largest conservation base for these species. Led by Executive Director Chia-Wei Li, Hou Chin-Tui Chair Professor at National Tsing Hua University, KBCC adopts scientific management, assigning exclusive barcode labels to each plant and tailoring temperature, humidity, and sunlight conditions to their native habitats within its isolation greenhouses for ex-situ living preservation and academic research.

In 2025, the Center provided genetically stable, purebred *Azolla germplasm* (a floating fern commonly found in paddy fields and wetlands) for research. Known for its nitrogen-fixing properties and symbiotic relationships with

microorganisms, this germplasm promotes nutrient cycling and agricultural research. This contribution assisted a multinational team in completing a genetic analysis of symbiotic microorganisms, which was published in the *ISME Journal*⁷, a top-tier microbial ecology journal. This milestone further strengthens TCC's research foundation in natural capital and ecological restoration. Simultaneously, greenhouse cultivation and identification at the Center led to the discovery of a newly recorded species of *Araceae*⁸.

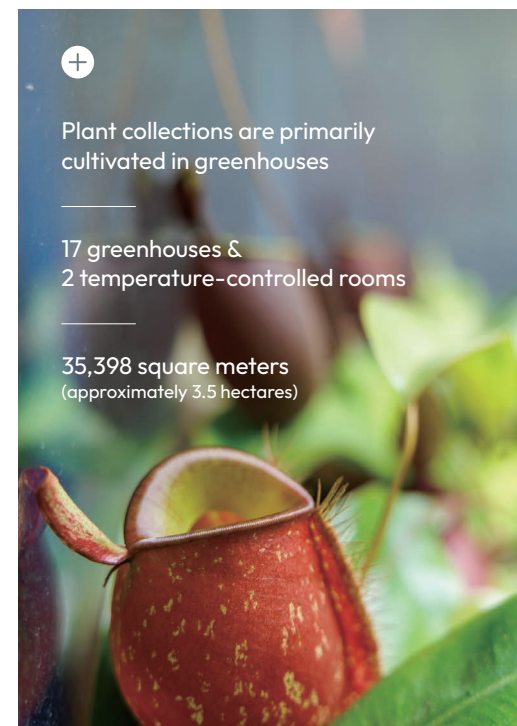
Plant extracts serve as vital sources for pharmaceuticals. In addition to collaborating with academic institutions to build an extract library for anti-cancer and COVID-19 antiviral research, KBCC provided the native plant *Monstera epipremnoides* to help National Tsing Hua University successfully develop a patented new drug for brain injury. Furthermore, in 2024, the Center partnered with the Taiwan Polar Research Center at National Central University to send over 400 varieties of Taiwanese indigenous millet seeds to the Svalbard Global Seed Vault in Norway. Looking ahead to 2026, the partners plan to collaborate again to formulate future plans, ensuring the preservation and restoration of global plant germplasm in the face of extreme disasters and climate change, thereby safeguarding TCC's sustainable commitment to Taiwan's indigenous knowledge and native species.



Plant collections are primarily cultivated in greenhouses

17 greenhouses &
2 temperature-controlled rooms

35,398 square meters
(approximately 3.5 hectares)



TCC KEY FACTS

As of Dec. 31, 2025

Conservation of plants

34,556 taxa
from around the world

Plants frozen in liquid nitrogen
8,709 species
62,037 frozen specimens

Accumulated
6,500 samples for medical use



The Conservation Center Team



TARGET



40,000 species
conserved by 2030

Note 7 : Adaptive pangenomic remodeling in the *Azolla* cyanobiont amid a transient microbiome
Note 8 : *Amydrium* Schott (Araceae), A Neglected Genus to the Flora of Taiwan and Lanyu



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Nature

TCC Nature Action: TNFD

Forest & Soil Restoration

Marine Restoration

Nature-based Solutions (NbS)

Natural Benefit Sharing

Environmental Education

Social Inclusion

Appendix

Alignment with SDGs

13

CLIMATE ACTION



14

LIFE BELOW WATER



15

LIFE ON LAND



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

ACTION SPOTLIGHT

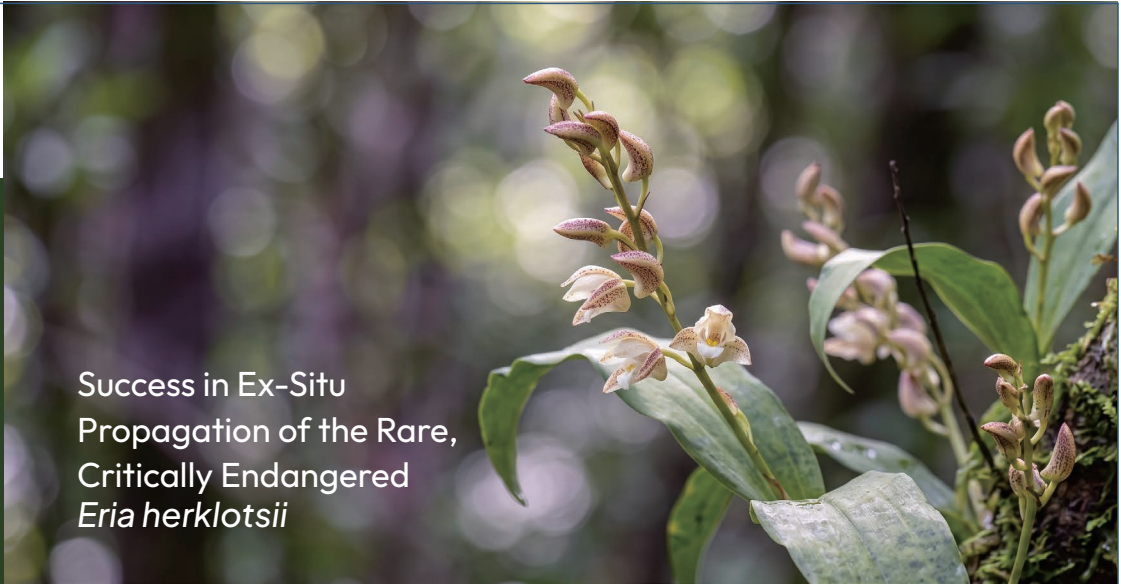
Critically Endangered *Monoon liukuense*: First Recorded Coexistence with the Atlas Moth

KBCC collaborated with the Bank of Flowers and Trees to re-store the critically endangered (CR) plant *Monoon liukuense*, listed in "The Red List of Vascular Plants of Taiwan". During routine observations in 2025, larvae of the Atlas moth (*Attacus atlas*), Asia's largest moth, were found inhabiting and foraging on the plants. Since *Monoon liukuense* is not a typical host plant for the

Atlas moth, this discovery may represent the first recorded ecological association between the two species, potentially serving as a key ecological indicator for habitat restoration. KBCC will continue tracking this development, providing first-hand observation records to contribute to scientific re-search.



News Link: Atlas Moth Caterpillars Found on Endangered *Monoon liukuense* at "Bank of Flowers and Trees"—Believed to be Taiwan's First Recorded Case by Academia.



Success in Ex-Situ Propagation of the Rare, Critically Endangered *Eria herklotsii*

Confirmed as a new species in 2010, *Eria herklotsii* is found only in southeastern Taiwan, southern China, and Vietnam. Threatened by illegal poaching and habitat destruction due to its ornamental value, only one wild population remains in Taiwan. In 2017, it was listed as Critically Endangered (CR) in the Red List of Vascular Plants of Taiwan. KBCC acquired the last remaining wild individual in 2018 for ex-situ conservation. By replicating its epiphytic environment, KBCC successfully propagated seedlings in greenhouses, which will be transplanted for acclimatization to cultivate wild-resilient plants.

Only scientifically documented species can receive effective protection. Beyond establishing academic foundations, discovering new species can unlock medical or technological breakthroughs. KBCC plans to collaborate with the Ministry of Agriculture and Taiwan Forestry Research Institute to reintroduce *Eria herklotsii* to its original habitat in Taitung.



- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature
-
- TCC Nature Action: TNFD
- Forest & Soil Restoration
- Marine Restoration
- Nature-based Solutions (NbS)
- Natural Benefit Sharing
- Environmental Education
- Social Inclusion
- Appendix

Alignment with SDGs



5.6 Environmental Education

TCC integrates environmental education concepts into operational sites. The Bromeliad Garden gathers 147 species and thousands of bromeliads, serving as a vital engagement link for plant conservation and ecological restoration. Facilities are adjusted according to local conditions—for example, by adding bird collision prevention designs—to urge the public to pay attention to nature issues. RRRC, which opened to the public at the end of 2025, features a specially designated “Fern Garden” that gathers endangered and common fern species from around the world, raising awareness of how deeply human life depends on

plants. Environmental education not only enhances stakeholders' understanding of TCC's concepts and sustainability actions but also increases employee identification. This momentum drives Hoping EcoPort, Ho-Ping Power Company, and even overseas sites, to voluntarily pursue environmental education facility certifications, linking corporate sustainability efforts throughout the entire value chain. TCC will continue to expand its influence through environmental education, demonstrating the possibility of harmonious coexistence between humans and nature.

ACTION SPOTLIGHT

Hoping EcoPort & Ho-Ping Power Company Invited to Participate in Taiwan Science Train

In 2025, Hoping EcoPort and Ho-Ping Power Company participated in the Taiwan Science Train event at the invitation of National Dong Hwa University and National Science and Technology Council. Hoping EcoPort promoted marine conservation through images of giant clams growing in the port area; Ho-Ping Power Company used the themes “Lighting Up a Sustainable New Future” and “Good Neighbor of Hoping—The Little Tern” to demonstrate converting light, wind, water, and sea into electricity, while using puzzles to guide the observation of little tern features, inspiring care for natural ecosystems.



OYAK Cement also participated in the World Environment Day workshop of the Izmit Municipality, making windmills with children to foster sustainability awareness.

TCC's Global Environmental Education Sites

2022

📍 Hoping EcoPort

Taiwan's first port-based environmental education facility, with coral reefs and tropical fish visible to the naked eyes along the shore! For more information, please refer to [CH5.3](#)

2023

📍 Guigang Plant

Green transition of modern factories subverts public stereotypes!

2026

📍 Ho-Ping Power Company

Turning “desulfurization gypsum” —a power generation byproduct— into DIY eco-aroma stones inspires a new appreciation for electricity, a resource we take for granted !

ONGOING

📍 TCC DAKA and Yingde Plant

Open factory practices demonstrate how to balance green electricity and ecological cycles, creating economic, environmental, and social benefits! For more information, please refer to [CH5.4](#)



TCC KEY FACTS

Cumulative to 2025

Environmental Education Courses

📍 Hoping EcoPort

📍 Ho-Ping Power Company

80__sessions

3,323__participants

Ecological Guided Tour

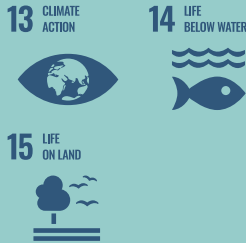
📍 TCC DAKA

2,505__participants





Alignment with SDGs



ACTION
SPOTLIGHT

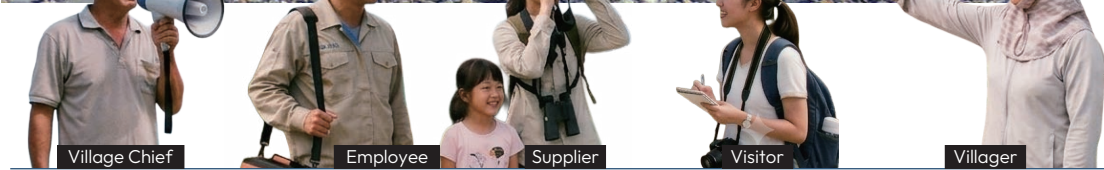
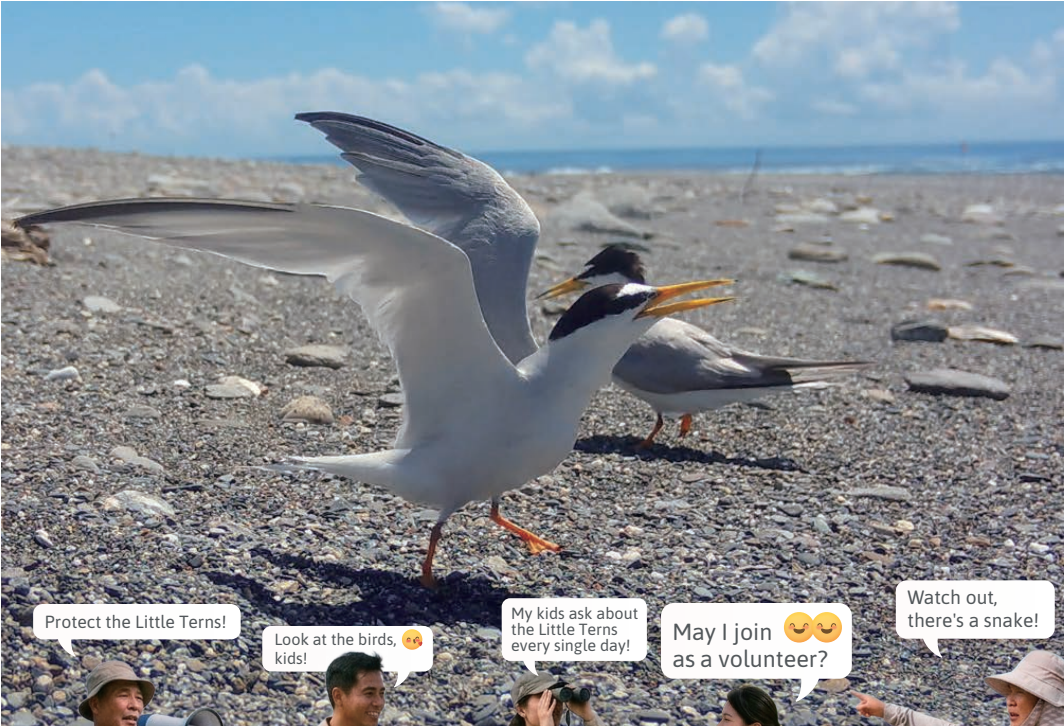
Little Tern Conservation Project — Hoping Welcomes You

In 2024, the protected Little Tern nested near Hoping Power Plant for the first time. The plant and Hoping EcoPort launched a conservation program with the Wild Bird Society of Hualien:

Three-Year Monitoring Program: Conducting annual monitoring (April–August) and installing protective signs.

Rooting Ecological Education: Visiting local elementary schools to promote conservation.

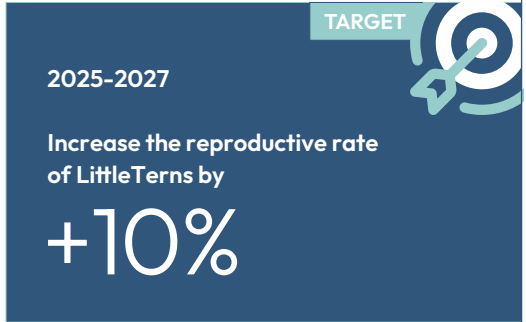
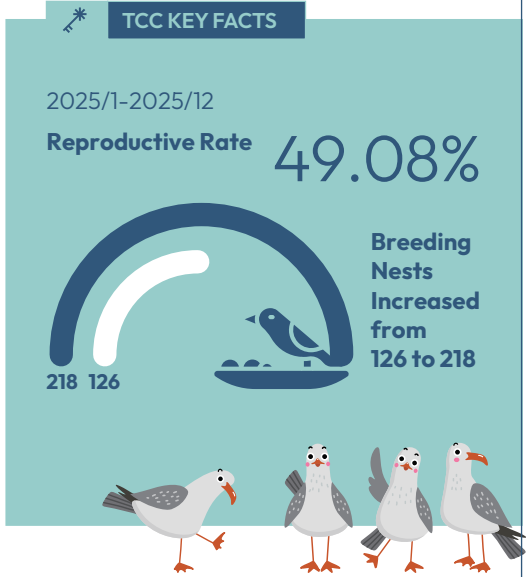
Cross-Boundary Patrol Team: Employees and suppliers patrol during breeding seasons, utilizing identification software to enhance ecological recording.



He-Ping Primary School Wins Hualien Essay Gold Medal

He-Ping primary students discovered the local Little Tern breeding habitat through environmental education. Their essay won the Gold Medal in the 2025 National Online Essay

Competition. Ho-Ping Power Company and Hoping EcoPort employees voluntarily supported their interviews and rehearsals, turning knowledge into real action.



chapter 6

Social Inclusion



6.1	Social Engagement	187
6.2	Education Equity	194
6.3	Cultural Preservation	196

Atlas

In Greek myth, the titan Atlas must forever bear the heavens. TCC reframes this as "shouldering," a symbol of the responsibility it carries. Just as Atlas eternally supports the world, TCC will keep safeguarding the environment and devoting itself to sustainable development.



- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Social Engagement
- Education Equity
- Cultural Preservation

Appendix

Alignment with SDGs



6.1 Social Engagement

Social Engagement Policy | Doing Better, Together

For TCC, social and community engagement is more than just financial aid. It is about leveraging its core business, technology, and services to co-create new value and build corporate sustainable resilience.

Public concerns regarding the industry do not entirely stem from technology itself, but rather from a lack of mutual understanding and trust.

In the past, industrial professionals held a typical mindset: focusing on producing quality products and managing production well, believing that complying with regulations and ensuring good management was sufficient. However, outside the factory, the public cannot see what is being done every day. When people do not understand, various imaginations and speculations gradually arise.

“A factory cannot exist isolated; it is always connected with surrounding communities. A factory should become a part of society and local life.” Chairman Nelson An-ping Chang believes that the relationship between industry and community is interdependent, and only through mutual understanding and trust can co-prosperity and inclusion be achieved.

TCC's social engagement has transitioned from “economic contribution (public welfare)” to “local co-prosperity”, working with communities



to address modern challenges and advance toward “sustainable transition.” Through a three-dimensional community engagement mechanism, TCC systematically reviews its investments, integrates local needs into operational strategies, and jointly builds social resilience.

Public Welfare × Co-prosperity:
TCC translates societal expectations into social trust, securing tangible local support to establish a solid foundation for daily operations.

Co-prosperity × Transition:
TCC collaborates with local community partners and the supply chain to upgrade industrial resilience, jointly driving green transition and building a low-carbon industrial ecosystem.

Transition × Public Welfare:
Leveraging its corporate influence, TCC builds a safety net for vulnerable groups affected during the digital and green dual transition, providing the necessary resources and assistance for a transition buffer to uphold a “just transition” that leaves no one behind.



TCC Social Engagement Practices

- 2020 **Hoping Plant**
TCC DAKA
Open Eco-Circular Factory
- 2021 **Shaoguan Plant**
Open Eco-Factory
- 2024 **Yingde Plant**
Open Eco-Factory
- 2025 **Nautilus Bibliotheca**
- 2027 **CIMPOR Portugal**
New R&D Center Living Lab





- Overview
- Governance
- Carbon Reduction
- Energy Transition**
- Employee
- Nature
- Social Inclusion**
- Social Engagement**
- Education Equity
- Cultural Preservation

Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT



Public welfare
×
Co-prosperity

Transforming
expectations into trust

TCC DAKA Eco-Circular Factory: Taiwan's First Tourism Factory in Heavy Industry

Opened in January 2020, TCC DAKA is Taiwan's first open tourism factory in heavy industry. In 2019, TCC proposed a Build-Own-Operate (BOO) project for cement kiln co-processing of Hualien's waste. To resolve tribal concerns, TCC engaged through field visits, traditional festivals,

and dialogues with opinion leaders, opening Hoping Plant to establish communication channels—giving birth to TCC DAKA.

"Every purchase becomes a substantial force for local protection."

Operating on a non-profit basis, TCC allocates a percentage of revenue from DAKA guided tours and market administration, along with contributions from partner companies 7-Eleven and Starbucks, to a fund for local education and emergency relief. The Starbucks store was selected as Asia's first community store, while the DAKA market has become an incubator for tribal youth entrepreneurship.

Daily Support Without the Fireworks — Building Hoping into a Resilient Community

As tribal communities face multiple needs—including educational resources, medical care, emergency shelter, and support for elderly living alone—TCC is moving beyond profit-sharing to directly invest in “emergency assistance” and “educational resources”, enhancing the capacity for sustainable development within the community.

Hoping Sustainable Charity Foundation

Established in October 2022 per tribal consensus, the foundation, directed by the Hoping Village chief and three indigenous chairpersons, has utilized dedicated funds to assist 155 families in hardship as of 2025. In 2023, Ho-Ping Power Company expanded this initiative, establishing “Ho-Ping Power Maritime Emergency Relief Fund” with the Suao Fishermen's Association to support local fishermen and their families.

Home Repair Service

Established in 2022 and expanded to Suao Plant in 2024, the Home Repair Service Center provides free parts and assistance for rural areas, completing 625 cases, and accumulating 1,652 hours in 2025.

Hoping Care Bus

Launched in 2023, Hoping Care Bus transports elderly residents and villagers for daily needs, adding Aohua Stop in August 2025. By the end of the year, it has accumulated 2,875 passenger trips with an investment of NT\$202,865.

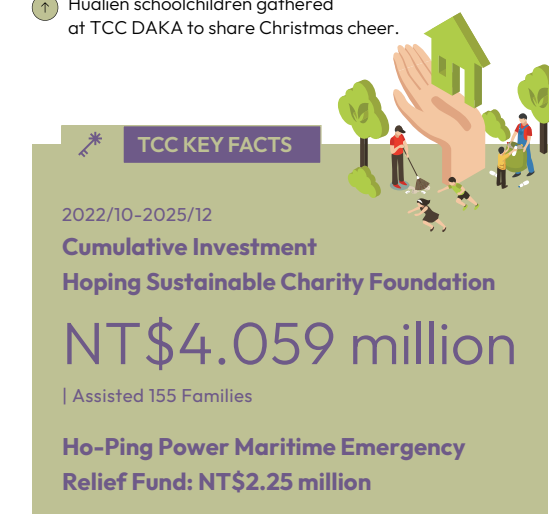
Hoping Temporary Shelter Activated in April 2025: First Corporate-initiated Disaster Relief in Hualien

Following the 0403 earthquake, TCC converted its old office into an accessible Hoping shelter for the elderly and families, integrating it into Xiulin's emergency system.

For information on educational resources, please refer to [CH 6.2](#)



Hualien schoolchildren gathered at TCC DAKA to share Christmas cheer.





- Overview
- Governance
- Carbon Reduction
- Energy Transition**
- Employee
- Nature
- Social Inclusion**

Social Engagement

- Education Equity
- Cultural Preservation

Appendix

Alignment with SDGs

3 GOOD HEALTH AND WELL-BEING

4 QUALITY EDUCATION

10 REDUCED INEQUALITIES

ACTION SPOTLIGHT

Yingde Eco-Factory: Family Strolls in the Pine Forest—A Micro-Tourism Hotspot in Guangdong

“ I thought it would be a typical factory, but the moment I stepped inside, I was genuinely impressed...”

— Yanzi, a visiting mother

TCC’s flagship Yingde Plant in Mainland China integrates low-carbon production, strict environmental management, and ecological conservation. Continuing TCC’s open factory philosophy, the plant transformed its historic 200-year-old cool water well, ecological ponds, and slash pine forest into an open ecological park, offering interactive experiences in local connection, family friendliness, and environmental education.

In 2025, the plant was named a Green and Low-Carbon Factory by the Department of Industry and Information Technology and the Department of Culture and Tourism of Guangdong Province, and was added to the Guangdong Industrial Tourism Resource

Pool. Attracting thousands of weekend visitors, the park prompted the local government to add a bus stop at the entrance to improve accessibility, becoming a popular micro-tourism destination in Guangdong.

Child Safety & Happy Growth event in the slash pine forest.



Creating an Outdoor Classroom for Family Interaction

Utilizing the plant’s forests, green spaces, and lakes, TCC designs family-friendly outdoor areas and interactive experiences with resident animals like peacocks, rabbits, and ostriches, drawing families into the eco-factory.

Petting Zoo

Cultural Courses Connecting Local Industries

Yingde, known as the hometown of black tea in Mainland China, extends its cement handcraft workshops by introducing black tea soap-making activities that connect cement learning with local tea culture, enabling visitors to engage with both industrial knowledge and local heritage.

TCC Handcraft Workshop



Industrial-Themed Environmental Education

Repurposed mining trucks are integrated with modern play structures, creating an interactive space for families to explore the industrial landscape. The resident sheep flock further illustrates Yingde Plant’s solar grazing model and its contribution to environmental sustainability.

Mining Truck Display Area



- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Social Engagement
- Education Equity
- Cultural Preservation
- Appendix

TCC DAKA 2.0: Nautilus Bibliotheca

An Industrial Aesthetics Journey Beyond Imagination

Hidden within the operating cement plant is a spiral structure—
Nautilus Bibliotheca of TCC DAKA, quietly coexisting with the massive industrial rotary kiln

Located at the TCC DAKA RRRC entrance, Nautilus Bibliotheca is the highlight and core of DAKA 2.0. Designed around the nautilus's golden ratio spiral curve, this field carries memory, imagination, and exploration, echoing TCC's core values—sustainability, circularity, and co-prosperity—through the 450-million-year-old endless vitality of "living fossil".

Serving as a portal to multiple dimensions, this library redefines cement as a medium of knowledge and civilization. Through TCC's exquisite "Cement Replica Craft", it exhibits historical artifacts—from "The Art of War" and Qin dynasty weights to the "Rosetta Stone" and

humanity's earliest love letter—symbolizing civilization's resilience in adversity. For TCC and Hualien, this opening is a new DAKA tourism highlight, symbolizing transformation and rebirth through challenges.

In November 2025, the library officially opened to the public. Visitors can take the transparent elevator to overlook Hoping 3-in-1 of Port, Power, Cement Plant alongside the vast Pacific Ocean, explore TCC's low-carbon transition and internationalization process at "Cement Fantasy", and discover biodiversity in "Fern Garden." For more information and guided tour reservations, please refer to [TCC DAKA official website](#).



DAKA "The Graffiti Hall" Sustainable Learning and Practice Academy

2026
Sustainability
Workshop
| Micro-Forest
Terrarium

A creative base gathering sustainable learning and creative exchange. Its first workshop "Earth Color Painting" used local Hoping soil as pigment, experiencing the connection between life and land. Linking Hoping EcoPort, Ho-Ping Power Plant, and RRRC, the base seamlessly blends hard industrial transformation knowledge with practical environmental education. Learn more at [The Graffiti Hall](#).

Alignment with SDGs



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

Nautilus Fantasy Journey: Tailored Needs Becoming a Sustainable Professional (One-Day Tour)



Little Designer: Low-Carbon Cement Handcraft
Children use their creativity to mix colors, transforming low-carbon construction materials into warm and colorful Smart Flower magnets.



Cement Fantasy: Giant's Light & Shadow Magic
Step into RRRC to see the kiln giant turn waste into treasure with high-temperature, becoming an "urban purifier."



Fern Garden: A Time Tunnel
Spanning Millions of Years
Visit the gathering place of ferns—to see how these ancient green guardians help the earth breathe, understanding the ecological restoration.



- Overview
- Governance
- Carbon Reduction
- Energy Transition**
- Employee
- Nature
- Social Inclusion**

Social Engagement

- Education Equity
- Cultural Preservation

Appendix

Alignment with SDGs



Local Empowerment

Co-prosperity × Transition

Co-creating value with
local community partners
and the supply chain

Experiencing the Endless Possibilities of Cement

Breaking the mold of traditional B2B communication in the cement industry, DAKA Market launched the Cement Wonder Shop. Alongside creations by the Hoping Cement Plant design team, the shop features cement-focused lifestyle brands like true nii and T-bone Studio, showcasing the material's diverse everyday applications. Additionally, guided tours incorporate cement hand-crafting workshops,



inviting the public to engage with the material firsthand and discover its endless possibilities in daily life.

- 1 Crafted by the Hoping Plant design team, these creations originated from a 2020 workshop that paired pandemic-returned youth with in-house cement artisans to empower local design skills.

Promoting Diverse Local Employment

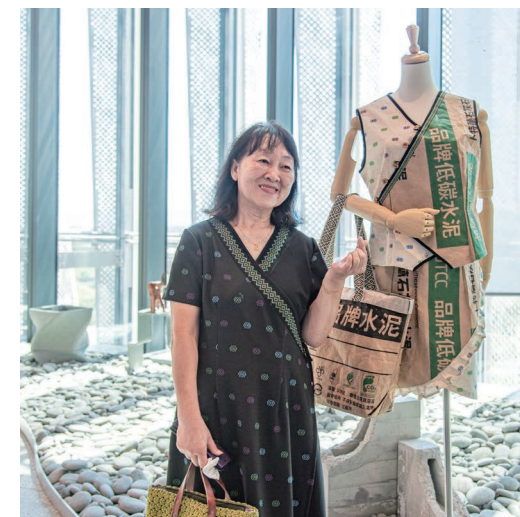
Supporting surrounding communities, TCC upholds local employment and has established the DAKA Market as an entrepreneurial platform for tribal residents, providing non-manufacturing job opportunities. TCC also offers training in spatial design, photography, and marketing to strengthen vendors' operational capabilities. Through digital empowerment, some partners have expanded into e-commerce and launched independent businesses, building more sustainable livelihood models.



- 1 RabayBread makau mini burger and Dipit herbal tea made with roselle and red quinoa

Siuhua Workshop Preserves Truku Weaving Tradition

Siuhua Workshop, founded by Truku artisan Shima Siuhua, has been based at DAKA Market for over five years, preserving traditional weaving craftsmanship through exhibitions, sales, and commissioned works. Its "Valley Woven Color Placemat" integrates natural valley tones and Truku totems into contemporary home living.



Supporting Hualien's Finest Local Goods

In support of Hualien's revitalization, the Cement Wonder Shop launched a "Hualien's Finest" section in 2025, featuring environmentally friendly and community-supporting products. TCC DAKA also collaborated with Hualien Distillery to launch a beer brewed with deep ocean water. As a key gateway to Hualien, the park leverages its high visitor traffic to support local producers through channel support.



RabayBread Expands from Market Vendor to Independent Store

Ming, a baker from Heping and one of the first vendor partners at DAKA Market, later established RabayBread in Xincheng Township, Hualien. From a market stall to an independent store, she remains committed to plastic reduction and the use of local tribal crops in her products.

TCC KEY FACTS

DAKA Market Elevates Local Community

4.17% non-manufacturing
employment rate

Social Return on Investment (SROI)

Every NT\$1 invested in TCC DAKA
creates NT\$3.54 of social value



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Social Engagement

Education Equity

Cultural Preservation

Appendix

Alignment with SDGs



2025 TCC GROUP HOLDINGS
SUSTAINABILITY REPORT

Toward Inclusion

Transition
×
Public Welfare

Building a safety net to
enhance transition
resilience

Carbon Reduction Parent — Child Bankbook Program

TCC collaborates with communities to address social challenges brought by climate change. TCC initiated the EARTH HELPER sustainability initiative in 2022 and promoted the Carbon Reduction Parent-Child Bankbook Program from 2023 to 2024, engaging teachers, students, and family members to achieve carbon reduction results completed joyfully by many tribal families. TCC adopts the IRIS+ international standard and the IOOI (Input-Output-Outcome-Impact) model in 2025 to verify program effectiveness through quantitative questionnaires and qualitative interviews.

As children become home 'carbon monitors,' the green transition ripples from schools to families, creating a 'little hands leading big hands' effect that breaks through adult cognitive barriers!



Expert Perspective

Hsu Chia-Wei,
Executive Director of the Center
for Corporate Sustainability
Impact at Tunghai University



Warmth Beyond Data: From Empathy to Co-prosperity

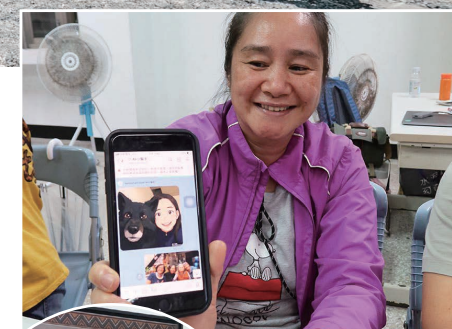
Behind the data lies a moving force: the "warmth of change" captured in qualitative interviews. At Dong-Ao Primary School, teachers found that children previously unfamiliar with carbon topics started proactively checking utility bills and calculating household power use. At He-Ping Primary School, students built recycling habits and recorded their carbon-saving journeys in award-winning essays. Read more in [Carbon Reduction Parent-Child Bankbook Program Social Impact Assessment Report](#) & [TCC Sustainable E-Newsletter](#).



Visited the mining platform and observed AI-powered autonomous electric mining trucks in operation.

AI Future Empowerment Initiative

Facing the dual green and digital transition, technology is a key driver to accelerate net zero and bridge gaps. TCC targets to upgrade the project to the AI Future Empowerment Initiative by 2026, assisting local residents and the next generation in developing digital skills. TCC directly brings AI practical courses to rural education, helping communities build digital literacy early to ensure vulnerable groups possess key capabilities for the future during the just transition process. For more information, please refer to [Pillar VI Talent and Culture](#) and the [2026 Just Transition Report](#).



For Xiad Chiu of Hoping Plant, her very first presentation was a success—powered by NotebookLM to quickly generate a beautifully formatted deck on the 'Truku Archery Workshop.

TCC KEY FACTS

Significant gains in sustainability literacy across three dimensions:

Attitude
92.3%

agree protecting
the Earth is a
shared responsibility

Knowledge
84.4%

understand human
activity drives
global warming

Behavior
83.6%

proactively save
energy at home
and school

Daily Action Rate
80% adoption

led by turning off lights
and setting AC to 26–28°C





- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Social Engagement
- Education Equity
- Cultural Preservation

Appendix

Alignment with SDGs



ACTION SPOTLIGHT

From Shovel Supermen to Warm Travelers: Accompanying Hualien's Rebirth



In September 2025, severe Typhoon Wakasa breached the Mataian Creek barrier lake, devastating Guangfu Township. Chairman Nelson An-ping Chang immediately mobilized cross-unit resources. This first wave united Hoping Plant, Hoping EcoPort, and Taiwan Transport & Storage (TTS). Together with suppliers, they deployed over 12 excavators, loaders, and crane trucks to clear mud and debris.

To prevent secondary disasters, TTS launched the "Shovel Superman" relay, utilizing four 35-ton dump trucks to move urban mud to the suburbs. The operation cleared over 1,200 tons of mud daily, reducing risks to nearby communities. Local supplier Hongyang Maritime also provided accommodations for TTS drivers working around the clock.

To support the influx of responders and volunteers at the Hualien Sugar Factory command center, NHOA.TCC provided unlimited free charging services from October 4 to 12. This eased logistics, allowing rescue teams to focus on frontline operations.

Beyond Guangfu, when collapsed water sources left several Zhuoxi Township villages facing severe shortages, Ho-Ping Power Company instantly coordinated with suppliers to deliver 300 boxes of bottled water, relieving the villagers' urgent needs.



Powered up and ready!
Supporting a whole day
of supply runs.



While restoring communities, TCC remained dedicated to its own. For employees whose homes were damaged by the flood, TCC provided compassionate leave and tailored assistance, ensuring they could rebuild with peace of mind. A total of 14 employees utilized 46 days of leave. From community recovery to employee care, TCC stood alongside Hualien.



- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Social Engagement
- Education Equity
- Cultural Preservation

Appendix

Alignment with SDGs



6.2 Education Equity

Committed to giving back to society, TCC has long championed children's education, empowering the next generation through diverse learning opportunities to build a brighter future.

Cement Academy — Taiwan & Mainland China

Launched in 2012, TCC's Cement Academy was named by former TCC Chairman Chen-Fu Koo. Its Chinese name “Shih-Ming” phonetically echoes “cement”. “Shih” denotes a talented individual and “Ming” means diligent, reflecting a passion for learning. Centered on character, academic excellence, and quality, the program provides after-school tutoring for underprivileged students near our plants in Taiwan and Mainland China, transforming TCC's brand into an enduring legacy of social care. (For further details, please visit the [ESG section](#) on TCC's official website.)

Cement Academy Long-Term Program | Provided by TCC

	After-school tutoring Guiding students to explore their interests through enrichment courses in English, computer skills, choir, and traditional yueqin folk singing, alongside agri-food and reading clubs.
	Nutritious meals Balanced meals, including lunch boxes, bread, snacks, and milk, to supplement schoolchildren's daily nutrition.
	Holiday Activities Children's Day events and inter-school summer camps foster observation, creativity, and mutual growth through play-based learning.
	Stationery supplies Providing stationery and learning resources to alleviate the financial burden on students' families.
	Results Presentation Showcasing learning outcomes through performances featuring wind instruments, ukuleles, tatuks (Truku xylophone), and English songs.

ACTION SPOTLIGHT

Little AI Explorers — An Animated Sustainability Adventure

Integrating sustainability and STEAM education, the 2025 Cement Academy Summer Camp empowered 69 students from Yilan and Hualien to translate environmental issues into 13 AI-assisted animated shorts. This initiative advanced Generation Alpha's digital storytelling capabilities while deepening their commitment to local environmental and social responsibilities.



TCC KEY FACTS

2021-2025

The Cement Academy has benefited 6,392 students cumulatively

19 partner schools

| Taiwan & Mainland China



- Overview
- Governance
- Carbon Reduction
- Energy Transition**
- Employee
- Nature
- Social Inclusion**
- Social Engagement
- Education Equity**
- Cultural Preservation

Appendix

Alignment with SDGs



Integrating Corporate Resources to Unlock Infinite Possibilities for the Next Generation

Taiwan

Introduction of English Teaching Assistant (ETA)

Since 2020, TCC has funded He-Ping Primary School's English Teaching Assistant (ETA) program, providing resident foreign teachers each semester with a cumulative investment of NT\$8,650,000 by 2025. Driven by tribal mothers, the school also leveraged TCC DAKA funds to hire foreign teachers for after-school programs, offering adult education for parents and English tutoring for students.

Cultivating Sports Talent

Since 2022, the Hoping Plant has provided grants for local, national, and international competitions in sports, arts, and traditional indigenous crafts, alongside overseas training programs for those representing Taiwan. In 2025, the plant awarded a total of NT\$508,000 to encourage recipients to strive for honor while elevating the visibility of Heping. Meanwhile, the Suao Plant also contributed NT\$212,000 in 2025, taking concrete action to support the cultivation of athletic talent.

Fostering Academic and Moral Excellence in Local Youth

TCC recognizes that long commutes and the urban-rural educational resource gap hinder academic advancement. To ensure geographic location does not limit educational opportunities for students in remote areas, the Hoping Plant, Ho-Ping Power Company, and Suao Plant introduced scholarships and commuting subsidies in 2020, 2022, and 2019, respectively. As of 2025, a total of NT\$1,961,000 has been disbursed to support their continued education.



ACTION SPOTLIGHT

Avec Vous Initiative: Providing Educational Resources for Children in Africa

CIMPOR Ivory Coast & Cameroon

In 2025, the Ivory Coast plant partnered with local authorities to construct a kindergarten in Attinguié village, providing new equipment and educational supplies to benefit 210 students. Guided by the philosophy that sustainable development is rooted in people, hope, and sharing, the Cameroon plant also donated stationery to improve local learning resources.



Renkli Yaka Program: Enhancing Educational Environments in Local Communities

Türkiye OYAK Cement

In Turkish, "Renkli Yaka" means "colorful collar," aiming to eliminate the divide between blue- and white-collar workers.

Launched in 2024, OYAK Cement's "Renkli Yaka" program fosters voluntary community service across all organizational levels. Under this initiative, Ünye plant employees renovated the local İnönü elementary school in February 2026.

The program modernized the school's recreational areas—including garden restoration and the installation of new sports facilities—creating a safer and more functional environment for students.



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Social Engagement

Education Equity

Cultural Preservation

Appendix

Alignment with SDGs

3 GOOD HEALTH AND WELL-BEING



4 QUALITY EDUCATION



10 REDUCED INEQUALITIES



2025 TCC GROUP HOLDINGS SUSTAINABILITY REPORT

6.3 Cultural Preservation

Culture encompasses the lifestyle, values, and beliefs of an ethnicity and reflects social integration. Traditional cultural arts, whether performed on stage or expressed in everyday behavior, offer valuable guidance and support. Dedicated to long-term cultural development, TCC partners with the C.F. Koo Foundation to preserve and promote Peking Opera. By sponsoring diverse domestic and international events, TCC strives to seamlessly integrate the performing arts into daily life.

C.F. Koo Foundation

In 1997, C.F. Koo Foundation established the Taipei Li-yuan Peking Opera Theatre to regularly stage "New Old Plays" and perform "Peking Opera NeoClassics²". It promotes traditional opera, cultivates performers, and builds audiences, ensuring cultural continuity. Additionally, via domestic and international tours, and the "Koo Cloud Theater" YouTube channel, the beauty of traditional culture is shared worldwide.



C.F. Koo Foundation

Driven by the mission of "Cultural Conservation," the foundation—led by veteran Li Bao-chun and young overseas professionals—actively preserves traditional opera.



ACTION SPOTLIGHT

Taipei Li-yuan Peking Opera Theatre US Tour

3 Cities, 5 Performances, 2,735 Attendees

Resuming U.S. tour after a six-year hiatus, the summer 2025 performances in Texas and Florida garnered widespread acclaim from mainstream audiences and the overseas community. To further showcase Taiwan's cultural soft power, the promotional activities "Peking Opera is Fun" outreach initiative engaged Chinese-language schools, children's hospitals, and community organizations, introducing the art form's fundamental elements and theatrical charm to diverse age groups.

Note 1: "New Old Plays" builds upon classic plays by integrating contemporary elements and refining their essence, renewing the classics to inject new vitality into traditional theater.

Note 2: "Peking Opera NeoClassics" refers to the adaptation of Chinese and Western classics into Peking Opera, integrating Western theatrical elements such as visual effects, stage design, and Hollywood-style scores.



TaipeiEYE

Established in 1999, TaipeiEYE serves as a cultural tourism showcase integrating creativity and commercial viability. Anchored by the Taipei Li-yuan Peking Opera Theatre alongside diverse performing groups, it hosts annual performances at the TCC Building's Shih-Ming Hall, earning consistent recognition from tourism authorities and the travel sector. To ensure accessibility for a global audience, performances feature subtitles in Chinese, English, Japanese, and Korean. Before the performance, "onstage and backstage" activities—including costume tryons, face painting demos, among others—offer deep cultural immersion.

Grassroots Cultivation of Peking Opera

Dedicated to bringing Peking Opera to campuses, C.F. Koo Foundation complements its annual performance seminars by integrating opera elements—such as plots, role types, and character dynamics—with Gender Equality. This approach fosters engaging discussions tailored to younger generations. In 2025, the foundation partnered with 10 educational and cultural institutions to host lectures, reaching 610 participants.



TCC KEY FACTS

2025 Supporting Cultural Development Invested over
NT\$30,302,942

including an annual donation of NT\$14.5 million to the C.F. Koo Foundation.

TaipeiEYE

133 Performances

A total of 14,823 attendees

Japan 37%, South Korea 23%, Europe & America 21%, Southeast Asia 6%

Koo Cloud Theater

1,339,523 views

Appendix

ESG Data	198
Sustainability Disclosure for the Listed Cement Companies	218
GRI Index	221
ESRS Index	229
Third-Party Assurance Statement	232



Overview
Governance
Carbon Reduction
Energy Transition
Employee
Nature
Social Inclusion
Appendix
→ ESG Data
Sustainability Disclosure for the Listed Cement Companies
GRI Index
ESRS Index
Third-Party Assurance Statement

Alignment with SDGs

7.1 ESG Data Sheet

7.1.1 TCC Key Indicators — Governance

7.1.1.1 2025 TCC Tax Information Unit: NT\$1,000

Region	Mainland China (including Taiwan Hong Kong)						Total
	Taiwan	Hong Kong)	Portugal	Türkiye	Africa	Other	
Operating Revenue	50,858,472	30,080,290	29,910,741	28,800,702	1,665,611	8,488,319	149,804,135
Income Tax Payable	2,115,888	279,886	843,585	1,583,521	28,366	84,660	4,935,906
Income Tax Paid	2,378,475	484,796	1,103,345	1,619,014	66,166	162,157	5,813,953
Profit Before Tax	(25,511,812)	(1,931,262)	9,609,468	10,493,191	(329,903)	3,179,512	(4,490,806)
Proportion of Income Tax Paid by Region	41%	8%	19%	28%	1%	3%	100%
Primary Activities	Cement manufacturing and distribution, logistics transportation, manufacturing and distribution of slag powder, sand and gravel screening and ready-mixed concrete sales, waste removal and disposal, resource recycling technology development, etc.						Investment holding, renewable energy and energy storage construction, renewable energy and charging business, electric vehicle charging equipment, production of cement, clinker and concrete .
							Production of cement, clinker and concrete. production.
							Cement grinding and production.
							Investment holding, production and sales of cement ready-mixed concrete, renewable energy and charging business, battery research, development and sales, shipping transportation , and other activities.
Effective Tax Rate							(25.8%)
Cash Tax Rate							(63.23%)

Note 1: The data in the above table is presented without eliminating related party transactions that should be included in the consolidated entity.

Note 2: For the number of employees, please refer to [CH 7.1.3.1 2025 Employee Diversity Composition](#)

7.1.1.2 Financial Performance for the Past Three Years Unit: NT\$ for EPS & DPS; NT\$1,000 for the remainders

Type	Item	2023	2024	2025
Economic Value Generated	Operating Revenue	109,314,335	154,606,511	149,804,135
	Operating Income (Loss)	10,030,160	17,126,617	10,077,592
	Non-operating Income and Expenses	4,326,671	5,706,142	(19,507,088)
Economic Value Distributed	Operating Costs	88,780,566	121,878,486	122,246,546
	EPS	1.06	1.45	(1.60)
	DPS	1	1	0.8
	Cash Dividend per Share	1	1	0.8
	Stock Dividend per Share	0	0	0
	Income Tax	4,352,218	7,203,262	2,433,090
	Employee Wages and Benefits	10,606,016	18,140,124	19,539,878
Economic Value Retained	Retained Earnings	70,576,781	72,771,952	54,358,169

7.1.1.3 Table of Significant Environmental Law/Regulation Violations in 4 Years

Items	2022	2023	2024	2025
Violations of Legal Obligations/Regulations	1	0	6	12
Amount of Fines as the Result of Significant Penalty Cases Above (Unit: NT\$1,000)	425	0	20,610	28,136
Accrued Year-end Penalty Amount (Unit: NT\$1,000)	0	0	0	0

Note 1: A significant penalty event is defined as any single penalty with an amount exceeding USD 10,000.

7.1.1.4 Contributions & Other Spending in 4 Years Unit: NT\$

Total Invested Amount	2022	2023	2024	2025
Lobbying, Interest Representation or Similar	0	0	0	0
Local, Regional or National Political Campaigns / Organizations / Candidates	800,000	700,000	10,000	2,449,343
Trade Associations or Tax-exempt Groups (e.g. Think Tanks)	54,230,375	45,175,671	55,945,099	43,406,247
Other (e.g. Spending Related to Ballot Measures or Referendums)	0	0	0	287,667
Total	55,030,375	45,875,671	55,955,099	46,143,257
Data Coverage	100%	100%	100%	100%

Note 1: The scope expanded in 2024 due to the merger with the European subsidiary, resulting in an increase in public participation expenses compared to the previous three years.



Overview
Governance
Carbon Reduction
Energy Transition
Employee
Nature
Social Inclusion
Appendix
→ ESG Data
Sustainability Disclosure for the Listed Cement Companies
GRI Index
ESRS Index
Third-Party Assurance Statement

Alignment with SDGs

7.1.1.5 Number of Significant Suppliers and Procurement Share in 2025

Items	Cement and Environmental Protection Business (Asia)	Energy for Social Transformation Business	Total
Total Number of Tier-1 Suppliers	3,144	432	3,456
Total Number of Significant Suppliers in Tier-1	249	18	265
Share of Significant Suppliers in Tier-1	7.92%	4.17%	7.67%
Share of Total Spend on Significant Suppliers in Tier-1	81.25%	86.67%	82.69%
Total Number of significant suppliers in non-Tier-1	29	0	29
Total Number of Significant Suppliers (Including Tier-1 and non-Tier-1)	278	18	294

Note 1: Due to overlapping suppliers between Cement and Environmental Protection Business (Asia) and Energy for Social Transformation Business, the "Total" column does not represent a direct sum.

7.1.1.6 Supplier Assessment Performance and Targets for 2025

Supplier Assessment	2025	2025 Target
Total Number of Suppliers Assessed (via Desk Assessments/On-site Assessments)	306	275
Results		
Number of Significant Suppliers with Substantial Actual/Potential Negative Impacts	10	-
Share of Suppliers with Agreed Corrective Action/Improvement Plan	100%	-
Number of Significant Suppliers with Substantial Actual/Potential Negative Impacts that were terminated	1	-
Supplier Corrective Plan Performance and Targets		
Total Number of Significant Suppliers with Substantial Actual/Potential Negative Impacts Expected to Be Supported in Corrective Action Plan Implementation	10	100%
Total Number of Suppliers Supported in Corrective Action Plan Implementation	9	-
Performance and Targets of Suppliers Capacity Building Programs		
Total Number of Suppliers in Capacity Building Programs	148	135

Note 1: The scope covers Cement and Environmental Protection Business in Taiwan and Mainland China.

7.1.1.7 2025 Mean Salary and Median Salary of Full-Time, Non-Managerial Employees and Their Historical Differences in Taiwan Unit: NT\$1,000

Items	2024	2025	Difference
“Mean Salary” of Full-Time, Non-Managerial Employees	1,003	995	-0.80%
“Median Salary” of Full-Time, Non-Managerial Employees	877	895	2.05%

Note 1: This table discloses salary information for Taiwan based on the "Instructions for Reporting Salary Information of Full-Time Employees Not Holding Supervisory Positions" issued by the Taiwan Stock Exchange.

7.1.1.8 2025 Cement and Concrete Production

Product Category	Cement and Environmental Protection Business (Asia)	Cement and Environmental Protection Business (Europe-Africa)
Total Clinker Production (tons)	29,353,566.20	12,607,407.27
Total Cement Production (tons)	31,511,995.55	16,820,936.84
Total Production of Cementitious Materials (tons)	36,800,228.88	17,208,596.94
280 Specification Concrete (m³)	2,983,553.50	-
350 Specification Concrete (m³)	654,686.50	-
420 Specification Concrete (m³)	467,035.50	-
Total concrete production (m³)	5,999,772.00	12,593,706.31



Overview
Governance
Carbon Reduction
Energy Transition
Employee
Nature
Social Inclusion
Appendix
→ ESG Data
Sustainability Disclosure for the Listed Cement Companies
GRI Index
ESRS Index
Third-Party Assurance Statement

Alignment with SDGs

7.1.2 TCC Key Indicators — Environmental

7.1.2.1 Global Environmental Management Certification Unit: site

Certification Item	Cement and Environmental Protection Business (Asia)	Cement and Environmental Protection Business (Europe-Africa)	Energy for Social Transformation Business	Other Business Groups
ISO 14001 Environmental Management System (EMS)	29 sites	2 sites	1 site	9 sites
ISO 14046 Water Footprint	22 sites			
ISO 14064 GHG Management	21 sites	1 site	1 site	7 sites
ISO 14067 Carbon Footprint of Product	5 sites			2 sites
ISO 46001 Water Efficiency Management Systems	6 sites			
ISO 50001 Energy Management Systems	26 sites	2 sites	1 site	2 sites
Clean Production System Certification, Green Factory Label	6 sites			

Note 1: The Cement and Environmental Protection Business (Asia) includes Taiwan and Mainland China, and added Mining Companies in Taiwan and Mainland China to the disclosure scope in 2025; other business groups include Charging and Storage Business (Asia), Charging and Storage Business (Europe), Battery Energy Business, Asset Management Business, and Investment Business.

Note 2: TCC's cement products of Portland Series obtained the Carbon Footprint Label (MOE Taiwan), Carbon Footprint Reduction Label (MOE Taiwan), Gold-rated Green Mark (MOE Taiwan), Low-carbon Product Certification (Mainland China), and EPD Type III Environmental Product Declaration; TCC's concrete products of Portland Series obtained the Carbon Footprint Label (MOE Taiwan), Carbon Footprint Reduction Label (MOE Taiwan), Green Building Material Label (MOI Taiwan), Low-carbon Circular Building Material Certification (MOI Taiwan), and EPD Type III Environmental Product Declaration.

7.1.2.2 GHG Emissions in 4 Years Unit: tCO₂e

Item	2022	2023	2024	2025
Scope 1				
Cement and Environmental Protection Business (Asia)	25,029,617	20,882,254	23,612,270	23,297,449
Cement and Environmental Protection Business (Europe-Africa)	-	-	10,988,088	10,851,215
Energy for Social Transformation Business	7,380,815	7,995,242	6,936,330	7,468,538
Other Business Groups	-	-	-	66,670
Total	32,410,432	28,877,496	41,536,688	41,683,872
Scope 2 (Location-based method)				
Cement and Environmental Protection Business (Asia)	1,065,054	852,329	906,941	930,673
Cement and Environmental Protection Business (Europe-Africa)	-	-	565,894	609,848

Item	2022	2023	2024	2025
Energy for Social Transformation Business	750	1	2,787	541
Other Business Groups	-	-	-	56,444
Total	1,065,804	852,330	1,475,622	1,597,506
Scope 2 (Market-based method)				
Cement and Environmental Protection Business (Asia)	1,065,054	852,329	891,510	896,035
Cement and Environmental Protection Business (Europe-Africa)	-	-	631,975	632,707
Energy for Social Transformation Business	750	1	2,787	541
Other Business Groups	-	-	-	55,805
Total	1,065,804	852,330	1,526,272	1,585,089
Scope 1 + Scope 2 (Market-based) Total				
Cement and Environmental Protection Business (Asia)	26,094,671	21,734,583	24,503,781	24,193,484
Cement and Environmental Protection Business (Europe-Africa)	-	-	11,620,063	11,483,921
Energy for Social Transformation Business	7,381,565	7,995,243	6,939,117	7,469,080
Other Business Groups	-	-	-	122,475
Total	33,476,236	29,729,826	43,062,961	43,268,961
Scope 3				
Cement and Environmental Protection Business (Asia)	17,428	1,385,299	2,329,250	3,282,338
Cement and Environmental Protection Business (Europe-Africa)	-	-	1,867,000	2,890,242
Energy for Social Transformation Business	-	-	-	-
Other Business Groups	-	-	-	1,277,280
Total	17,428	1,385,299	4,196,250	7,449,861

Note 1: The Cement and Environmental Protection Business (Asia) includes Taiwan and Mainland China, and added Mining Companies in Taiwan and Mainland China to the disclosure scope in 2025; other business groups include Charging and Storage Business (Asia), Charging and Storage Business (Europe), Battery Energy Business, Asset Management Business, and Investment Business.

Note 2: The newly disclosed scope in 2023 includes Ho Sheng Mining Co., Ltd. The newly disclosed scope in 2024 includes Longshan, Huaihua, and Liaoning cement plants; Fuzhou and Liuzhou grinding plants; Feng Sheng Enterprise Co., 123 Environmental Protection Technology Co., Ltd., Beijing TCC Environmental Technology Co., Ltd., TCC (Guangdong) Renewable Resources Technology Co. Ltd., CIMPOR, OYAK Cement, and the European Operations Headquarters. The newly disclosed scope in 2025 includes mining company in Taiwan and Mainland China, Energy for Social Transformation Business, Charging and Storage Business (Asia), Charging and Storage Business (Europe), Battery Energy Business, Asset Management Business, and Investment Business.

Note 3: The GHG emissions were inventoried in terms of operational control. The formula used is emissions = activity data × emissions factor (EF) × global warming potential (GWP).

Note 4: The scope 3 emissions cover all 15 categories defined by the GHG Protocol.

Note 5: To comply with the requirements of the Financial Supervisory Commission, this table adopts the greenhouse gas GWP values from IPCC AR6 for calculation.



Overview	
Governance	
Carbon Reduction	
Energy Transition	
Employee	
Nature	
Social Inclusion	
Appendix	
→ ESG Data	
Sustainability Disclosure for the Listed Cement Companies	
GRI Index	
ESRS Index	
Third-Party Assurance Statement	

Alignment with SDGs

7.1.2.3 Total Emissions of Various Greenhouse Gases
for Scope 1 and Scope 2 in 3 Years Unit: tCO₂e

Item	2023	2024	2025
CO ₂			
Cement and Environmental Protection Business (Asia)	26,238,465	23,627,754	23,274,455
Cement and Environmental Protection Business (Europe-Africa)	-	-	10,822,265
Energy for Social Transformation Business	-	-	7,434,071
Other Business Groups	-	-	63,117
Total	26,238,465	23,627,754	41,593,908
CH ₄			
Cement and Environmental Protection Business (Asia)	2,286	2,640	1,829
Cement and Environmental Protection Business (Europe-Africa)	-	-	10,828
Energy for Social Transformation Business	-	-	2,224
Other Business Groups	-	-	108
Total	2,286	2,640	14,989
N ₂ O			
Cement and Environmental Protection Business (Asia)	6,684	6,933	7,294
Cement and Environmental Protection Business (Europe-Africa)	-	-	18,123
Energy for Social Transformation Business	-	-	32,056
Other Business Groups	-	-	764
Total	6,684	6,933	58,237
HFCs			
Cement and Environmental Protection Business (Asia)	7,787	2,052	4,925
Cement and Environmental Protection Business (Europe-Africa)	-	-	-
Energy for Social Transformation Business	-	-	187
Other Business Groups	-	-	1,741
Total	7,787	2,052	6,853
SF ₆			
Cement and Environmental Protection Business (Asia)	395	315	9,048
Cement and Environmental Protection Business (Europe-Africa)	-	-	-
Energy for Social Transformation Business	-	-	-
Other Business Groups	-	-	302
Total	395	315	9,351
Biogenic CO ₂ Emissions			
Cement and Environmental Protection Business (Asia)	-	-	1,101,042
Cement and Environmental Protection Business (Europe-Africa)	-	-	596,003
Energy for Social Transformation Business	-	-	-
Other Business Groups	-	-	16
Total	-	-	1,697,061

Item	2023	2024	2025
GHG Removals			
Cement and Environmental Protection Business (Asia)	-	-	-
Cement and Environmental Protection Business (Europe-Africa)	-	-	-
Energy for Social Transformation Business	-	-	-
Other Business Groups	-	-	-
Total	-	-	-

Note 1: The Cement and Environmental Protection Business (Asia) includes Taiwan and Mainland China, and added Mining Companies in Taiwan and Mainland China to the disclosure scope in 2025; other business groups include Charging and Storage Business (Asia), Charging and Storage Business (Europe), Battery Energy Business, Asset Management Business, and Investment Business.

Note 2: The newly disclosed scope in 2023 includes Ho Sheng Mining Co., Ltd. The newly disclosed scope in 2024 includes Longshan, Huaihua, and Liaoning cement plants; Fuzhou and Liuzhou grinding plants; Feng Sheng Enterprise Co., 123 Environmental Protection Technology Co., Ltd., Beijing TCC Environmental Technology Co., Ltd., and TCC (Guangdong) Renewable Resources Technology Co., Ltd. The newly disclosed scope in 2025 includes Cement and Environmental Protection Business (Europe-Africa), Energy for Social Transformation Business, Charging and Storage Business (Asia), Charging and Storage Business (Europe), Battery Energy Business, Asset Management Business, and Investment Business.

Note 3: To comply with the requirements of the Financial Supervisory Commission, this table adopts the greenhouse gas GWP values from IPCC AR6 for calculation.

Note 4: The 2025 disclosure newly adds "biogenic CO₂ emissions " and "GHG removals."

Note 5: From 2023 to 2025, there were no emissions of PFCs and NFs.

7.1.2.4 Energy Use in 4 Years

Energy Consumption Converted to GJ	2022	2023	2024	2025
Coal				
Cement and Environmental Protection Business (Asia)	93,922,278	76,556,061	64,368,380	81,465,390
Cement and Environmental Protection Business (Europe-Africa)	3,143,557	3,066,636	2,703,927	3,543,996
Energy for Social Transformation Business	73,735,718	79,333,950	69,716,746	75,049,697
Other Business Groups	-	-	-	-
Total	170,801,553	158,956,647	136,789,053	160,059,083
Coke				
Cement and Environmental Protection Business (Asia)	-	-	-	-
Cement and Environmental Protection Business (Europe-Africa)	-	-	-	1,639,722
Energy for Social Transformation Business	-	-	-	-
Other Business Groups	-	-	-	-
Total	-	-	-	1,639,722
Petroleum Coke				
Cement and Environmental Protection Business (Asia)	-	-	-	-
Cement and Environmental Protection Business (Europe-Africa)	29,948,674	29,678,272	32,422,512	28,060,660
Energy for Social Transformation Business	-	-	-	-
Other Business Groups	-	-	-	-
Total	29,948,674	29,678,272	32,422,512	28,060,660



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

ESG Data

Sustainability Disclosure
for the Listed Cement Companies

GRI Index

ESRS Index

Third-Party Assurance Statement

Alignment with SDGs

Energy Consumption Converted to GJ	2022	2023	2024	2025
Diesel				
Cement and Environmental Protection Business (Asia)	527,966	478,730	579,002	644,148
Cement and Environmental Protection Business (Europe-Africa)	311,674	319,410	992,452	1,239,664
Energy for Social Transformation Business	267,204	130,002	303,557	163,935
Other Business Groups	-	-	-	230,689
Total	1,106,844	928,142	1,875,011	2,278,436
Gasoline				
Cement and Environmental Protection Business (Asia)	14,594	14,703	32,474	19,362
Cement and Environmental Protection Business (Europe-Africa)	17,853	26,691	29,284	24,006
Energy for Social Transformation Business	486	246	224	-
Other Business Groups	-	-	-	884
Total	32,933	41,640	61,982	44,252
Purchased Electricity				
Cement and Environmental Protection Business (Asia)	7,365,600	6,390,020	8,626,494	7,233,866
Cement and Environmental Protection Business (Europe-Africa)	5,080,290	5,241,175	5,806,177	5,627,569
Energy for Social Transformation Business	5,451	10	20,312	4,112
Other Business Groups	-	-	-	358,723
Total	12,451,341	11,631,205	14,452,983	13,224,271
Power Gen-eration by Waste Heat Recovery				
Cement and Environmental Protection Business (Asia)	3,308,400	2,794,580	3,374,714	3,044,060
Cement and Environmental Protection Business (Europe-Africa)	267,507	269,414	254,794	349,708
Energy for Social Transformation Business	-	-	-	-
Other Business Groups	-	-	-	-
Total	3,575,907	3,063,994	3,629,508	3,393,768
Natural Gas				
Cement and Environmental Protection Business (Asia)	58	58	320	458
Cement and Environmental Protection Business (Europe-Africa)	233,112	253,732	268,125	363,856
Energy for Social Transformation Business	-	-	-	-
Other Business Groups	-	-	-	346,070
Total	233,170	253,790	268,445	710,385
Alternative Fuels				
Cement and Environmental Protection Business (Asia)	6,336,276	9,862,413	14,856,604	14,356,294
Cement and Environmental Protection Business (Europe-Africa)	9,312,291	10,754,476	11,695,266	14,001,088
Energy for Social Transformation Business	-	-	-	-
Other Business Groups	-	-	-	-
Total	15,648,567	20,616,889	26,551,870	28,357,382
Renewable Energy				
Cement and Environmental Protection Business (Asia)	4,310	60,600	250,531	347,484
Cement and Environmental Protection Business (Europe-Africa)	36,505	41,453	672,284	465,496
Energy for Social Transformation Business	1,161	2,377	2,909	3,031
Other Business Groups	-	-	-	12,048
Total	41,976	104,430	925,724	828,059

Energy Consumption Converted to GJ	2022	2023	2024	2025
Others (Heavy Oil/Fuel Oil/Liquefied Petroleum)				
Cement and Environmental Protection Business (Asia)	-	-	1,098	27,673
Cement and Environmental Protection Business (Europe-Africa)	-	-	-	124,477
Energy for Social Transformation Business	-	-	-	-
Other Business Groups	-	514,882	490,089	2,102,672
Total	-	514,882	491,187	2,254,822

Note 1: The Cement and Environmental Protection Business (Asia) includes Taiwan and Mainland China, and added Mining Companies in Taiwan and Mainland China to the disclosure scope in 2025; other business groups include Charging and Storage Business (Asia), Charging and Storage Business (Europe), Battery Energy Business, Asset Management Business, and Investment Business.

Note 2: The newly disclosed scope in 2024 includes Longshan, Huaihua, and Liaoning cement plants; Fuzhou and Liuzhou grinding plants; Feng Sheng Enterprise Co., 123 Environmental Protection Technology Co., Ltd., Beijing TCC Environmental Technology Co., Ltd., and TCC (Guangdong) Renewable Resources Technology Co., Ltd., CIMPOR, and OYAK Cement. The newly added disclosure scope in 2025 includes Mining Companies in Taiwan and Mainland China, Energy for Social Transformation Business, Charging and Storage Business (Asia), Charging and Storage Business (Europe), Battery Energy Business, Asset Management Business, and Investment Business.

Note 3: The coal calorific values are determined by location: 5,607 kcal/kg for Taiwan, 5,213 kcal/kg for Mainland China, and 5,897 kcal/kg for CIMPOR and OYAK Cement. Calorific values for other fossil fuels are based on data published by the Energy Administration, MOEA: diesel (8,629 kcal/l), gasoline (7,520 kcal/l), electricity (3,600 GJ/million kWh), natural gas (8,710 kcal/m³), coke (6,703 kcal/kg), and petroleum coke (8,521 kcal/kg).

Note 4: Energy consumption is based on data declared to the Energy Administration.

7.1.2.5 2025 Energy Conservation Plans

Energy-Saving Plans	Operating Sites	Energy Saved
Water Dispenser Energy Saving	Bade Branch, Taoyuan2 nd Branch, Kaohsiung Plant	Electricity saved 4,502 kWh
Vehicle Electrification (e.g., Official Cars, Mining Trucks)	Taichung Plant, Ho Sheng Hualien Branch	Gasoline saved 711 L; diesel saved 48,471.58 L
Replacement with Energy-Saving Light Sets, Fixtures, and Lighting Systems	TCC Taipei Plant, Taipei Headquarter, Tucheng Branch, Building Materials Building, Molichel Tainan Plant, TAHO OCEANIA, TAHO CIRCULAR, TAHO AMERICA, Mardin Plant	Electricity saved 25,636 kWh; fuel saved 57 t
Installation or Replacement of Variable Frequency Drives	Taipei Headquarter, Molichel Tainan Plant, Alhandra Plant, Iskenderun Plant, Loulé Plant	Electricity saved 628,806 kWh
Energy Saving in AC and Cooling Systems	Taipei Headquarter, Hoping Plant, Research Building, Molichel Tainan Plant, Suao Plant, Kaohsiung Plant, Loulé Plant	Electricity saved 2,336,932 kWh
Maintenance of Unit Boiler Water Pumps and Fan Systems	Ho-Ping Power Company	Electricity saved 6,246,409 kWh
Switch to High-Performance Drag-Reducing Paint and Graphene Coatings	TAHO VIRTUE, TAHO EUDAIMONIA, TAHO AUSTRALIA , TAHO CIRCULAR	Fuel saved 526 t
Installation of Alternative Maritime Power (AMP) System	TAHO COMPLIANCE, TAHO AFRICA, TAHO OCEANIA	Fuel saved 1,069 t
Fan Modification	Kaili Plant, Anshun Plant, Guangan Plant, Guigang Plant, Jingzhou Plant, Longshan Plant	Electricity saved 9,567,103 kWh



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

ESG Data

Sustainability Disclosure
for the Listed Cement Companies

GRI Index

ESRS Index

Third-Party Assurance Statement

Alignment with SDGs

Energy-Saving Plans	Operating Sites	Energy Saved
Installation of Solar Photovoltaic Systems	Longshan Plant, Adana Plant, Alhandra Plant, Souselas Plant	Electricity saved 13,659,016 kWh
Constructed 43.2 MW/107.3 MWh Energy Storage Station	Yingde Plant	Electricity costs saved NT\$210,075,000
Constructed New Alternative Fuel Storage Shed Project	Liaoning Plant	Coal saved 4,718.34 t
Utilized Furnace Surface Temperature to Preheat Combustion Fan Intake Air to Reduce Gas Consumption	Liuzhou Plant	Blast furnace gas saved 1,641,440 m³
Lines 1 and 2 Calciner Expansion Modification, System Air Duct Resistance Reduction Modification	Longshan Plant	Coal saved 15,210 t
High-speed Airflow Grinding (Rocketmill) Heat Recovery Calciner PID Control Improve Thermal Efficiency	Aslan Plant	Energy saved 325 GJ
Installed New Kiln 6 Satellite Cooler with High-efficiency Lining	Alhandra Plant	Energy saved 116,029 GJ
Other Energy-saving Solutions	Taichung Plant, Taipei Plant, Hoping Plant, Ho-Ping Power Company, E-One Moli Corporation, Anshun Plant, Guigang Plant, Longshan Plant, Adana Plant, Atlante Office, Bolu Plant, Ereğli Plant, İskenderun Plant, Loulé Plant, Mardin Plant, Souselas Plant, Ünye Plant, Ankara Plant, Aslan Plant, Alhandra Plant	Power saved 5,996,265 kWh
Total Energy Saved Converted to GJ		853,459 GJ
Capital Investment		NT\$4,288,607,000
Operating Expenses		NT\$184,705,000
Cost Saved		NT\$726,227,000

7.1.2.6 Air Pollutant Emissions in 4 Years

Item - Nitrogen Oxides (NOx)	2022	2023	2024	2025
Unit - ton				
Region/Business Group				
Cement and Environmental Protection Business (Asia)	13,634.00	9,976.00	9,221.00	9,471.64
Cement and Environmental Protection Business (Europe-Africa)	13,613.30	11,550.10	14,610.83	12,208.91
Energy for Social Transformation Business	2,129.32	2,193.51	1,857.43	2,072.93
Other Business Groups	-	-	3,138.88	4,093.09
Total	29,376.62	23,719.61	28,828.14	27,846.57

Item - Sulfur Oxides (SOx)	2022	2023	2024	2025
Unit - ton				
Region/Business Group				
Cement and Environmental Protection Business (Asia)	1,161.00	1,059.00	1,115.00	1,088.19
Cement and Environmental Protection Business (Europe-Africa)	927.00	1,381.00	1,761.41	913.61
Energy for Social Transformation Business	1,993.20	1,945.75	1,866.56	1,879.21
Other Business Groups	-	-	421.21	153.50
Total	4,081.20	4,385.75	5,164.18	4,034.51

Item - Particulate Matter (PM)				
Unit - ton				
Region/Business Group				
Cement and Environmental Protection Business (Asia)	475.00	570.00	648.00	688.03
Cement and Environmental Protection Business (Europe-Africa)	227.30	198.77	301.94	343.60
Energy for Social Transformation Business	249.52	183.27	132.21	122.87
Other Business Groups	-	-	0.09	1.39
Total	951.82	952.04	1,082.24	1,155.89

Item - Volatile Organic Compounds (VOCs)				
Unit - ton				
Region/Business Group				
Cement and Environmental Protection Business (Asia)	0.0043	0.0042	0.0156	36.6244
Cement and Environmental Protection Business (Europe-Africa)	740.42	728.02	808.6900	633.3291
Energy for Social Transformation Business	0.3200	0.3100	0.3300	0.3120
Other Business Groups	-	-	-	165.4088
Total	0.3243	0.3142	809.0356	835.6743

Item - Dioxins and Furans (PCDD/F)				
Unit - ton				
Region/Business Group				
Cement and Environmental Protection Business (Asia)	0.7576	0.0299	0.0505	0.7699
Cement and Environmental Protection Business (Europe-Africa)	0.1001	0.0867	0.246	0.005
Energy for Social Transformation Business	0.0687	0.0591	0.0419	0.1087
Other Business Groups	-	-	-	-
Total	0.93	0.18	0.3384	0.8836

Item - Mercury Emissions (Hg)				
Unit - ton				
Region/Business Group				
Cement and Environmental Protection Business (Asia)	0.2264	0.1669	0.3787	0.2116
Cement and Environmental Protection Business (Europe-Africa)	0.0015	0.0035	0.0110	0.0511
Energy for Social Transformation Business	0.0485	0.0291	0.0127	0.0048
Other Business Groups	-	-	-	-
Total	0.2764	0.1995	0.4024	0.2674

Note 1: The calculation method is direct measurement of emissions or calculation based on specific on-site data. Sources of coefficients: Emission Factors, Control Efficiencies, and Other Measurement Regulations for Particulate Matter, Lead, Cadmium, Mercury, Arsenic, Hexavalent Chromium, and Dioxins for the Declaration of Air Pollution Control Fees by Stationary Pollution Sources in Public and Private Premises; Appendix 1: Particulate Matter Emission Factors for Industrial Processes; Appendix 3: Emission Factors for Lead, Cadmium, Mercury, Arsenic, Hexavalent Chromium, and Dioxins for Industrial Processes; and Emission Factors for Volatile Organic Compounds for Industrial Processes, Operating Units (Including Equipment Components), Control Efficiencies, and Other Measurement Regulations for the Declaration of Air Pollution Control Fees by Stationary Pollution Sources in Public and Private Premises.



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

→ ESG Data

Sustainability Disclosure
for the Listed Cement Companies

GRI Index

ESRS Index

Third-Party Assurance Statement

Alignment with SDGs

Note 2: The business nature of the RMC Plant is the batching and conveying of finished cement products; therefore, there are no air pollutant emissions.
Note 3: The Cement and Environmental Protection Business (Asia) includes Taiwan and Mainland China, and the disclosure scope added Mining Companies in Taiwan and Mainland China in 2025; other business groups include Charging and Storage Business (Asia), Charging and Storage Business (Europe), Battery Energy Business, Asset Management Business, and Investment Business.
Note 4: The newly added disclosure scope in 2024 includes Longshan, Huaihua, and Liaoning cement plants; Fuzhou and Liuzhou grinding stations; Feng Sheng Enterprise Company, 123 Environmental Protection Technology Co., Ltd., Beijing TCC Environmental Technology Co., Ltd., TCC (Guangdong) Renewable Resources Technology Company Limited, CIMPOR and OYAK Cement. The newly added disclosure scope in 2025 includes Mining Companies in Taiwan and Mainland China, Energy for Social Transformation Business, Charging and Storage Business (Asia), Charging and Storage Business (Europe), Battery Energy Business, Asset Management Business, and Investment Business.
Note 5: VOCs follow local compliance standards: Taiwan sites under Cement and Environmental Protection Business (Asia) calculate storage tank emissions, while its mainland China sites and Cement and Environmental Protection Business (Europe-Africa) measure process emissions (Europe-Africa data third-party verified); Ta-Ho Maritime uses emission factor estimations.

7.1.2.7 Water Resources Usage in 4 Years Unit: Million Liters

Item - Water Withdrawal	2022	2023	2024	2025
Third-Party Water—Municipal Water				
Cement and Environmental Protection Business (Asia)	682.00	812.00	821.00	881.05
Cement and Environmental Protection Business (Europe-Africa)	158.00	192.00	240.00	155.23
Energy for Social Transformation Business	25.00	21.00	29.00	29.00
Other Business Groups	-	-	315.72	257.98
Total	865.00	1,025.00	1,405.72	1,323.25
Third-Party Water — Industrial Water				
Cement and Environmental Protection Business (Asia)	1,275.00	1,504.00	1,672.00	1,402.29
Cement and Environmental Protection Business (Europe-Africa)	444.00	567.00	719.00	53.72
Energy for Social Transformation Business	1,533.00	1,676.00	1,482.00	1,305.00
Other Business Groups	-	-	-	0.06
Total	3,252.00	3,747.00	3,873.00	2,761.07
Surface Water				
Cement and Environmental Protection Business (Asia)	8,466.00	9,451.00	12,173.00	11,446.73
Cement and Environmental Protection Business (Europe-Africa)	281.76	226.04	322.16	247.08
Energy for Social Transformation Business	-	-	53.00	-
Other Business Groups	-	-	-	3.80
Total	8,747.76	9,677.04	12,548.16	11,697.61
Groundwater				
Cement and Environmental Protection Business (Asia)	1,523.00	1,123.00	1,723.00	1,965.60
Cement and Environmental Protection Business (Europe-Africa)	2,881.31	2,600.17	2,982.40	3,874.27
Energy for Social Transformation Business	-	-	-	-
Other Business Groups	-	-	-	-
Total	4,404.31	3,723.17	4,705.40	5,839.87
Seawater				
Cement and Environmental Protection Business (Asia)	-	-	-	-
Cement and Environmental Protection Business (Europe-Africa)	18,569.89	17,888.55	19,928.91	15,151.93
Energy for Social Transformation Business	1,231,339.00	1,274,384.00	1,219,195.00	1,241,287.00
Other Business Groups	-	-	17.54	1,860.93
Total	1,249,908.89	1,292,272.55	1,239,141.45	1,258,299.86

Total	2022	2023	2024	2025
Cement and Environmental Protection Business (Asia)	12,059.00	12,962.00	16,478.00	15,695.67
Cement and Environmental Protection Business (Europe-Africa)	22,334.97	21,473.76	24,192.47	19,482.23
Energy for Social Transformation Business	1,233,127.00	1,276,275.00	1,220,898.00	1,242,621.00
Other Business Groups	-	-	333.26	2,122.77
Total	1,267,520.97	1,310,710.76	1,261,901.73	1,279,921.67

Item - Water Discharge

Surface Water

Cement and Environmental Protection Business (Asia)	-	-	464.00	164.71
Cement and Environmental Protection Business (Europe-Africa)	596.77	523.92	443.26	760.04
Energy for Social Transformation Business	217.00	184.00	184.00	156.00
Other Business Groups	-	-	-	48.52
Total	813.77	707.92	1,091.26	1,129.27

Groundwater

Cement and Environmental Protection Business (Asia)	-	-	-	-
Cement and Environmental Protection Business (Europe-Africa)	20.70	-	71.02	6.12
Energy for Social Transformation Business	-	-	-	-
Other Business Groups	-	-	-	-
Total	20.70	-	71.02	6.12

Seawater

Cement and Environmental Protection Business (Asia)	-	-	-	-
Cement and Environmental Protection Business (Europe-Africa)	18,569.89	17,888.55	19,929.00	15,151.93
Energy for Social Transformation Business	1,231,339.00	1,274,384.00	1,219,195.00	1,241,287.00
Other Business Groups	-	-	-	1,860.93
Total	1,249,908.89	1,292,272.55	1,239,124.00	1,258,299.86

Third-Party Water

Cement and Environmental Protection Business (Asia)	-	-	148.00	106.06
Cement and Environmental Protection Business (Europe-Africa)	18.92	13.10	13.95	24.96
Energy for Social Transformation Business	-	-	-	-
Other Business Groups	-	-	117.34	1.23
Total	18.92	13.10	279.29	132.25

Total

Cement and Environmental Protection Business (Asia)	-	-	612.00	270.76
Cement and Environmental Protection Business (Europe-Africa)	19,206.29	18,425.57	20,457.23	15,943.05
Energy for Social Transformation Business	1,231,556.00	1,274,568.00	1,219,379.00	1,241,443.00
Other Business Groups	-	-	117.34	1,910.68
Total	1,250,762.29	1,292,993.57	1,240,565.57	1,259,567.49

Item - Water Consumption

Water Consumption

Cement and Environmental Protection Business (Asia)	12,059.00	12,962.00	15,865.00	15,424.91
Cement and Environmental Protection Business (Europe-Africa)	3,128.68	3,048.19	3,735.25	3,539.18
Energy for Social Transformation Business	1,571.00	1,707.00	1,519.00	1,178.00
Other Business Groups	-	-	215.92	212.09
Total	16,758.68	17,717.19	21,335.16	20,354.17



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

→ ESG Data

Sustainability Disclosure
for the Listed Cement Companies

GRI Index

ESRS Index

Third-Party Assurance Statement

Alignment with SDGs

Item - Recycled Water	2022	2023	2024	2025
Process Recycled Water				
Cement and Environmental Protection Business (Asia)	98,004.00	72,264.00	6,622.00	3,198.21
Cement and Environmental Protection Business (Europe-Africa)	109.51	165.90	127.09	166.16
Energy for Social Transformation Business	167.00	167.00	201.00	208.00
Other Business Groups	-	-	-	-
Total	98,280.51	72,596.90	6,950.09	3,572.37
Other Recycled Water				
Cement and Environmental Protection Business (Asia)	-	54.00	467.00	108.98
Cement and Environmental Protection Business (Europe-Africa)	324.55	295.85	353.60	1,217.83
Energy for Social Transformation Business	63.00	53.00	61.00	50.00
Other Business Groups	-	-	-	-
Total	387.55	402.85	881.60	1,376.81
Discharged Recycled Water				
Cement and Environmental Protection Business (Asia)	113.00	73.00	89.00	119.73
Cement and Environmental Protection Business (Europe-Africa)	-	-	9.00	-
Energy for Social Transformation Business	230.00	194.00	139.00	150.00
Other Business Groups	-	-	-	-
Total	343.00	267.00	237.00	269.73

Note 1: Water discharged to third parties in Mainland China refers to third-party water supplied for use by other organizations.

Note 2: In 2023, the TCC Hoping Cement Plant in Taiwan estimated water withdrawal based on estimated rainfall runoff; in 2024, it installed a rainwater meter to record actual rainwater withdrawal. The differences between the two years are due to these different calculation methods.

Note 3: Water discharge is disclosed starting from 2024.

Note 4: The Cement and Environmental Protection Business includes Taiwan and Mainland China, and will add Mining Companies in Taiwan and Mainland China to the disclosure scope in 2025. Other business groups include Charging and Storage Business (Asia), Charging and Storage Business (Europe), Battery Energy Business, Asset Management Business, and Investment Business.

Note 5: The newly added disclosure scope in 2024 includes the Longshan, Huaihua, and Liaoning cement plants; the Fuzhou and Liuzhou grinding stations; Feng Sheng, 123 Environmental Protection, Beijing Environmental Protection, TCC Guangdong Renewable Resources Technology Co., Ltd., CIMPOR (excluding the Cape Verde aggregate plant), and OYAK Cement. The newly added disclosure scope in 2025 will include the CIMPOR Cape Verde aggregate plant, Mining Companies in Taiwan and Mainland China, Energy for Social Transformation Business, Charging and Storage Business (Asia), Charging and Storage Business (Europe), Battery Energy Business, Asset Management Business, and Investment Business.

Note 6: Surface water withdrawal includes rivers, mines, lakes, and rainwater/spring water.

Note 7: In 2025, discharged reclaimed water was reclassified from "Water Withdrawal" to "Recycled Water" for disclosure.

7.1.2.8 Water Consumption in Water-Stressed Areas in 4 Years Unit: Million Liters

Item	2022	2023	2024	2025
Water Withdrawal				
Cement and Environmental Protection Business (Asia)	1,471	1,932	1,718	714
Cement and Environmental Protection Business (Europe-Africa)	2,232	1,976	2,383	18,595
Total	3,703	3,908	4,101	19,309
Water Discharge				
Cement and Environmental Protection Business (Asia)	-	-	-	-
Cement and Environmental Protection Business (Europe-Africa)	157	158	109	15,875
Total	157	158	109	15,875

Item	2022	2023	2024	2025
Water Consumption				
Cement and Environmental Protection Business (Asia)	1,471	1,932	1,718	714
Cement and Environmental Protection Business (Europe-Africa)	2,075	1,818	2,274	2,720
Total	3,546	3,750	3,992	3,434
Recycled Water				
Cement and Environmental Protection Business (Asia)	-	-	69	-
Cement and Environmental Protection Business (Europe-Africa)	333	363	399	1,254
Total	333	363	468	1,254

Note 1: Prioritizing Cement and Environmental Protection Business, TCC utilized WRI Aqueduct Water Risk Atlas to assess water stress levels across operating sites in Taiwan, Mainland China, Europe, Türkiye, and Africa, identifying a total of 108 sites located in high water-stressed areas.

7.1.2.9 2025 Water Conservation Plans

Water Conservation Plan	Operating Sites	Water Saved
Rainwater Recovery and Reuse and Related Equipment Upgrades	Zhongli Plant, Taichung Plant, Shanhua Branch, Tucheng Branch, Anping Branch, Xiaogang Branch, Hsinchu Branch, Shengang Branch, Caotun Branch, Luzhu Branch, Kaohsiung Plant, Guishan Branch, Hoping EcoPort, Ho-Ping Power Plant, Manufacturing Plant	Water Saved 404,633 m³
Installation, Upgrade, or Digitalization of Water Metering Systems	Huaying Plant, Guangan Plant, Aslan Plant	Water Saved 269,616 m³
Wastewater Collection and Reuse Treatment Project	Yingde Plant	Water Saved 2,163,802 m³
Recycling and Reuse of Water Resources from Shafts 3A, 1B, and 3B	Hoping Plant	Water Saved 40,295 m³
Driver Water Usage Control System	Taipei Plant	Water Saved 102 m³
Cooling Tower Conductivity Adjustment for Water Conservation	E-One Moli Corporation	Water Saved 3,424 m³
Installation of UV Sterilization Lamps in the Process to Reduce Cleaning Water	E-One Moli Corporation	Water Saved 8,027 m³
Waste Heat Power Generation Water	Huaying Plant	Water Saved 2,370 m³
Production Workshop Replacement of Ball Valves and Pipelines		
Underground In-Kiln Water Pipeline Network Renovation	Huaying Plant	Water Saved 106,192 m³
Fish Pond Water Recovery	Yingde Plant	Water Saved 200,848 m³
Secondary Water Intake Pipeline Leak Detection and Repair	Chongqing Plant	Water Saved 164,838 m³



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

→ ESG Data

Sustainability Disclosure
for the Listed Cement Companies

GRI Index

ESRS Index

Third-Party Assurance Statement

Alignment with SDGs

Water Conservation Plan	Operating Sites	Water Saved
Domestic Water Pipeline Network Renovation	Longshan Plant	Water Saved 199,174 m³
Refurbished Water Treatment Plant (P-P103-24-019), Constructed Quarry Catchment Basin Water Treatment Plant (P-P103-24-036)	Loulé Plant	Water Saved 13,660 m³
Total Water Saved		3,576,982 m³
Capital Investment		NT\$ 199,686,000
Operating Expenses		NT\$824,000
Cost Savings		NT\$3,374,000

7.1.2.10 Waste Treatment in 4 Years Unit: tons

Total Waste	2022	2023	2024	2025
On-site Waste Reuse				
Non-Hazardous Waste				
Cement and Environmental Protection Business (Asia)	9,673.86	7,811.95	11,181.09	19,659.74
Cement and Environmental Protection Business (Europe-Africa)	29,140.12	23,705.75	33,009.04	37,420.06
Energy for Social Transformation Business	-	-	-	96.63
Other Business Groups	-	-	-	6.51
Total	38,813.98	31,517.70	44,190.13	57,182.94
Hazardous Waste				
Cement and Environmental Protection Business (Asia)	-	-	0	10.09
Cement and Environmental Protection Business (Europe-Africa)	-	-	-	176.56
Energy for Social Transformation Business	-	-	-	-
Other Business Groups	-	-	-	142.04
Total	-	-	-	328.69

Total Waste	2022	2023	2024	2025
Outsourced Waste Disposal				
Off-site Landfill Disposal				
Non-hazardous Waste				
Cement and Environmental Protection Business (Asia)	-	-	131.24	101.94
Cement and Environmental Protection Business (Europe-Africa)	914.30	790.20	976.02	1,094.12
Energy for Social Transformation Business	311.82	40.32	-	19.33
Other Business Groups	-	-	-	81.36
Total	1,226.12	830.52	1,107.26	1,296.75
Hazardous Waste				
Cement and Environmental Protection Business (Asia)	-	-	1.24	-
Cement and Environmental Protection Business (Europe-Africa)	24.50	13.10	41.23	116.80
Energy for Social Transformation Business	-	-	-	-
Other Business Groups	-	-	3.67	2.95
Total	24.50	13.10	46.13	119.75

Total Waste	2022	2023	2024	2025
Outsourced Disposal of In-house Waste				
Off-site Incineration (with Energy Recovery)				
Non-hazardous Waste				
Cement and Environmental Protection Business (Asia)	-	-	841.60	611.22
Cement and Environmental Protection Business (Europe-Africa)	155.38	122.38	89.71	16.89
Energy for Social Transformation Business	-	34.58	116.19	15.83
Other Business Groups	-	-	-	339.56
Total	155.38	156.96	1,047.50	983.51

Hazardous Waste				
Cement and Environmental Protection Business (Asia)	-	-	4.54	36.47
Cement and Environmental Protection Business (Europe-Africa)	568.89	262.45	338.35	451.18
Energy for Social Transformation Business	-	-	-	-
Other Business Groups	-	-	-	13.11
Total	568.89	262.45	342.89	500.76

Outsourced Disposal of In-house Waste				
Off-site Incineration (No Energy Recovery)				
Non-hazardous Waste				
Cement and Environmental Protection Business (Asia)	212.71	1,686.68	278.97	300.77
Cement and Environmental Protection Business (Europe-Africa)	-	-	-	0.02
Energy for Social Transformation Business	-	-	-	65.09
Other Business Groups	-	-	239.42	418.01
Total	212.71	1,686.68	518.39	783.89

Hazardous Waste				
Cement and Environmental Protection Business (Asia)	-	-	49.06	11.40
Cement and Environmental Protection Business (Europe-Africa)	57.75	98.52	53.76	41.01
Energy for Social Transformation Business	-	-	-	-
Other Business Groups	-	-	7.70	332.67
Total	57.75	98.52	110.52	385.08

Outsourced Disposal of In-house Waste				
Off-site Recycling and Reuse				
Non-hazardous Waste				
Cement and Environmental Protection Business (Asia)	11,352.67	7,710.54	21,939.22	18,941.90
Cement and Environmental Protection Business (Europe-Africa)	42,881.32	46,924.93	47,375.57	105,629.77
Energy for Social Transformation Business	3,948.64	724.98	2,145.83	65.85
Other Business Groups	-	-	444.89	1,280.78
Total	58,182.63	55,360.45	71,905.50	125,918.30

Hazardous Waste				
Cement and Environmental Protection Business (Asia)	-	-	502.74	407.88
Cement and Environmental Protection Business (Europe-Africa)	1,701.09	1,030.00	498.99	2,888.96
Energy for Social Transformation Business	-	-	-	-
Other Business Groups	-	-	-	6.45
Total	1,701.09	1,030.00	1,001.73	3,303.29



Overview
Governance
Carbon Reduction
Energy Transition
Employee
Nature
Social Inclusion
Appendix
→ ESG Data
Sustainability Disclosure for the Listed Cement Companies
GRI Index
ESRS Index
Third-Party Assurance Statement

Alignment with SDGs

Total Waste	2022	2023	2024	2025	
Total (In-House + Outsourced)					
Non-hazardous Waste					
Cement and Environmental Protection Business (Asia)	21,239.24	17,209.17	34,372.12	39,615.58	
Cement and Environmental Protection Business (Europe-Africa)	73,091.12	71,543.26	81,450.33	144,160.84	
Energy for Social Transformation Business	4,260.46	799.88	2,262.02	262.73	
Other Business Groups	-	-	684.30	2,126.23	
Total	98,590.82	89,552.31	118,768.77	186,165.38	
Hazardous Waste					
Cement and Environmental Protection Business (Asia)	-	-	557.58	465.84	
Cement and Environmental Protection Business (Europe-Africa)	2,352.24	1,404.08	932.33	3,674.51	
Energy for Social Transformation Business	-	-	-	-	
Other Business Groups	-	-	11.37	497.22	
Total	2,352.24	1,404.08	1,501.28	4,637.57	
Grand Total Waste	All Business Groups	100,943.06	90,956.38	120,270.05	190,802.94
(Non-hazardous Waste + Hazardous Waste)					

Note 1: The Cement and Environmental Protection Business (Asia) includes Taiwan and Mainland China, and the disclosure scope added Mining Companies in Taiwan and Mainland China in 2025; other business groups include Charging and Storage Business (Asia), Charging and Storage Business (Europe), Battery Energy Business, Asset Management Business, and Investment Business.

Note 2: The disclosure scope added in 2024 includes Longshan, Huaihua, and Liaoning cement plants; Fuzhou and Liuzhou grinding stations; Feng Sheng, 123 Environmental Protection, Beijing Environmental Protection, and TCC Guangdong Renewable Resources Technology Co., Ltd.; the disclosure scope added in 2025 includes Mining Companies in Taiwan and Mainland China, Cement and Environmental Protection Business (Europe-Africa), Energy for Social Transformation Business, Charging and Storage Business (Asia), Charging and Storage Business (Europe), Battery Energy Business, Asset Management Business, and Investment Business.

Note 3: Waste volumes for 2022–2024 were not separated by region/Business Group, so only subtotals and totals are disclosed.

7.1.2.11 Raw Material Use in 2025 Unit: tons

Category	Cement and Environmental Protection Business (Asia) — Taiwan	Cement and Environmental Protection Business (Asia) — Mainland China	Cement and Environmental Protection Business (Europe-Africa)
Recycled Materials	1,498,936	7,113,364	1,467,636
Non-Renewable Materials	6,161,501	37,020,540	18,544,383
Total Amount of Recycled Materials Used (A)			10,079,936
Total Amount of Non-recycled Materials Used			61,726,423
Total Amount of Materials Used (B)			71,806,359
Proportion of Recycled Materials Used (A/B; %)			14.04%

Note 1: The calculation of raw material usage in Taiwan only covers cement plants.

7.1.2.12 2025 Alternative Raw Materials and Alternative Fuels Usage Unit: tons

Cement and Environmental Protection Business (Asia) — Taiwan		
Resource Reused	Alternative Type	Usage amount
Clay	Alternative Raw Materials	355,023
Coal Ash	Alternative Raw Materials	254,827
Gypsum	Alternative Supplementary Materials	179,413
Imported Low-Alkali Sand	Alternative Raw Materials	125,582
Imported Iron Slag	Alternative Raw Materials	85,900
Bottom Ash	Alternative Raw Materials	84,663
Gypsum	Alternative Supplementary Materials	62,579
Iron Slag (Mineral Sludge)	Alternative Raw Materials	45,532
Recycled Resources	Alternative Fuel	41,552
Coal Ash (Treated)	Alternative Raw Materials	40,694
Others	Alternative Fuel/Alternative Raw Materials/Alternative Clinker/Alternative Supplementary Materials	223,170
Subtotal		1,498,936
Cement and Environmental Protection Business (Asia) — Mainland China		
Desulfurization Gypsum	Alternative Raw Materials/ Alternative Clinker/ Alternative Supplementary Materials	861,844
Fly Ash	Alternative Raw Materials/ Alternative Clinker/ Alternative Supplementary Materials	722,212
Coal Slag	Alternative Raw Materials/ Alternative Clinker/ Alternative Supplementary Materials	715,250
Coal Gangue	Alternative Raw Materials / Alternative Clinker	418,040
Mixed Coal Slag	Alternative Raw Materials / Alternative Clinker	359,776
Steel Slag	Alternative Raw Materials / Alternative Clinker / Alternative Supplementary Materials	337,338
Granulated Blast Furnace Slag	Alternative Raw Materials	310,273
Silica Slag	Alternative Raw Materials / Alternative Clinker	283,855
Waste Textiles (Crushed Materials)	Alternative Fuel	263,171
Copper Slag (Waste Slag)	Alternative Raw Materials	250,628
Others	Alternative Fuel/Alternative Raw Materials/Alternative Clinker/Alternative Supplementary Materials	2,590,978
Subtotal		7,113,364
Cement and Environmental Protection Business (Europe-Africa)		
RDF	Alternative Fuel	242,940
SLAG	Alternative Raw Materials	214,708
Refuse Derived Fuel	Alternative Fuel	164,959
Biomass	Alternative Fuel	151,440
Construction Waste Soils (EWC 170504)	Alternative Raw Materials	116,984
Granulated Blast Furnace Slag	Alternative Raw Materials	107,478
Tyre-Derived Fuel	Alternative Fuel	50,628
Iron Slag	Alternative Raw Materials	43,069
Reduction Slag	Alternative Raw Materials	36,717



- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Appendix
- ESG Data
 - Sustainability Disclosure for the Listed Cement Companies
 - GRI Index
 - ESRS Index
 - Third-Party Assurance Statement

Alignment with SDGs

Cement and Environmental Protection Business (Europe-Africa)		
Resource Reused	Alternative Type	Usage amount
Concrete Waste	Alternative Raw Materials	31,465
Others	Alternative Fuel/Alternative Raw Materials/Alternative Clinker/Alternative Supplementary Materials	307,250
Subtotal		1,467,636

Resource Reused Alternative Items	Cement and Environmental Protection Business (Asia) — Taiwan	Cement and Environmental Protection Business (Asia) — Mainland China	Cement and Environmental Protection Business (Europe-Africa)
Alternative Raw Materials	1,117,813	3,599,949	743,399
Alternative Fuel	122,987	749,035	688,933
Alternative Clinker	16,144	2,152,680	-
Alternative Supplementary Materials	241,992	611,700	35,304
Total	10,079,936		

Note 1: Calcined clay is a supplementary cementitious material (SCM) produced by calcining clay. It can partially replace clinker in cement, reducing the clinker factor and the carbon footprint of cement products.



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

→ ESG Data

Sustainability Disclosure
for the Listed Cement Companies

GRI Index

ESRS Index

Third-Party Assurance Statement

Alignment with SDGs

7.1.3 TCC Key Indicators — Social

7.1.3.1 2025 Employee Diversity Composition Unit: people

Employee Headcount Statistics

Employment Relationship		Female	Male
Permanent Employees	Cement and Environmental Protection Business (Asia)	1,275	5,019
	Cement and Environmental Protection Business (Europe-Africa)	309	3,544
	Energy for Social Transformation Business	27	268
	Other Business Groups	625	1,324
	Total	2,236	10,155
TOTAL		12,391	
Temporary Employees	Cement and Environmental Protection Business (Asia)	105	582
	Cement and Environmental Protection Business (Europe-Africa)	35	590
	Energy for Social Transformation Business	0	0
	Other Business Groups	8	12
	Total	148	1,184
TOTAL		1,332	
Non-guaranteed Hours Em-ployees	Cement and Environmental Protection Business (Asia)	0	0
	Cement and Environmental Protection Business (Europe-Africa)	0	0
	Energy for Social Transformation Business	0	0
	Other Business Groups	6	10
	Total	6	10
TOTAL		16	
Full-time Employees	Cement and Environmental Protection Business (Asia)	1,375	5,586
	Cement and Environmental Protection Business (Europe-Africa)	344	4,134
	Energy for Social Transformation Business	27	268
	Other Business Groups	629	1,330
	Total	2,375	11,318
TOTAL		13,693	
Part-time Employees	Cement and Environmental Protection Business (Asia)	5	15
	Cement and Environmental Protection Business (Europe-Africa)	0	0
	Energy for Social Transformation Business	0	0
	Other Business Groups	10	16
	Total	15	31
TOTAL		46	
Total	Cement and Environmental Protection Business (Asia)	1,380	5,601
	Cement and Environmental Protection Business (Europe-Africa)	344	4,134
	Energy for Social Transformation Business	27	268
	Other Business Groups	639	1,346
	Total	2,390	11,349
TOTAL		13,739	

Note 1: The Cement and Environmental Protection Business (Asia) includes Taiwan and Mainland China, and added the Mining Companies in Taiwan and Mainland China to the disclosure scope in 2025; other business groups include the Charging and Storage Business (Asia), Charging and Storage Business (Europe), Battery Energy Business, Asset Management Business, and Investment Business.

Full-time Employee Headcount Statistics

Item / Breakdown by Type		Female	Male
Age			
Under 30 (exclusive)	Cement and Environmental Protection Business (Asia)	106	334
	Cement and Environmental Protection Business (Europe-Africa)	68	692
	Energy for Social Transformation Business	5	24
	Other Business Groups	102	219
	Total	281	1,269
TOTAL		1,550	
30-50 years old	Cement and Environmental Protection Business (Asia)	1,181	3,835
	Cement and Environmental Protection Business (Europe-Africa)	198	2,634
	Energy for Social Transformation Business	14	164
	Other Business Groups	481	920
	Total	1,874	7,553
TOTAL		9,427	
Over 50 (exclusive)	Cement and Environmental Protection Business (Asia)	88	1,417
	Cement and Environmental Protection Business (Europe-Africa)	78	808
	Energy for Social Transformation Business	8	80
	Other Business Groups	55	182
	Total	229	2,487
TOTAL		2,716	
Education			
Ph.D.	Cement and Environmental Protection Business (Asia)	0	5
	Cement and Environmental Protection Business (Europe-Africa)	3	3
	Energy for Social Transformation Business	0	0
	Other Business Groups	11	33
	Total	14	41
TOTAL		55	
Master's Degree	Cement and Environmental Protection Business (Asia)	69	124
	Cement and Environmental Protection Business (Europe-Africa)	57	182
	Energy for Social Transformation Business	4	17
	Other Business Groups	148	288
	Total	278	611
TOTAL		889	
Bachelor's Degree	Cement and Environmental Protection Business (Asia)	362	841
	Cement and Environmental Protection Business (Europe-Africa)	165	529
	Energy for Social Transformation Business	17	93
	Other Business Groups	285	641
	Total	829	2,104
TOTAL		2,933	



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

ESG Data

Sustainability Disclosure
for the Listed Cement Companies

GRI Index

ESRS Index

Third-Party Assurance Statement

Alignment with SDGs

Item / Breakdown by Type		Female	Male
Education			
Associate Degree	Cement and Environmental Protection Business (Asia)	289	897
	Cement and Environmental Protection Business (Europe-Africa)	20	466
	Energy for Social Transformation Business	5	71
	Other Business Groups	165	297
	Total	479	1,731
TOTAL			2,210
High School and Below	Cement and Environmental Protection Business (Asia)	655	3,719
	Cement and Environmental Protection Business (Europe-Africa)	100	2,952
	Energy for Social Transformation Business	1	87
	Other Business Groups	50	102
	Total	806	6,860
TOTAL			7,666
Job Category		7	110
Executive Managers	Cement and Environmental Protection Business (Asia)	11	43
	Cement and Environmental Protection Business (Europe-Africa)	0	2
	Energy for Social Transformation Business	12	39
	Other Business Groups	30	194
	Total		224
TOTAL			
Mid-level Managers	Cement and Environmental Protection Business (Asia)	83	358
	Cement and Environmental Protection Business (Europe-Africa)	19	107
	Energy for Social Transformation Business	4	42
	Other Business Groups	70	215
	Total	176	722
TOTAL			898
Junior Managers	Cement and Environmental Protection Business (Asia)	133	709
	Cement and Environmental Protection Business (Europe-Africa)	34	274
	Energy for Social Transformation Business	1	2
	Other Business Groups	87	222
	Total	255	1,207
TOTAL			1,462
Professionals	Cement and Environmental Protection Business (Asia)	348	923
	Cement and Environmental Protection Business (Europe-Africa)	224	558
	Energy for Social Transformation Business	12	93
	Other Business Groups	239	377
	Total	823	1,951
TOTAL			2,774
Direct Personnel	Cement and Environmental Protection Business (Asia)	804	3,486
	Cement and Environmental Protection Business (Europe-Africa)	56	3,152
	Energy for Social Transformation Business	10	129
	Other Business Groups	223	477
	Total	1,093	7,244
TOTAL			8,337

Item / Breakdown by Type		Female	Male
Number of Employees			
Non-employee Workers	Cement and Environmental Protection Business (Asia)	327	494
	Cement and Environmental Protection Business (Europe-Africa)	148	2,270
	Energy for Social Transformation Business	21	129
	Other Business Groups	1	3
	Total	497	2,896
TOTAL			3,393

Note 1: Definition of managers in Taiwan: Executive managers are directors and assistant vice presidents (inclusive) and above; mid-level managers are managers and assistant managers; junior managers are supervisors; professionals are engineers, administrators, researchers, and management associates; and direct personnel are other positions, e.g., mixer operators, machine operators, clerks, etc.

Note 2: Definition of managers in Mainland China: Executive Managers are vice presidents (inclusive) and above; mid-level managers are mid-level managers; junior managers are level 1-3 operators; professionals are level 4-5 operators; and direct personnel are level 6-10 operators.

Note 3: Non-employee workers such as personnel dispatched by external companies: cleaners, security guards, chefs/kitchen staff, water pump operators, and landscaping personnel.

Note 4: The definition of part-time employees includes rehired elderly personnel.

Note 5: Employees with disabilities: The number of employees with disabilities in the Cement and Environmental Protection Business (Asia) (including Wanching, Ho Sheng Mining Company, mining companies, environmental technology companies, and Hong Kong Cement) is 4 females and 33 males.

Note 6: The above information is based on the number of employees as of December 31, 2025. The disclosure scope covers cement plants, RMC plants, grinding stations, and consolidated financial reporting subsidiaries.

Note 7: The Cement and Environmental Protection Business (Asia) includes Taiwan and Mainland China and added the Mining Companies in Taiwan and Mainland China to the disclosure scope in 2025; other business groups include the Charging and Storage Business (Asia), Charging and Storage Business (Europe), Battery Energy Business, Asset Management Business, and Investment Business.

7.1.3.2 2025 Employee Diversity by Nationality Unit: people

Item/Breakdown by Type		
Nationality/Region	Number of Full-time Employees	Number of Management Positions
Taiwan		
Cement and Environmental Protection Business (Asia)	1,694	297
Cement and Environmental Protection Business (Europe-Africa)	0	0
Energy for Social Transformation Business	295	51
Other Business Groups	1,282	22
Total	3,271	370
Percentage of Total Workforce	23.91%	20.01%
Mainland China		
Cement and Environmental Protection Business (Asia)	5,240	960
Cement and Environmental Protection Business (Europe-Africa)	0	0
Energy for Social Transformation Business	0	0
Other Business Groups	39	12
Total	5279	972
Percentage of Total Workforce	38.59%	52.57%



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

→ ESG Data

Sustainability Disclosure
for the Listed Cement Companies

GRI Index

ESRS Index

Third-Party Assurance Statement

Alignment with SDGs

Item/Breakdown by Type

Nationality/Region	Number of Full-time Employees	Number of Management Positions
Türkiye		
Cement and Environmental Protection Business (Asia)	0	0
Cement and Environmental Protection Business (Europe-Africa)	2,873	201
Energy for Social Transformation Business	0	0
Other Business Groups	0	0
Total	2873	201
Percentage of Total Workforce	21.00%	10.87%
Portugal		
Cement and Environmental Protection Business (Asia)	0	0
Cement and Environmental Protection Business (Europe-Africa)	1,155	200
Energy for Social Transformation Business	0	0
Other Business Groups	11	2
Total	1166	202
Percentage of Total Workforce	8.52%	10.92%
Other		
Cement and Environmental Protection Business (Asia)	27	6
Cement and Environmental Protection Business (Europe-Africa)	437	35
Energy for Social Transformation Business	0	0
Other Business Groups	625	63
Total	1089	104
Percentage of Total Workforce	7.96%	5.62%
TOTAL		
Cement and Environmental Protection Business (Asia)	6961	1,263
Cement and Environmental Protection Business (Europe-Africa)	4,465	436
Energy for Social Transformation Business	295	51
Other Business Groups	1957	99
Total	13678	1849
Percentage of Total Workforce	100.00%	100.00%

Note 1: Other countries include: Angola, Australia, Benin, Brazil, United Kingdom, Burkina Faso, Cameroon, Canada, Cape Verde, Congo, France, Gabon, Ghana, Guinea-Bissau, Guinea, Iran, Italy, Ivory Coast, Kazakhstan, Kosovo, Mali, Moldova, Morocco, Mozambique, Peru, Romania, Senegal, Spain, Sri Lanka, Togo, Tunisia, United States, Ukraine, Venezuela, Indonesia, and Central African Republic.

Note 2: The above information is based on the number of employees as of December 31, 2025. The disclosure scope covers cement plants, RMC plants, grinding stations, and consolidated financial reporting subsidiaries.

Note 3: The Cement and Environmental Protection Business (Asia) includes Taiwan and Mainland China, and added the Mining Companies in Taiwan and Mainland China to the disclosure scope in 2025; other business groups include the Charging and Storage Business (Asia), Charging and Storage Business (Europe), Battery Energy Business, Asset Management Business, and Investment Business.

7.1.3.3 2025 Employee Diversity Composition

Ethnicity	Number of Full-time Employees			Number of Management Roles				
	Percentage of Total Workforce			Percentage of Total Workforce				
Taiwan	Mainland China	Total	Taiwan	Mainland China	Total			
Asia	2,595	4,044	6,639	89%	301	850	1,151	89%
Indigenous and Minorities	251	585	836	11%	19	127	146	11%
Total	2,846	4,629	7,475	100%	320	977	1,297	100%

7.1.3.4 2025 New Hires and Turnover

New Hires	Cement and Environmental Protection Business (Asia)		Cement and Environmental Protection Business (Europe-Africa)		Energy for Social Transformation Business		Other Business Groups		Total	
Gender	Number	%	Number	%	Number	%	Number	%	Number	%
Female	95	1.36%	66	1.47%	1	0.34%	140	7.05%	302	2.20%
Male	215	3.08%	669	14.94%	29	9.83%	301	15.16%	1,214	8.84%
Age										
Under 30	75	1.07%	242	5.40%	13	4.41%	143	7.2%	473	3.44%
30-50	213	3.05%	419	9.36%	13	4.41%	276	13.90%	921	6.70%
Over 50	22	0.32%	74	1.65%	4	1.36%	22	1.11%	122	0.89%
Total	310	4.44%	735	16.41%	30	10.17%	441	22.22%	1,516	11.03%

Departing Employees	Cement and Environmental Protection Business (Asia)		Cement and Environmental Protection Business (Europe-Africa)		Energy for Social Transformation Business		Other Business Groups		Total	
Gender	Number	%	Number	%	Number	%	Number	%	Number	%
Female	429	6.15%	37	0.83%	4	1.36%	235	11.84%	705	5.13%
Male	1,280	18.34%	616	13.67%	28	9.49%	563	28.36%	2,487	18.10%
Age										
Under 30	126	1.80%	149	3.33%	13	4.41%	171	8.61%	459	3.34%
30-50	1,143	16.37%	385	8.60%	13	4.41%	588	29.62%	2,129	15.50%
Over 50	440	6.30%	119	2.66%	6	2.03%	39	1.96%	604	4.40%
Total	1709	24.48%	653	14.58%	32	10.85%	798	40.20%	3,192	23.23%



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

ESG Data

Sustainability Disclosure
for the Listed Cement Companies

GRI Index

ESRS Index

Third-Party Assurance Statement

Alignment with SDGs

Voluntary Resignations	Cement and Environmental Protection Business (Asia)		Cement and Environmental Protection Business (Europe-Africa)		Energy for Social Transformation Business		Other Business Groups		Total	
Gender	Number	%	Number	%	Number	%	Number	%	Number	%
Female	70	1.00%	24	0.54%	4	1.36%	225	11.34%	323	2.35%
Male	231	3.31%	342	7.64%	27	9.15%	553	27.86%	1,153	8.39%
Age										
Under 30	64	0.92%	98	2.19%	13	4.41%	168	8.46%	343	2.50%
30-50	192	2.75%	221	4.94%	12	4.07%	570	28.72%	995	7.24%
Over 50	45	0.64%	47	1.05%	6	2.03%	40	2.02%	138	1.00%
Total	301	4.31%	366	8.17%	31	10.51%	778	39.19%	1,476	10.74%

Note 1: Voluntary turnover excludes retirees.
Note 2: New hire and turnover rates are calculated based on the total number of employees in the cement business entities (including mining) in each region.
Note 3: The Cement and Environmental Protection Business (Asia) includes Taiwan and Mainland China, and the disclosure scope added Mining Companies in Taiwan and Mainland China in 2025; other business groups include the Charging and Storage Business (Asia), Charging and Storage Business (Europe), Battery Energy Business, Asset Management Business, and Investment Business.
Note 4: Taiwan had a total of 621 new hires (accounting for 17.55% of the total employees in Taiwan) and 973 turnovers (accounting for 27.49% of the total employees in Taiwan); Mainland China had a total of 36 new hires (accounting for 0.78% of the total employees in Mainland China) and 1,490 turnovers (accounting for 32.44% of the total employees in Mainland China); EMEA had a total of 859 new hires (accounting for 17.39% of the total employees in EMEA) and 707 turnovers (accounting for 14.31% of the total employees in EMEA).

7.1.3.5 Number of New Hires in the Past Five Years and Internal Vacancy Fill Rate Statistics

Number of New Hires	2021	2022	2023	2024	2025
Cement and Environmental Protection Business (Asia)	145	114	213	218	310
Cement and Environmental Protection Business (Europe-Africa)	435	467	888	913	735
Energy for Social Transformation Business	-	-	-	21	30
Other Business Groups	-	-	-	-	441
Total	580	581	1,101	1,152	1,516
Internal Vacancy Fill Rate	48.00%	44.00%	44.00%	82.00%	67.00%

Note 1: The disclosure scope of the Cement and Environmental Protection Business covers cement plants, RMC plants, and grinding stations.
Note 2: The disclosure scope for the number of new hires added the Energy for Social Transformation Business in 2024; in 2025, it added Mining Companies in Taiwan and Mainland China, Charging and Storage Business (Asia), Charging and Storage Business (Europe) (NHOA Energy and Atlante), Battery Energy Business, Asset Management Business, and Investment Business.
Note 3: The disclosure scope of internal vacancy fill rate covered the Cement and Environmental Protection Business (Asia) from 2021 to 2024. From 2025, the disclosure scope was expanded to the entire Group, including the Cement and Environmental Protection Business (Asia), Cement and Environmental Protection Business (Europe-Africa), Energy for Social Transformation Business, Charging and Storage Business (Asia), Charging and Storage Business (Europe), Battery Energy Business, Asset Management Business, and Investment Business.

7.1.3.6 Employee Turnover Rate in the Past Two Years

Resigned Employees	Female	Male	Under 30 (Exclusive)	30-50 Years Old	Over 50 (Exclusive)	Total
2024						
Cement and Environmental Protection Business (Asia)	2.80%	8.24%	2.06%	7.22%	1.76%	11.04%
Cement and Environmental Protection Business (Europe-Africa)	0.96%	10.90%	5.37%	2.98%	3.51%	11.86%
Energy for Social Transformation Business	3.06%	27.21%	6.12%	17.69%	6.46%	30.27%
Other Business Groups	-	-	-	-	-	-
Total	2.12%	9.67%	3.38%	5.89%	2.52%	11.79%

2025						
Cement and Environmental Protection Business (Asia)	6.79%	20.00%	1.90%	18.06%	6.84%	26.80%
Cement and Environmental Protection Business (Europe-Africa)	0.83%	13.67%	3.33%	8.55%	2.61%	14.49%
Energy for Social Transformation Business	1.36%	9.49%	4.41%	4.41%	2.03%	10.85%
Other Business Groups	12.09%	28.06%	8.92%	29.42%	1.81%	40.15%
Total	5.43%	18.82%	3.51%	16.22%	4.52%	24.25%

Voluntarily Resigned Employees						
2024						
Cement and Environmental Protection Business (Asia)	1.48%	5.74%	1.48%	4.85%	0.89%	7.22%
Cement and Environmental Protection Business (Europe-Africa)	0.96%	10.90%	5.37%	2.98%	3.51%	11.86%
Energy for Social Transformation Business	1.02%	2.72%	1.70%	1.70%	0.34%	3.74%
Other Business Groups	-	-	-	-	-	-
Total	1.28%	7.57%	2.93%	4.07%	1.85%	8.84%
2025						
Cement and Environmental Protection Business (Asia)	1.11%	3.56%	0.93%	3.03%	0.71%	4.67%
Cement and Environmental Protection Business (Europe-Africa)	0.54%	7.73%	2.19%	4.98%	1.09%	8.26%
Energy for Social Transformation Business	1.36%	9.49%	4.41%	4.41%	2.03%	10.85%
Other Business Groups	10.73%	27.25%	7.81%	28.21%	1.96%	37.98%
Total	2.38%	8.72%	2.49%	7.55%	1.06%	11.10%

Note 1: Voluntary turnover excludes retirees.
Note 2: The turnover rate is calculated based on the total number of employees in the respective business entity.
Note 3: The Cement and Environmental Protection Business (Asia) includes Taiwan and Mainland China, and the disclosure scope added Mining Companies in Taiwan and Mainland China in 2025; other business groups include the Charging and Storage Business (Asia), Charging and Storage Business (Europe), Battery Energy Business, Asset Management Business, and Investment Business.

7.1.3.7 Scope of Engagement Survey in the Past Five Years

Item	2021	2022	2023	2024	2025
Historical Engagement Survey Scores	96.10%	90.00%	92.96%	87.00%	82.00%
Response Rate	96.71%	97.60%	95.00%	98.00%	94.00%



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

ESG Data

Sustainability Disclosure
for the Listed Cement Companies

GRI Index

ESRS Index

Third-Party Assurance Statement

Alignment with SDGs

7.1.3.8 2025 Training Hours (Unit: Hours) and Investment

Item		Age			Job Level						Average Hours
		<30	30-50	>50	Executive Managers	Mid-level Managers	Junior Managers	Professional Staff	Direct Staff	Total Hours	
Cement and Environmental Protection Business (Asia)	♀	17,995	21,357	1,904	60	2,407	3,526	12,701	22,607	41,301	30.00
Cement and Environmental Protection Business (Europe-Africa)	♂	69,856	73,720	40,556	2,287	10,736	21,474	28,036	121,556	184,088	33.00
Energy for Social Transformation Business	♀	1,393	4,134	1,364	298	1,297	598	3,721	984	6,898	20.10
Other Business Groups	♂	13,628	28,394	6,590	446	1,346	4,617	5,400	37,379	49,188	11.90
	♀	303	731	362	0	154	117	614	510	1,395	51.70
	♂	1,065	7,111	4,332	67	2,027	118	4,814	5,482	12,508	46.70
	♀	2,044	12,787	1,281	129	1,978	776	4,701	8,528	16,113	25.60
	♂	5,318	23,256	4,920	811	6,950	2,771	9,391	13,572	33,496	25.20
Total Hours		111,602	171,489	61,308	4,099	26,894	33,998	69,378	210,617	344,986	-
Average Hours		72	18	23	18	30	23	25	25	-	25.20
Average Training and Development Cost per Full-time Employee											NT\$ 3,962

Note 1: The disclosure scope covers cement plants, RMC plants, grinding stations, and consolidated subsidiaries.

Note 2: The Cement and Environmental Protection Business (Asia) includes Taiwan and Mainland China, and added Mining Companies in Taiwan and Mainland China to the disclosure scope in 2025; other business groups include the Charging and Storage Business (Asia), Charging and Storage Business (Europe), Battery Energy Business, Asset Management Business, and Investment Business.

7.1.3.9 Return on Human Capital Investment over the Past Five Years

	2021	2022	2023	2024	2025
Human Capital ROI	12.7	11.7	10.3	8.7	7.77

Note 1: Return on human capital investment = (operating revenue - (operating expenses - employee benefit expenses)) / employee benefit expenses.

Note 2: The disclosure scope covers cement plants, RMC plants, grinding stations, and consolidated subsidiaries.

7.1.3.10 2025 Parental Leave Usage

Item	2025	
	Female	Male
Number of Employees Entitled to Parental Leave in the Year (A)	18	119
Number of Employees Applying for Parental Leave in the Year (B)	6	15
Expected Number of Employees Returning to Work in the Year (C)	6	9
Actual Number of Employees Returning to Work (D)	5	8
Number of Employees Still Employed 12 Months After Return (E)	6	5
Return to Work Rate After Leave (D/C)	83.00%	89.00%
Retention Rate One Year After Return (E/D of Previous Year)	100.00%	71.00%

Note 1: The number of employees eligible for unpaid parental leave in the year refers to Full-time employees who have been employed for at least six months.

Note 2: The disclosure scope covers cement plants, RMC plants, grinding stations, and consolidated subsidiaries.

7.1.3.11 2025 Occupational Injury Statistics

Employee Occupational Injuries					
Site	Cement and Environmental Protection Business (Asia)	Cement and Environmental Protection Business (Europe)	Energy for Social Transformation Business	Other Business Groups	Total
Occupational Injuries					
Number of Fatalities	0	0	0	0	0
Number of High-consequence Work-related Injuries	0	7	0	0	7
Number of Recordable Work-related Injuries	22	123	1	19	165
Number of Lost Time Injuries	19	35	1	19	74
Fatality Rate	0.00	0.00	0.00	0.00	0.00
High-consequence Work-related Injury Rate	0.00	0.61	0.00	0.00	0.21
Total Recordable Injury Frequency Rate (TRIFR)	1.34	10.71	1.72	4.24	5.00
Lost Time Injury Frequency Rate (LTIFR)	1.16	3.05	1.72	4.24	2.24
Actual Working Hours	16,435,219	11,484,969	580,560	4,483,158	32,983,906
Occupational Diseases (Number of Cases)	0	2	0	0	2
Silicosis (Number of Cases)	0	0	0	0	0



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

ESG Data

Sustainability Disclosure
for the Listed Cement Companies

GRI Index

ESRS Index

Third-Party Assurance Statement

Alignment with SDGs

Contractor Occupational Injuries					
Site	Cement and Environmental Protection Business (Asia)	Cement and Environmental Protection Business (Europe)	Energy for Social Transformat on Business	Other Business Groups	Total
Occupational Injuries					
Number of Fatalities	0	0	0	0	0
Number of High-consequence Work-related Injuries	0	1	0	0	1
Number of Recordable Work-related Injuries	5	71	1	6	83
Number of Lost Time Injuries	5	10	1	1	17
Fatality Rate	0.00	0.00	0.00	0.00	0.00
High-consequence Work-related Injury Rate	0.00	0.10	0.00	0.00	0.06
Total Recordable Injury Frequency Rate (TRIFR)	0.83	7.41	2.10	5.74	4.84
Lost Time Injury Frequency Rate (LTIFR)	0.83	1.04	2.10	0.96	0.99
Actual Working Hours	6,042,162	9,585,304	476,540	1,044,915	17,148,921
Occupational Diseases (Number of Cases)	0	0	0	0	0
Silicosis (Number of Cases)	0	0	0	0	0

Note 1: Occupational injury data is primarily based on monthly occupational disaster statistics reported by each plant.
Note 2: The main types of occupational injuries are caught-in/between, struck-by, falls, and cuts.
Note 3: Fatality rate = (Number of fatalities / Total actual working hours) x 1,000,000
Note 4: Severe occupational injury rate = (Number of severe occupational injuries / Total actual working hours) x 1,000,000
Note 5: Total recordable incident frequency rate (TRIFR) = (Number of recordable injuries / Total actual working hours) x 1,000,000
Note 6: Lost time injury frequency rate (LTIFR) = (Number of lost time injuries / Total actual working hours) x 1,000,000
Note 7: Some actual working hours are estimated by multiplying the number of plant entries by 8 hours.
Note 8: The disclosure scope covers cement plants, RMC plants, grinding stations, and consolidated subsidiaries.
Note 9: The Cement and Environmental Protection Business (Asia) includes Taiwan and Mainland China, and the disclosure scope was expanded in 2025 to include Mining Companies in Taiwan and Mainland China; other business groups include the Charging and Storage Business (Asia), Charging and Storage Business (Europe), Battery Energy Business, Asset Management Business, and Investment Business.

7.1.3.12 Occupational Injury Statistics for the Past Five Years

	Employees	Contractors
2021		
Number of fatalities	0	1
Lost-Time Injury Frequency Rate (LTIFR)	0.55	0
Total Recordable Injury Frequency Rate (TRIFR)	0.32	0
2022		
Number of fatalities	0	0
Lost-Time Injury Frequency Rate (LTIFR)	1.00	0.75
Total Recordable Injury Frequency Rate (TRIFR)	1.59	2.20
2023		
Number of fatalities	0	2
Lost-Time Injury Frequency Rate (LTIFR)	0.80	0.60
Total Recordable Injury Frequency Rate (TRIFR)	1.70	1.70
2024		
Number of fatalities	0	4
Lost-Time Injury Frequency Rate (LTIFR)	1.94	3.25
Total Recordable Injury Frequency Rate (TRIFR)	1.94	3.66
2025		
Number of fatalities	0	0
Lost-Time Injury Frequency Rate (LTIFR)	2.24	0.99
Total Recordable Injury Frequency Rate (TRIFR)	5.00	4.84

Note 1: The disclosure scope covers cement plants, RMC plants, grinding stations, and consolidated subsidiaries.

7.1.3.13 Total Injury Index in Taiwan for the Past Four Years

		Taiwan ¹	
	Category	Employees	Contractors
2022			
Lost Time Injury Frequency Rate per Million Working Hours	(FR)	1.65	1.72
Lost Time Injury Severity Rate per Million Working Hours	(SR)	81.00	14.00
Total Injury Index	(FSI)	0.36	0.15
2023			
Lost Time Injury Frequency Rate per Million Working Hours	(FR)	0.81	1.70
Lost Time Injury Severity Rate per Million Working Hours	(SR)	25.00	6,810.00
Total Injury Index	(FSI)	0.14	3.40
2024			
Lost Time Injury Frequency Rate per Million Working Hours	(FR)	0.17	0.61
Lost Time Injury Severity Rate per Million Working Hours	(SR)	47.70	1,855.00
Total Injury Index	(FSI)	0.09	1.07
2025			
Lost Time Injury Frequency Rate per Million Working Hours	(FR)	1.91	1.46
Lost Time Injury Severity Rate per Million Working Hours	(SR)	10.70	13.10
Total Injury Index	(FSI)	0.14	0.14



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

→ ESG Data

Sustainability Disclosure
for the Listed Cement Companies

GRI Index

ESRS Index

Third-Party Assurance Statement

Alignment with SDGs

Ho Sheng Mining Company

2022	Category	Employees	Contractors
Lost Time Injury Frequency Rate per Million Working Hours	(FR)	0.00	0.00
Lost Time Injury Severity Rate per Million Working Hours	(SR)	0.00	0.00
Total Injury Index	(FSI)	0.00	0.00
2023			
Lost Time Injury Frequency Rate per Million Working Hours	(FR)	0.00	0.00
Lost Time Injury Severity Rate per Million Working Hours	(SR)	0.00	0.00
Total Injury Index	(FSI)	0.00	0.00
2024			
Lost Time Injury Frequency Rate per Million Working Hours	(FR)	0.00	0.00
Lost Time Injury Severity Rate per Million Working Hours	(SR)	0.00	0.00
Total Injury Index	(FSI)	0.00	0.00
2025			
Lost Time Injury Frequency Rate per Million Working Hours	(FR)	0.00	0.00
Lost Time Injury Severity Rate per Million Working Hours	(SR)	0.00	0.00
Total Injury Index	(FSI)	0.00	0.00

Ho-Ping Power Company

2022	Category	Employees	Contractors
Lost Time Injury Frequency Rate per Million Working Hours	(FR)	1.81	0.00
Lost Time Injury Severity Rate per Million Working Hours	(SR)	54.00	0.00
Total Injury Index	(FSI)	0.31	0.00
2023			
Lost Time Injury Frequency Rate per Million Working Hours	(FR)	1.75	0.00
Lost Time Injury Severity Rate per Million Working Hours	(SR)	52.00	0.00
Total Injury Index	(FSI)	0.30	0.00
2024			
Lost Time Injury Frequency Rate per Million Working Hours	(FR)	0.00	0.00
Lost Time Injury Severity Rate per Million Working Hours	(SR)	0.00	0.00
Total Injury Index	(FSI)	0.00	0.00
2025			
Lost Time Injury Frequency Rate per Million Working Hours	(FR)	1.72	2.10
Lost Time Injury Severity Rate per Million Working Hours	(SR)	18.90	65.10
Total Injury Index	(FSI)	0.18	0.37

Note 1: The disclosure scope covers the Cement and Environmental Protection Business in Taiwan (including Wanching), Battery Energy Business (Molice), NHOA.TCC, Ta-Ho Maritime, Taiwan Transport & Storage, TCC Green Energy, Kuan-Ho Refractories Industry, TCC Information Systems, Hoping EcoPort, and Feng Sheng.

7.1.3.14 Union and Collective Agreement Participation for the Past Four Years

	2022	2023	2024	2025
Percentage of Employees Covered by Collective Bargaining Agreements (%)	96%	64%	91%	49%

Note 1: From 2024, the disclosure scope was expanded to include the Cement and Environmental Protection Business (Asia) and Energy for Social Transformation Business; from 2025, the disclosure scope was expanded to the entire Group, including the Cement and Environmental Protection Business (Asia), Cement and Environmental Protection Business (Europe-Africa), Energy for Social Transformation Business, Charging and Storage Business (Asia), Charging and Storage Business (Europe), Battery Energy Business, Asset Management Business, and Investment Business.



Overview
Governance
Carbon Reduction
Energy Transition
Employee
Nature
Social Inclusion
Appendix

ESG Data
Sustainability Disclosure for the Listed Cement Companies
GRI Index
ESRS Index
Third-Party Assurance Statement

Alignment with SDGs

7.1.4 TCC Key Indicators — Mining Companies in Taiwan and Mainland China GRI 14: Mining Sector 2024

The disclosure scope includes Ho Sheng Mining Company and Jiangsu Mining Industrial Company.

7.1.4.1 2025 Energy Consumption

Site	Energy Type	Energy Consumption (GJ)
Mining Companies in Taiwan and Mainland China	Diesel	78,098.76
	Gasoline	214.88
	Purchased Electricity	1,085.98

7.1.4.2 2025 Greenhouse Gas Emissions

Site	Item	Emissions (tCO ₂ e)
Mining Companies in Taiwan and Mainland China	Scope 1	3,428
	Scope 2 (Location-based)	339
	Scope 2 (Market-based)	339
	Scope 1 and Scope 2 (Market-based) Total	3,767
	Scope 3	-

7.1.4.3 2025 Waste Treatment

Site	Category	Item	Waste Treated (tons)
Mining Companies in Taiwan and Mainland China	Total Waste	Non-Hazardous Waste	11.71
	Generated On-site	Hazardous Waste	8.42

Site	Category	Disposal Method	Hazardousness	Waste Disposed (tons)
Mining Companies in Taiwan and Mainland China	Outsourced Waste Dis-posal	Off-site Landfill	Non-hazardous Waste	-
			Hazardous Waste	-
		Off-site Incineration (with Energy Recovery)	Non-hazardous Waste	-
			Hazardous Waste	-
		Off-site Incineration (without Energy Recovery)	Non-hazardous Waste	-
			Hazardous Waste	-
		Off-site Recycling and Reuse	Non-hazardous Waste	1.37
			Hazardous Waste	8.42

7.1.4.4 2025 Training Hours

Site	Category	Item/Breakdown by Type	Female	Male
Mining Companies in Taiwan and Mainland China	Age	Under 30	0	106
	Age	30–50 Years Old	124	1,508
	Age	Over 50	47	1,359
	Job Level	Executive Managers	0	0
	Job Level	Mid-level Managers	0	39
	Job Level	Junior Managers	0	202
	Job Level	Professionals	161	135
	Job Level	Direct Workers	11	2,597
	Total Hours	Total Hours	172	2,973
	Average Hours	Average Hours	34.40	30.00

7.1.4.5 2025 Employee Diversity

Employee Statistics

Site	Category	Item/By Type	Female	Male	Total
Mining Companies in Taiwan and Mainland China	Employment Relationship	Permanent Employees	5	99	104
	Employment Relationship	Temporary Employees	0	0	0
	Employment Relationship	Non-guaranteed Hours Employees	0	0	0
	Contract Type	Full-time Employees	5	99	104
	Contract Type	Part-time Employees	0	0	0
	Total	-	5	99	104

Full-time Employee Statistics

Site	Category	Item/By Type	Female	Male	Total
Mining Companies in Taiwan and Mainland China	Age	Under 30 (Exclusive)	0	4	4
	Age	30–50 Years Old	4	54	58
	Age	Over 50 (Exclusive)	1	41	42
	Education	Ph.D.	0	0	0
	Education	Master's Degree	0	0	0
	Education	Bachelor's Degree	2	17	19
	Education	Associate Degree	2	6	8
	Education	High School or Below	1	76	77
	Job Category	Executive Managers	0	0	0
	Job Category	Mid-level Managers	0	2	2
	Job Category	Junior Managers	0	6	6
	Job Category	Professionals	2	5	7
	Job Category	Direct Labor	3	86	89

Note 1: Taiwan supervisor definitions: Senior management includes directors and assistant vice presidents (and above); middle management includes managers and assistant managers; junior management includes supervisors; professionals include engineers, administrators, researchers, and management associates; direct personnel include other roles, such as mixer operators, machine operators, and clerks.

Note 2: Mainland China supervisor definitions: Senior management includes vice presidents (and above); middle management includes mid-level supervisors; junior management includes post workers levels 1–3; professionals include post workers levels 4–5; direct personnel include post workers levels 6–10.



- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Appendix
- ESG Data
 - Sustainability Disclosure for the Listed Cement Companies
 - GRI Index
 - ESRS Index
 - Third-Party Assurance Statement

Alignment with SDGs

7.1.4.6 2025 Occupational Injury Statistics

Site	Occupational Injuries	Employee Occupational Injuries	Contractor Occupational Injuries
Mining Companies in Taiwan and Mainland China	Number of Fatalities	0	0
	Number of High-consequence Work-related Injuries	0	0
	Number of Recordable Injuries	1.00	0
	Fatality Rate	0	0
	High-consequence Work-related Injury Rate	0	0
	Total Recordable Injury Frequency Rate (TRIFR)	4.36	0
	Lost Time Injury Frequency Rate (LTIFR)	4.36	0
	Actual Working Hours	229,462.00	0
	Occupational Diseases (Cases)	0	0

Note 1: Occupational injury data is primarily based on monthly occupational disaster statistics reported by each plant.

Note 2: The main types of occupational injuries are caught-in/between, struck-by, falls, and cuts.

Note 3: Fatality rate = (number of fatalities / total actual working hours) x 1,000,000.

Note 4: High-consequence work-related injury rate = (number of high-consequence work-related injuries) / total actual working hours x 1,000,000.

Note 5: Total Recordable Injury Frequency Rate = (number of recordable work-related injuries) / total actual working hours x 1,000,000.

Note 6: Lost time injury frequency rate (LTIFR) =(number of lost time injuries / total actual working hours) x 1,000,000.

Note 7: Some actual working hours are estimated by multiplying the number of plant entries by 8 hours.



- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Appendix

- ESG Data
- Sustainability Disclosure for the Listed Cement Companies**
- GRI Index
- ESRS Index
- Third-Party Assurance Statement

Alignment with SDGs

7.2 Sustainability Disclosure for the Listed Cement Companies

Cement Industry Sustainability Disclosure Indicators

The calculation scope of indicators 1 to 4 includes Cement and Environmental Protection Business (Asia), Cement and Environmental Protection Business (Europe-Africa), Energy for Social Transformation Business, Charging and Storage Business (Asia), Charging and Storage Business (Europe), Battery Energy Business, Asset Management Business, and Investment Business. For detailed energy consumption information, please refer to 7.1.2 TCC Key Indicators – Environmental.

No.	Indicator	Indicator Type	2025 Disclosure Status	Unit	Remarks
1	Total energy consumption, percentage of purchased electricity, and utilization rate	Quantitative	Total energy consumption: 236,886,713GJ Percentage of purchased electricity: 5.58% Renewable energy usage rate: 6.56%	Gigajoules (GJ), Percentage (%)	1.The percentage of purchased electricity represents the ratio of purchased electricity consumption to total energy consumption. 2.The renewable energy usage rate represents the ratio of renewable energy consumption to total energy consumption.
2	Total Water Withdrawal and Total Water Consumption	Quantitative	Total water withdrawal: 1,279,921.67 thousand cubic meters Total water consumption: 20,354.17 thousand cubic meters	Thousand cubic meters (1,000m³)	
3	Weight of waste generated, percentage of hazardous waste, and percentage of recycling	Quantitative	Weight of waste generated: 190,802.94 tons Percentage of hazardous waste: 2.43% Percentage of waste recycling: 92.42%	Tons (t), Percentage (%) Number, Rate (%) tons (t), cubic meters (m³)	1.The percentage of hazardous waste represents the percentage of hazardous waste weight over total waste weight. 2.The percentage of waste recycling represents the percentage of total weight of waste recycled both on-site and off-site (excluding waste incinerated for power generation) over total waste weight.

No.	Indicator	Indicator Type	2025 Disclosure Status	Unit	Remarks
4	Number of employees in and rate of occupational accidents	Quantitative	For TCC employee and contractor occupational injury numbers and rates, please refer to 7.1.3.11 TCC Key Indicators Social – 2025 Occupational Injury Statistics	Number, Rate (%)	
5	Production by product category	Quantitative		tons (t), cubic meters (m³)	
Product Category		Cement and Environmental Protection Business (Asia)	Cement and Environmental Protection Business (Europe-Africa)	Total	
Clinker (tons)		29,353,566.20	12,607,407.27	41,960,973.47	
Cement (tons)		31,511,995.55	16,820,936.84	48,332,932.39	
Cementitious Materials (tons)		36,800,228.88	17,208,596.94	54,008,825.81	
280 Specification Concrete (m³)		2,983,553.50			
350 Specification Concrete (m³)		654,686.50			
420 Specification Concrete (m³)		467,035.50			
Total Concrete Production (m³)		5,999,772.00	12,593,706.31	18,593,478.31	



Climate-related Information for TWSE/TPEX Listed Companies - Climate Change Risks and Opportunities for the Company and Related Response Measures Taken

Item	Corresponding Sections	Page Number
1. Describe the board of directors' and management's oversight and governance of climate-related risks and opportunities.	Please refer to the 2025 Annual Report.	88
2. Describe how the identified climate risks and opportunities affect the business, strategy, and finances of the business (short, medium, and long term).	Please refer to the 2025 Annual Report.	88-91
3. Describe the financial impact of extreme weather events and transformative actions.	Please refer to the 2025 Annual Report.	88-91
4. Describe how climate risk identification, assessment, and management processes are integrated into the overall risk management system.	Please refer to the 2025 Annual Report.	91
5. If scenario analysis is used to assess resilience to climate change risks, the scenarios, parameters, assumptions, analysis factors and major financial impacts used should be described.	Please refer to the 2025 Annual Report.	92
6. If there is a transition plan for managing climate-related risks, describe the content of the plan, and the indicators and targets used to identify and manage physical risks and transition risks.	Please refer to the 2025 Annual Report.	94
7. If internal carbon pricing is used as a planning tool, the basis for setting the price should be stated.	Please refer to the 2025 Annual Report.	95
8. If climate-related targets have been set, the activities covered, the scope of greenhouse gas emissions, the planning horizon, and the progress achieved each year should be specified. If carbon credits or renewable energy certificates (RECs) are used to achieve relevant targets, the source and quantity of carbon credits or RECs to be offset should be specified.	Please refer to the 2025 Annual Report.	95
9. GHG inventory and assurance status, reduction targets, strategies, and specific action plans.	Please refer to GHG Inventory Information.	

GHG Inventory Information

Basic Company Information:

- Companies with a capital of over NT\$10 billion, steel industry, and cement industry.
- According to the Sustainable Development Roadmap for Listed Companies: the parent company entity started its inventory in 2023, and subsidiaries in the consolidated financial statements started in 2025.

TCC established a GHG inventory mechanism in accordance with the ISO 14064-1 standard published by the International Organization for Standardization (ISO). Since 2016, TCC has regularly conducted annual inventories for the parent company entity, and since 2005, it has successively initiated greenhouse gas emissions inventories for subsidiaries in the consolidated financial statements to fully grasp the status of greenhouse gas usage and emissions, and verify the effectiveness of carbon reduction actions.

In addition, the GHG inventory data for the most recent two years summarizes the greenhouse gas emissions of TCC and all subsidiaries in the consolidated financial statements based on the operational control approach, detailed as follows:

Item	2024 Emissions (tCO ₂ e)	Intensity (tCO ₂ e/million NTD revenue)	2025 Emissions (tCO ₂ e)	Intensity (tCO ₂ e/million NTD revenue)
Parent company				
Scope 1 Direct greenhouse gas emissions	3,303,179		3,393,267	
Scope 2 Indirect greenhouse gas emissions	206,001		211,774	
Subsidiaries in Consolidated Financial Statements				
Scope 1 Direct greenhouse gas emissions	38,304,960		38,290,605	
Scope 2 Indirect greenhouse gas emissions	1,339,734		1,373,412	
Total	43,153,874	279.1	43,269,058	288.8

Note 1: TCC's direct emissions (Scope 1) and energy indirect emissions (Scope 2 — location-based) data cover all entities in the consolidated financial statements. The energy intensity of the parent and subsidiary companies in the 2025 and 2024 consolidated financial statements is calculated based on net revenues of NTD 149,804,135 thousand and NTD 154,606,511 thousand, respectively.

Note 2: TCC's direct emissions (Scope 1) and energy indirect emissions (Scope 2) data for 2025 and 2024 were verified by third-party organizations, including British Standards Institution (BSI) Taiwan Branch and SGS Taiwan Limited. Related certificates can be viewed on the sustainability certification page of TCC's official website.

Note3: Revisions to the 2024 consolidated subsidiary data stem from third-party verification adjustments to GHG emissions for overseas subsidiaries CIMPOR and OYAK Cement.



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

ESG Data

Sustainability Disclosure for the Listed Cement Companies

GRI Index

ESRS Index

Third-Party Assurance Statement

Alignment with SDGs

Greenhouse Gas Assurance Information

TCC's minimum assurance coverage requirements as specified in the Sustainable Development Roadmap for TWSE/TPEx Listed Companies:

- The parent company's standalone entity should begin assurance implementation starting in 2024.
- Subsidiaries in consolidated financial statements should begin assurance implementation starting in 2027.

TCC's greenhouse gas inventory assurance status for the past two years is described below:

Item	2024	2025
Parent company	Emissions (tCO ₂ e)	Emissions (tCO ₂ e)
Scope 1	3,303,179	3,393,267
Direct greenhouse gas emissions		
Scope 2	206,001	211,774
Indirect greenhouse gas emissions		
Total	3,509,180	3,605,041
Percentage of disclosed inventory data	100%	100%
Assurance Agency	British Standards Institution (BSI) Taiwan Branch	British Standards Institution (BSI) Taiwan Branch
Assurance Description	Assurance Standard ISO 14064-3: 2019	Assurance Standard ISO 14064-3:2019
Assurance Opinion and Conclusion	Unqualified Opinion	Unqualified Opinion

Greenhouse Gas Reduction Targets, Strategies, and Specific Action Plans

Please refer to the [Pillar V ESG Advantages](#) chapter



- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Appendix
- ESG Data
- Sustainability Disclosure for the Listed Cement Companies
- GRI Index
- ESRS Index
- Third-Party Assurance Statement

Alignment with SDGs

7.3 Global Reporting Initiative Index

Statement of Use GRI 1 Adopted	TCC Group Holdings CO., LTD. has reported in accordance with the GRI Standards
Applicable GRI Sector Standards	for the period from January 1, 2025, to December 31, 2025.
	GRI 1: Foundation 2021
	GRI 14: Mining Sector

GRI Standards/Disclosures	Corresponding Sections	Page Number	Notes/Omission Justification	Reference number of disclosures in GRI Sector Standards
General Disclosures				
GRI 2: General Disclosures 2021				
2-1 Organizational details	More About the Report	55		
2-2 Entities included in the organization's sustainability reporting	More About the Report	55		
2-3 Reporting period, frequency and contact point	More About the Report	55		
2-4 Restatements of information	-		For the restatement of 2024 GHG data, please refer to 7.1.2.2.	
2-5 External assurance	More About the Report	55		
	Appendix AA1000	232		
	Assurance Statement			
	Appendix ISSA 5000	232		
	Assurance Statement			
	Appendix TWSAE3000	232		
	Assurance Report			

GRI Standards/Disclosures	Corresponding Sections	Page Number	Notes/Omission Justification	Reference number of disclosures in GRI Sector Standards
2-6 Activities, value chain and other business relationships	Appendix ISSA 5000 Assurance Statement	232	TCC Group Holdings produces and manages cement, ready-mixed concrete, power, and energy solutions, serving construction, industrial, utility, and retail customers across Taiwan, Mainland China, Europe, and global markets. Cement and Environmental Protection Business supplies core construction materials, while Charging and Storage Business & Battery Energy Business provide power generation, storage systems, lithium batteries, and charging services to support energy transition. TCC actively collaborates with suppliers, clients, governments, and industry bodies to advance low-carbon materials and clean energy. Compared to the previous period, there were no significant changes to TCC's value chain, products, services, or key partnerships.	
	Product and Service Value Chain			
	1.7 Supply Chain Management	84		
2-7 Employees	7.1.3 TCC Key Indicators Social	209		
2-8 Workers who are not employees	7.1.3 TCC Key Indicators Social	209		
2-9 Governance structure and composition	1.1 Governance Structure	58		
2-10 Nomination and selection of the highest governance body	1.1 Governance Structure	58		



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

ESG Data

Sustainability Disclosure
for the Listed Cement Companies

GRI Index

ESRS Index

Third-Party Assurance Statement

Alignment with SDGs

GRI Standards/Disclosures	Corresponding Sections	Page Number	Notes/Omission Justification	Reference number of disclosures in GRI Sector Standards
2-11 Chair of the highest governance body	1.1 Governance Structure	58		
2-12 Role of the highest governance body in overseeing impact management	1.1 Governance Structure	58		
	Stakeholder and Material Topic Analysis	45		
2-13 Delegation of responsibility for managing impacts	1.1 Governance Structure	58		
2-14 Role of the highest governance body in sustainability reporting	More About the Report	55		
2-15 Conflicts of interest	1.1 Governance Structure	58	For important Board resolutions and directors' recusal due to conflicts of interest, please refer to the Board of Directors Section on TCC's official website	
2-16 Communication of critical concerns	1.1 Governance Structure	58	For related communication matters, please refer to the Board of Directors and Sustainability Committee meeting minutes in the Investor Relations - Committees section on TCC's official website	
	1.3 Risk Management Framework	63		
2-17 Collective knowledge of the highest governance body	1.1 Governance Structure	58		
2-18 Evaluation of the performance of the highest governance body	1.1 Governance Structure	58		
2-19 Remuneration policies	1.1 Governance Structure	58	Please refer to TCC Group Holdings CO., LTD.'s Annual Report for details on the remuneration paid to directors, supervisors, President and Vice Presidents. Currently, TCC does not have a clawback mechanism for remuneration	

GRI Standards/Disclosures	Corresponding Sections	Page Number	Notes/Omission Justification	Reference number of disclosures in GRI Sector Standards
2-20 Process to determine remuneration	1.1 Governance Structure	58	Please refer to TCC Group Holdings CO., LTD.'s Remuneration Committee Charter.	
2-21 Annual total compensation ratio			In 2025, the median ratio of the total annual remuneration of the highest-paid internal manager to the total annual remuneration of general employees was 74:1 (remuneration includes: salary, year-end bonus, and variable bonus) The total remuneration change rate for 2025 was 89 % (The above ratios were calculated based on the remuneration of the President of TCC, Mr. Roman Cheng. The boundary includes Cement and Environmental Protection Businesses (Asia), as well as subsidiaries in Taiwan and Mainland China.)	
2-22 Statement on sustainable development strategy	Letter to Our Stakeholders	04		
2-23 Policy commitments	Shaping the Future Civilization	08		
2-24 Embedding policy commitments	4.5 Human Rights Protection	151		
2-25 Processes to remediate negative impacts	Stakeholder and Material Topic Analysis	45		
	4.5 Human Rights Protection	151		
2-26 Mechanisms for seeking advice and raising concerns	1.5 Ethical Management	76		



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

ESG Data

Sustainability Disclosure for the Listed Cement Companies

GRI Index

ESRS Index

Third-Party Assurance Statement

Alignment with SDGs

GRI Standards/Disclosures	Corresponding Sections	Page Number	Notes/Omission Justification	Reference number of disclosures in GRI Sector Standards
2-27 Compliance with laws and regulations	1.5 Ethical Management	76	All fines paid in the year 2025 were incurred due to violations of regulations that occurred within the current reporting period. There were no fines paid for violations that occurred in previous reporting periods.	
2-28 Membership associations	-		Please refer to the ESG section on the TCC website for details on TCC's membership in associations.	
2-29 Approach to stakeholder engagement	Stakeholder and Material Topic Analysis	45		
2-30 Collective bargaining agreements	4.5 Human Rights Protection	151		
Material Topics				
GRI 3: Material Topics 2021				
3-1 Process to determine material topics	Stakeholder and Material Topic Analysis	45		
3-2 List of material topics	Stakeholder and Material Topic Analysis	45		
Material Topic Climate Action and Net-Zero Emissions				
GRI 3: Material Topics 2021				
3-3 Management of material topics	Stakeholder and Material Topic Analysis	45		14.1.1 · 14.2.1
GRI 201: Economic Performance 2016				
201-2 Financial implications and other risks and opportunities due to climate change	1.4 TCFD	67		14.2.2

GRI Standards/Disclosures	Corresponding Sections	Page Number	Notes/Omission Justification	Reference number of disclosures in GRI Sector Standards
GRI 302: Energy 2016				
302-1 Energy consumption within the organization	7.1.2 TCC Key Indicators Environmental	200	In 2025, the energy consumption by global operational sites was 236,886,713 GJ, comprising 221,350,891 GJ of non-renewable energy and 15,535,822 GJ of renewable energy. Renewable energy fuel types include coal, diesel, gasoline, natural gas, purchased electricity, waste heat power generation, and non-renewable alternative fuels, of which non-renewable alternative fuels totaled 13,649,620 GJ. Renewable energy sources include renewable biofuels and self-generated solar power for internal use. Renewable biofuels equivalent to approximately 14,707,762 GJ. Self-generated solar power for internal use is converted at a rate of 3.6GJ per thousand kWh, equivalent to approximately 828,059GJ	14.1.2
	7.1.4 TCC Key Indicators GRI 14: Mining Sector – Mining Companies in Taiwan and Mainland China	216		
302-3 Energy intensity	7.1.2 TCC Key Indicators Environmental	200		14.1.4
302-4 Reduction of energy consumption	7.1.2 TCC Key Indicators Environmental	200	In 2025, the plant's energy-saving projects saved 853,459GJ. Please refer to 7.1.2.5 TCC Key Indicators 2025 Energy Conservation Programs.	



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

ESG Data

Sustainability Disclosure
for the Listed Cement Companies

GRI Index

ESRS Index

Third-Party Assurance Statement

Alignment with SDGs

GRI Standards/Disclosures	Corresponding Sections	Page Number	Notes/Omission Justification	Reference number of disclosures in GRI Sector Standards
GRI 305: Emissions 2016				
305-1 Direct (Scope 1) GHG emissions	7.1.2 TCC Key Indicators Environmental	200	Greenhouse gases include CO ₂ , CH ₄ , N ₂ O, HFCs and SF ₆ , with no emissions of PFCs, or NF ₃	14.1.5
	7.1.4 TCC Key Indicators GRI 14: Mining Sector – Mining Companies in Taiwan and Mainland China	216		
	7.2 Sustainability Disclosure for the Listed Cement Companies	218		
305-2 Energy indirect (Scope 2) GHG emissions	7.1.2 TCC Key Indicators Environmental	200		14.1.6
	7.1.4 TCC Key Indicators GRI 14: Mining Sector – Mining Companies in Taiwan and Mainland China	216		
	7.2 Sustainability Disclosure for the Listed Cement Companies	218		
305-3 Other indirect (Scope 3) GHG emissions	7.1.2 TCC Key Indicators Environmental	200		14.1.7
	7.1.4 TCC Key Indicators GRI 14: Mining Sector – Mining Companies in Taiwan and Mainland China	216		
	7.2 Sustainability Disclosure for the Listed Cement Companies	218		
305-4 GHG emissions intensity	7.1.2 TCC Key Indicators Environmental	200		14.1.8
	7.1.4 TCC Key Indicators GRI 14: Mining Sector – Mining Companies in Taiwan and Mainland China	216		
	7.2 Sustainability Disclosure for the Listed Cement Companies	218		

GRI Standards/Disclosures	Corresponding Sections	Page Number	Notes/Omission Justification	Reference number of disclosures in GRI Sector Standards
305-5 Reduction of GHG emissions	7.1.2 TCC Key Indicators Environmental	200		14.1.9
	7.1.4 TCC Key Indicators GRI 14: Mining Sector – Mining Companies in Taiwan and Mainland China	216		
	7.2 Sustainability Disclosure for the Listed Cement Companies	218		
	Material Topic Resource Co-processing and Circular Economy			
GRI 3: Material Topics 2021				
3-3 Management of Material Topics	Stakeholder and Material Topic Analysis	45		14.5.1
Material Topic Low-Carbon Products and Services				
GRI 3: Material Topics 2021				
3-3 Management of Material Topics	Stakeholder and Material Topic Analysis	45		
GRI 301: Materials 2016				
301-2 Recycled input materials used	7.1.2 TCC Key Indicators Environmental	200		
Material Topic Green Energy and Energy Storage Business				
GRI 3: Material Topics 2021				
3-3 Management of Material Topics	Stakeholder and Material Topic Analysis	45		
Material Topic AI Process and Information Management				
GRI 3: Material Topics 2021				
3-3 Management of Material Topics	Stakeholder and Material Topic Analysis	45		
Material Topic R&D Innovation				
GRI 3: Material Topics 2021				
3-3 Management of Material Topics	Stakeholder and Material Topic Analysis	45		
Material Topic Biodiversity				
GRI 3: Material Topics 2021				
3-3 Management of Material Topics	Stakeholder and Material Topic Analysis	45		14.4.1
GRI 101 Biodiversity 2024				
101-1 Policies to halt and reverse biodiversity loss	5.1 TCC Nature Action: TNFD	157		14.4.2



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

ESG Data

Sustainability Disclosure
for the Listed Cement Companies

GRI Index

ESRS Index

Third-Party Assurance Statement

Alignment with SDGs

GRI Standards/Disclosures	Corresponding Sections	Page Number	Notes/Omission Justification	Reference number of disclosures in GRI Sector Standards
101-2 Management of biodiversity impacts	5.1 TCC Nature Action: TNFD	157		14.4.3
	5.2 Forest & Soil Restoration	166		
	5.3 Marine Restoration	174		
	5.4 Nature-based Solutions (NbS)	180		
101-3 Access and benefit-sharing	5.5 Natural Benefit Sharing	182	In 2025, the TNFD LEAP methodology was applied to analyze Cement and Environmental Protection Business (Asia) and its suppliers. In 2026, the evaluation is expanded to all global owned operation sites across all business groups, as well as suppliers of Cement and Environmental Protection Business (Asia). The 2026 LOCATE analysis results and site area data are expected to be published in the ESG section on TCC's official website in September 2026.	14.4.4
101-4 Identification of biodiversity impacts	5.1 TCC Nature Action: TNFD	157		
101-5 Locations with biodiversity impacts	5.1 TCC Nature Action: TNFD	157		
101-6 Direct drivers of biodiversity loss	5.1 TCC Nature Action: TNFD	157		
101-7 Changes to the state of biodiversity	5.1 TCC Nature Action: TNFD 5.2 Forest & Soil Restoration	157 166		
101-8 Ecosystem services	5.1 TCC Nature Action: TNFD	157		14.4.8

Material Topic | Operational Performances

GRI 3: Material Topics 2021

3-3 Management of Material Topics	Stakeholder and Material Topic Analysis	45
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Material Topic | Stakeholder Engagement and Just Transition

GRI 3: Material Topics 2021

3-3 Management of Material Topics	Stakeholder and Material Topic Analysis	45
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GRI Standards/Disclosures	Corresponding Sections	Page Number	Notes/Omission Justification	Reference number of disclosures in GRI Sector Standards
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Material Topic | Talent Cultivation and Development

GRI 3: Material Topics 2021

3-3 Management of Material Topics	Stakeholder and Material Topic Analysis	45		14.17.1
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GRI 404: Training and Education 2016

404-1 Average hours of training per year per employee	7.1.3 TCC Key Indicators Social 7.1.4 TCC Key Indicators GRI 14: Mining Sector – Mining Companies in Taiwan and Mainland China	209 216		14.17.7
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404-2 Programs for upgrading employee skills and transition assistance programs	4.2 Employee Development	135		14.17.8
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404-3 Percentage of employees receiving regular performance and career development reviews	4.3 Employee Remuneration and Benefits	140		
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Material Topic | Workplace Inclusion

GRI 3: Material Topics 2021

3-3 Management of Material Topics	Stakeholder and Material Topic Analysis	45		14.21.1
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GRI 405: Diversity and Equal Opportunity 2016

405-1 Diversity of governance bodies and employees	1.1 Governance Structure 4.2 Employee Development 7.1.3 TCC Key Indicators Social	58 135 209		14.21.5
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Overview
Governance
Carbon Reduction
Energy Transition
Employee
Nature
Social Inclusion
Appendix
ESG Data
Sustainability Disclosure for the Listed Cement Companies
GRI Index
ESRS Index
Third-Party Assurance Statement

Alignment with SDGs

GRI Standards/Disclosures	Corresponding Sections	Page Number	Notes/Omission Justification	Reference number of disclosures in GRI Sector Standards												
405-2 Ratio of basic salary and remuneration of women to men	7.1.3 TCC Key Indicators Social	209	2025 TCC salary ratio: female to male employees (Female : Male) Sites in Taiwan and Mainland China (Cross-Business Groups) <table><tr><th>Employee Level</th><th>Base Salary</th><th>Base Salary + Other Cash Incentives</th></tr><tr><td>Executive level</td><td>107:100</td><td>131:100</td></tr><tr><td>Management level</td><td>116:100</td><td>116:100</td></tr><tr><td>Non-management level</td><td>96:100</td><td>92:100</td></tr></table> Note 1: Fixed remuneration refers to monthly base salary (including year-end bonus); total annual remuneration includes fixed remuneration and variable bonuses. Note 2: TCC's significant locations of operation include sites in Taiwan and Mainland China (covering Cement and Environmental Protection (Asia) as well as other business groups and subsidiaries). Due to data availability constraints, the boundary for this indicator excludes the Longshan Plant and the subsidiary Feng Sheng Enterprise Company. Note 3: Executive management includes Assistant Vice Presidents and above; junior and mid-level management includes Supervisors to Senior Managers; non-management roles include direct operators, specialists, engineers, and researchers.	Employee Level	Base Salary	Base Salary + Other Cash Incentives	Executive level	107:100	131:100	Management level	116:100	116:100	Non-management level	96:100	92:100	14.21.6
Employee Level	Base Salary	Base Salary + Other Cash Incentives														
Executive level	107:100	131:100														
Management level	116:100	116:100														
Non-management level	96:100	92:100														

Material Topic Corporate Governance				
GRI 3: Material Topics 2021				
3-3 Management of Material Topics	Stakeholder and Material Topic Analysis	45		
GRI 205: Anti-corruption 2016				
205-3 Confirmed corruption incidents and actions taken	1.5 Ethical Management	76		

GRI Standards/Disclosures	Corresponding Sections	Page Number	Notes/Omission Justification	Reference number of disclosures in GRI Sector Standards
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GRI 206: Anti-competitive Behavior 2016				
206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	1.5 Ethical Management	76	TCC had no incidents of anti-competitive behavior, anti-trust, and monopoly practices in 2025.	

Material Topic Workplace Health and Safety				
GRI 3: Material Topics 2021				
3-3 Management of Material Topics	Stakeholder and Material Topic Analysis	45		14.16.1
GRI 403: Occupational Health and Safety 2018				
403-1 Occupational health and safety management system	4.4 Occupational Health and Safety	145		14.16.2
403-2 Hazard identification, risk assessment, and incident investigation	4.4 Occupational Health and Safety	145	In accordance with Article 18 of the Occupational Safety and Health Act, workers who identify potential hazards may leave work conditions they believe could cause injury or illness and must immediately report the situation to their direct supervisor without facing disciplinary action.	14.16.3
403-3 Occupational health services	4.4 Occupational Health and Safety	145		14.16.4
403-4 Worker participation, consultation, and communication on occupational health and safety	4.4 Occupational Health and Safety	145		14.16.5
403-5 Worker training on occupational health and safety	4.4 Occupational Health and Safety	145		14.16.6
403-6 Promotion of worker health	4.4 Occupational Health and Safety	145		14.16.7



Overview	
Governance	
Carbon Reduction	
Energy Transition	
Employee	
Nature	
Social Inclusion	
Appendix	
ESG Data	
Sustainability Disclosure for the Listed Cement Companies	
GRI Index	
ESRS Index	
Third-Party Assurance Statement	

Alignment with SDGs

GRI Standards/Disclosures	Corresponding Sections	Page Number	Notes/Omission Justification	Reference number of disclosures in GRI Sector Standards
403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	4.4 Occupational Health and Safety	145		14.16.8
403-8 Workers covered by occupational health and safety management system	4.4 Occupational Health and Safety	145		14.16.9
403-9 Work-related injuries	7.1.3 TCC Key Indicators Social	209		14.16.10
403-10 Work-related ill health	4.4 Occupational Health and Safety	145	In 2025, TCC had zero occupational disease cases in Taiwan and Mainland China, and one reported case at the Portugal office (affecting two employees diagnosed with hearing loss). Following labor-management consultations, the cases were processed per work injury procedures. As equipment limitations prevented direct noise mitigation, TCC adjusted operational workflows, enforced mandatory protective equipment, and restricted on-site working hours to minimize occupational injuries.	14.16.11
	7.1.3 TCC Key Indicators Social	209		
Material Topic Disaster Risk Control				
GRI 3: Material Topics 2021				
3-3 Management of Material Topics	Stakeholder and Material Topic Analysis	45		
Topic-specific Disclosures				
GRI 204: Procurement Practices 2016				
204-1 Proportion of spending on local suppliers	1.7 Supply Chain Management	84		

GRI Standards/Disclosures	Corresponding Sections	Page Number	Notes/Omission Justification	Reference number of disclosures in GRI Sector Standards
GRI 303: Water 2018				
303-1 Interactions with water as a shared resource	2.3 Low-Carbon Production Management	109		
303-2 Management of water discharge-related impacts	2.3 Low-Carbon Production Management	109		
303-3 Water withdrawal	7.1.2 TCC Key Indicators Environmental	200	Water withdrawal at operational sites in Taiwan and Mainland China includes both freshwater and seawater.	
303-4 Water discharge	7.1.2 TCC Key Indicators Environmental	200		
303-5 Water consumption	7.1.2 TCC Key Indicators Environmental	200		
GRI 305: Emissions 2016				
305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant emissions	7.1.2 TCC Key Indicators Environmental	200		
GRI 306: Waste 2020				
306-1 Waste generation and significant waste-related impacts	2.2 Resource Recycling—City Mining	102		14.5.2
	2.3 Low-Carbon Production Management	109		14.5.3
306-2 Management of significant waste-related impacts	2.3 Low-Carbon Production Management	109		
	7.1.2 TCC Key Indicators Environmental	200		14.5.4
306-3 Waste generated	7.1.2 TCC Key Indicators Environmental	200		
	7.1.4 TCC Key Indicators GRI 14: Mining Sector – Mining Companies in Taiwan and Mainland China	216		14.5.5
306-4 Waste diverted from disposal	7.1.2 TCC Key Indicators Environmental	200		
	7.1.4 TCC Key Indicators GRI 14: Mining Sector – Mining Companies in Taiwan and Mainland China	216		14.5.6
306-5 Waste directed to disposal	7.1.2 TCC Key Indicators Environmental	200		



- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Appendix
- ESG Data
- Sustainability Disclosure for the Listed Cement Companies
- GRI Index
- ESRS Index
- Third-Party Assurance Statement

Alignment with SDGs

GRI Standards/Disclosures	Corresponding Sections	Page Number	Notes/Omission Justification	Reference number of disclosures in GRI Sector Standards
GRI 401: Employment 2016				
401-1 New employee hires and employee turnover	7.1.3 TCC Key Indicators Social	209		
401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	4.3 Employee Remuneration and Benefits	140	In 2025, TCC also employed part-time personnel whose benefit coverage differed from that of full-time employees, such as being excluded from Employee Welfare Committee benefits.	
401-3 Parental leave	7.1.3 TCC Key Indicators Social	209		
GRI 413: Local Communities 2016				
413-1 Operations with local community engagement, impact assessments, and development programs	6.1 Social Engagement	187		
413-2 Operations with significant actual and potential negative impacts on local communities	4.5 Human Rights Protection 6.1 Social Engagement	187 187	■ The Hoping Plant has completed comprehensive local community communication and impact assessments, accounting for 50% of cement plant operating sites in Taiwan. TCC launched the Ho-Ping Carbon Reduction Parent-Child Bankbook Program in 2023, disclosing its Social Impact Assessment in 2025. See CH6.1 and the report for details. ■ In 2025, the Hoping Sustainability Charity Foundation approved a total subsidy amount of NTD 4,059,416. In addition, Ho-Ping Power Maritime Emergency Relief approved a total subsidy amount of NTD 2,250,000.	

GRI Standards/Disclosures	Corresponding Sections	Page Number	Notes/Omission Justification	Reference number of disclosures in GRI Sector Standards
			■ TCC regularly conducts human rights and environmental due diligence to assess impacts on stakeholders (including local communities), implementing preventive, mitigating, and grievance measures accordingly. For details, refer to the "TCC Human Rights and Environmental Due Diligence Report". ■ TCC introduced Social Return On Investment (SROI) and received verification from Social Value International, UK, in December 2021, confirming that for every NTD 1 invested in the overall DAKA project, NTD 3.54 of social value is generated. Related Report Content Please refer to TCC's SROI Report and TCC Just Transition Report.	

Note 1: The disclosure topics without corresponding GRI Sector Standards are not of the material topics identified this year , including topics 14.2 to 14.3, 14.6 to 14.15, 14.18 to 14.20, and 14.23 to 14.25.

Note 2: The Material Topic “Talent Cultivation and Development” corresponds to the disclosure items in “Topic 14.17 Employment practices” of GRI 14; nevertheless, since items 14.17.2 to 14.17.6 and 14.17.9 to 14.17.10 have low relevance to talent cultivation and development, they are not applicable to the Material Topic.

Note 3: The Material Topic “Workplace Inclusion” corresponds to the disclosure items in “Topic 14.21 Non-discrimination and equal opportunity” of GRI 14; nevertheless, since items 14.21.2 to 14.21.4 and 14.21.7 have low relevance to Workplace Inclusion they are not applicable to the Material Topic.

Note 4: The disclosure scope of “405-2 Ratio of basic salary and remuneration of women to men” aligns with TCC’s significant operational sites and reporting boundary, including Mining Companies in Taiwan and Mainland China. Item 14.21.6 is not separately disclosed in “7.1.4 TCC Key Indicators | GRI 14: Mining Sector – Mining Companies in Taiwan and Mainland China.”



- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Appendix
- ESG Data
- Sustainability Disclosure for the Listed Cement Companies
- GRI Index
- ESRS Index
- Third-Party Assurance Statement

Alignment with SDGs

7.4 European Sustainability Reporting Standards Index

ESRS Number	Disclosure Requirements	Corresponding Sections	Page Number
ESRS 2 General Disclosures			
ESRS 2 BP-1	Basis for preparation of the sustainability statement	More About the Report 1.9 Intellectual Property Management	55 92
ESRS 2 BP-2	Specific information if the undertaking uses phasing-in options	More About the Report 1.9 Intellectual Property Management	55 92
ESRS 2 GOV-1	The role of the administrative, management and supervisory bodies in relation to sustainability	1.1 Governance Structure	58
ESRS 2 GOV-2	Integration of sustainability-related performance in incentive schemes	1.2 Sustainability Management Framework	61
ESRS 2 GOV-3	Statement on due diligence	1.7 Supply Chain Management 4.5 Human Rights Protection	84 151
ESRS 2 GOV-4	Risk management and internal controls over sustainability reporting	1.3 Risk Management Framework 1.5 Ethical Management	63 76
ESRS 2 SBM-1	Strategy, business model and value chain	7.3 Global Reporting Initiative Index	221
ESRS 2 SBM-2	Interests and views of stakeholder	Stakeholder and Material Topic Analysis	45
ESRS 2 SBM-3	Interaction of material impacts risks and opportunities with strategy and business model, and financial effects	Stakeholder and Material Topic Analysis	45
ESRS 2 IRO-1	Description of the process to identify and assess material impacts, risks and opportunities and material information to be reported	Stakeholder and Material Topic Analysis	45
ESRS 2 IRO-2	Material impacts, risks and opportunities and disclosure requirements included in the sustainability statement	Stakeholder and Material Topic Analysis	45
ESRS 2 GDR-P	General Disclosure Requirement for policies	Stakeholder and Material Topic Analysis	45
ESRS 2 GDR-A	General Disclosure Requirement for actions and resources	Stakeholder and Material Topic Analysis	45
ESRS 2 GDR-M	General Disclosure Requirement for metrics	Sustainability Goals and Tracking	52
ESRS 2 GDR-T	General Disclosure Requirement for targets	Sustainability Goals and Tracking	52

ESRS Number	Disclosure Requirements Corresponding Material Topics	Corresponding Sections	Page Number
ESRS E1- Climate Change Climate Change Green Energy and Energy Storage Business			
DR E1-1	Transition plan for climate change mitigation	Pillar V ESG Advantages	31
DR E1-2	Identification of climate-related risks and scenario analysis	1.4 TCFD	67
DR E1-3	Resilience in relation to climate change	1.4 TCFD	67
DR E1-4	Policies related to climate change mitigation and adaptation	Pillar V ESG Advantages	31
DR E1-5	Actions and resources in relation to climate change mitigation and adaptation	Pillar V ESG Advantages	31
DR E1-6	Targets related to climate change	Pillar V ESG Advantages	31
DR E1-7	Energy consumption and mix	7.1.2 TCC Key Indicators Environmental	200
DR E1-8	Gross scope 1, 2, 3 GHG emissions	7.1.2 TCC Key Indicators Environmental	200
DR E1-9	GHG removals and GHG mitigation projects financed through carbon credits	7.1.2 TCC Key Indicators Environmental	200
DR E1-10	Internal carbon pricing	Pillar V ESG Advantages	31
DR E1-11	Anticipated financial effects from material physical and transition risks and potential climate-related opportunities	1.4 TCFD	67

ESRS Number	Disclosure Requirements Corresponding Material Topics	Corresponding Sections	Page Number
ESRS E2- Pollution This matter is not considered material.			
DR E2-1	Policies related to pollution	2.3 Low-Carbon Production Management	109
DR E2-2	Actions and resources related to pollution	7.1.2 TCC Key Indicators Environmental	200
DR E2-3	Targets related to pollution	2.3 Low-Carbon Production Management	109
DR E2-4	Pollution of air, water and soil	7.1.2 TCC Key Indicators Environmental	200
DR E2-5	Substances of concern and substances of very high concern	-	



Overview

Governance

Carbon Reduction

Energy Transition

Employee

Nature

Social Inclusion

Appendix

ESG Data

Sustainability Disclosure
for the Listed Cement Companies

GRI Index

ESRS Index

Third-Party Assurance Statement

Alignment with SDGs

ESRS Number	Disclosure Requirements Corresponding Material Topics	Corresponding Sections	Page Number
ESRS E3- Water	This matter is not considered material.		
DR E3-1	Policies related to water	5.3 Marine Restoration	174
DR E3-2	Actions and resources related to water	7.1.2 TCC Key Indicators Environmental	200
DR E3-3	Targets related to water	Sustainability Goals and Tracking	52
		2.3 Low-Carbon Production Management	109
DR E3-4	Water metrics	Sustainability Goals and Tracking	52

ESRS Number	Disclosure Requirements Corresponding Material Topics	Corresponding Sections	Page Number
ESRS E4- Biodiversity and Ecosystems	Biodiversity		
DR E4-1	Biodiversity and ecosystems transition plan	5.1 TCC Nature Action: TNFD	157
DR E4-2	Policies related to biodiversity and ecosystems	5.1 TCC Nature Action: TNFD	157
DR E4-3	Actions and resources related to biodiversity and ecosystems	5.1 TCC Nature Action: TNFD	157
DR E4-4	Targets related to biodiversity and ecosystems	5.1 TCC Nature Action: TNFD	157
DR E4-5	Metrics related to biodiversity and ecosystems change	5.2 Forest & Soil Restoration	166

ESRS Number	Disclosure Requirements Corresponding Material Topics	Corresponding Sections	Page Number
ESRS E5- Resource Use and Circular Economy	Resource Co-processing and Circular Economy Low-Carbon Products and Services		
DR E5-1	Policies related to resource use and circular economy	2.2 Resource Recycling—City Mining	102
DR E5-2	Actions and resources related to resource use and circular economy	2.2 Resource Recycling—City Mining	102
DR E5-3	Targets related to resource use and circular economy	2.2 Resource Recycling—City Mining	102
DR E5-4	Resource inflows	2.2 Resource Recycling—City Mining	102
DR E5-5	Resource outflows	2.2 Resource Recycling—City Mining	102

ESRS Number	Disclosure Requirements Corresponding Material Topics	Corresponding Sections	Page Number
ESRS S1- Own Workforce	Workplace Health and Safety Workplace Inclusion Talent Cultivation and Development		
DR S1-1	Policies related to own workforce	4.2 Employee Development 4.4 Occupational Health and Safety	135 145
DR S1-2	Engagement with own workforce and workers' representatives, existence of channels for own workforce to raise concerns or needs and approaches to remedy	4.2 Employee Development 4.4 Occupational Health and Safety Stakeholder Engagement	135 145
DR S1-3	Actions and resources related to own workforce	Stakeholder Engagement	
DR S1-4	Targets related to own workforce	Stakeholder and Material Topic Analysis	45
DR S1-5	Characteristics of the undertaking's employees	Stakeholder and Material Topic Analysis	45
DR S1-6	Characteristics of non-employees in the undertaking's own workforce	7.1.3 TCC Key Indicators Social	209
DR S1-7	Collective bargaining coverage and social dialogue	4.5 Human Rights Protection	151
DR S1-8	Diversity metrics	4.2 Employee Development	135
DR S1-9	Adequate wages	4.3 Employee Remuneration and Benefits	140
DR S1-10	Social protection	4.5 Human Rights Protection	151
DR S1-11	Persons with disabilities	4.5 Human Rights Protection	151
DR S1-12	Training and skills development metrics	4.1 Climate Action Talents 7.1.3 TCC Key Indicators Social	133 209
DR S1-13	Health and safety metrics	4.4 Occupational Health and Safety	145
DR S1-14	Work-life balance metrics	4.3 Employee Remuneration and Benefits	140
DR S1-15	Remuneration metrics	4.3 Employee Remuneration and Benefits	140
DR S1-16	Incidents of discrimination and other human rights incidents	4.5 Human Rights Protection	151

ESRS Number	Disclosure Requirements Corresponding Material Topics	Corresponding Sections	Page Number
ESRS S2- Workers in the Value Chain	This matter is not considered material.		
DR S2-1	Policies related to workers in the value chain	1.7 Supply Chain Management 2.3 Low-Carbon Production Management	84 109
DR S2-2	Engagement with workers in the value chain, existence of channels for workers in the value chain to raise concerns or needs and approaches to remedy	Stakeholder and Material Topic Analysis	45
DR S2-3	Actions and resources related to workers in the value chain	Stakeholder Engagement	
DR S2-4	Targets related to workers in the value chain	1.7 Supply Chain Management	84



- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Appendix
- ESG Data
- Sustainability Disclosure
for the Listed Cement Companies
- GRI Index
- ESRS Index
- Third-Party Assurance Statement

Alignment with SDGs

ESRS Number	Disclosure Requirements Corresponding Material Topics	Corresponding Sections	Page Number
ESRS S3- Affected Communities	Stakeholder Engagement and Just Transition		
DR S3-1	Policies related to affected communities	Just Transition Plan	37
DR S3-2	Engagement with affected communities, existence of channels for affected communities to raise concerns or needs and approaches to remedy	Just Transition Plan Stakeholder Engagement	37
DR S3-3	Actions and resources related to affected communities	Stakeholder Engagement	
DR S3-4	Targets related to affected communities	Just Transition	37

ESRS Number	Disclosure Requirements Corresponding Material Topics	Corresponding Sections	Page Number
ESRS S4- Consumers and End-users	This matter is not considered material.		
DR S4-1	Policies related to consumers and end-users	1.8 Customer Communication	88
DR S4-2	Engagement with consumers and end-users, existence of channels for consumers and end-users to raise concerns or needs and approaches to remedy	1.8 Customer Communication Stakeholder Engagement	88
DR S4-3	Actions and resources related to consumers and end-users	Stakeholder Engagement	
DR S4-4	Targets related to consumers and end-users	-	

ESRS Number	Disclosure Requirements Corresponding Material Topics	Corresponding Sections	Page Number
ESRS G1- Business Conduct	R&D Innovation Corporate Governance Operational Performances		
DR G1-1	Policies related to business conduct	1.5 Ethical Management	76
DR G1-2	Actions related to business conduct	1.7 Supply Chain Management 1.5 Ethical Management	84 76
DR G1-3	Targets related to business conduct	1.5 Ethical Management	76
DR G1-4	Metrics related to corruption or bribery	1.5 Ethical Management	76
DR G1-5	Metrics related to political influence, including lobbying activities	7.1.1 TCC Key Indicators Governance	198
DR G1-6	Metrics related to payment practices	-	



- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Appendix
- ESG Data
- Sustainability Disclosure for the Listed Cement Companies
- GRI Index
- ESRS Index

Third-Party Assurance Statement

Alignment with SDGs

7.5 Third-Party Assurance Statement

Independent Auditors' Limited Assurance Report

Statement Appendices and related information please refer to the [ESG section of TCC's official website](#).

 青山永續 GREEN MOUNTAIN SUSTAINABILITY Independent Limited Assurance Report To TCC Group Holdings CO., LTD.: We were engaged by TCC Group Holdings CO., LTD. (TCC) to provide limited assurance over the selected information attached as Appendix A (the Subject Matter) of the 2025 TCC Group Holdings Sustainability Report. Subject Matter and Applicable Criteria In preparing the Subject Matter of the 2025 TCC Group Holdings Sustainability Report and following selected standards (the Criteria), as set out in Appendix A: Summary of Assurance Subject Matters. The reporting scope of the Subject Matter is described in the "Boundary and Scope" section of the Sustainability Report. The scope of assurance includes governance, environmental and social-related indicators, the selected indicators are detailed in Appendix A. TCC Group Holdings applied the Taiwan Stock Exchange Corporation Rules Governing the Preparation and Filing of Sustainability Reports by TWSE Listed Companies, relevant questions and answers, relevant laws and regulations. Management's Responsibilities The management of TCC Group Holdings are responsible for the preparation, content, and presentation of the Sustainability Report in accordance with the Taiwan Stock Exchange Corporation Rules Governing the Preparation and Filing of Sustainability Reports by TWSE Listed Companies. They need to consider relevant laws and regulations, Global Reporting Initiatives ("GRI") Standards, and using the applicable criteria to fairly prepare and present the Subject Matter. It is also their responsibility to maintain necessary internal controls related to the preparation of Sustainability Reports to ensure that the performance indicators are not materially misrepresented due to fraud or error. Our Responsibilities We performed our work in accordance with the Taiwan Standard on Assurance Engagements 3000 (International Standard on Assurance Engagements 3000), "Assurance Engagements other than Audits or Reviews of Historical Financial Information" issued by the International Auditing and Assurance Standards Board to issue a limited assurance conclusion on whether the Subject Matter is free from material misstatement. Also, we have considered appropriate limited assurance procedures according to the understanding of relevant internal controls in the circumstances, but not for the purposes of expressing a conclusion as to the effectiveness of the internal control over the design or implementation of the Report. A limited assurance engagement consists of making inquiries, primarily of persons responsible for the preparation of information presented in the Report, and applying analytical and other evidence-gathering procedures, as appropriate. These procedures included: Interviews with relevant staff at the corporate and business unit level responsible for providing the information in the Report to inquiries about the design and implementation of the internal control systems and methods used to collect and report. 1	 青山永續 GREEN MOUNTAIN SUSTAINABILITY - Obtaining the original supporting documentation, quantitative or qualitative, obtained from the information management systems of TCC's main operators or external sources, used in the preparation of the non-financial indicators. - Based on our understanding of the above matters and the identified areas, we conducted inquiries, observations, examinations, and re-performance tests on the selected samples of the subject matter to obtain limited assurance evidence. - Obtainment of a management representation letter from the directors and the management of TCC Group Holdings. This report does not provide any assurance on the effectiveness of the design or implementation of internal control systems related to the 2025 Sustainability Report. Independence and Standards on Quality Management We have complied with the relevant rules of professional conduct/code of ethics applicable to the practice of public accounting as related to assurance engagements, issued by various professional accounting bodies, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality, and professional behaviour. We also apply the Standards on Quality Management 1 (TWSQM 1), Quality Management for Public Accounting Firms and therefore has in place a quality control system which includes documented policies and procedures related to compliance with ethical requirements, professional standards, and applicable legal and regulatory provisions. Inherent Restrictions There are inherent limitations in this project, particularly non-financial indicators, which are subject to more inherent restrictions compared to financial information. The qualitative interpretation of data, including its relevance, materiality, and accuracy, depends more on individual assumptions and judgments. Conclusion Based on our procedures and the evidence obtained as described in this report, nothing has come to our attention that causes us to believe that the materiality assessment process, the selected sustainability information is not, in all material aspects, presented fairly using the Subject matter and criteria for the year ended December 31, 2025. Other Matters The maintenance of TCC's website is the responsibility of TCC's management. Following the publication of our assurance report on TCC's website, we do not assume responsibility for performing further assurance procedures on any subsequent changes to the subject matter information or applicable criteria disclosed on TCC's website. 2	 青山永續 GREEN MOUNTAIN SUSTAINABILITY GREEN MOUNTAIN SUSTAINABILITY Alfred Du  Public Accountants and Chartered Accountants The reference number of the FSC (Financial Supervisory Commission) approval letter:7775 20 August 2026  3
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- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Appendix
- ESG Data
- Sustainability Disclosure for the Listed Cement Companies
- GRI Index
- ESRS Index
- Third-Party Assurance Statement

Alignment with SDGs

Greenhouse Gas Statement Assurance Opinion Statement

Statement Appendices and related information please refer to the [ESG section of TCC's official website](#).

Assurance opinion no.: 26UCSGPA14608-1/1

Greenhouse Gas Statement Assurance Opinion

The 2025 inventory of Greenhouse Gas emissions of TCC Group Holdings has been conducted in accordance with ISSA 5000 and ISO 14064-3:2019 and fund to be in compliance with the reporting criteria of:

- Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004)

- Greenhouse Gas Protocol: Corporate Value Chain (Scope 3) Accounting and Reporting Standard (2011)

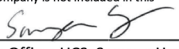
Summary of Corporate Greenhouse Gas Emissions (metric tons of CO₂e):

Scopes		
Scope 1: Direct GHG emissions (Note 1)	23,297,448.29	
Scope 2: Electricity indirect GHG emissions (Note 1)	Location Based Method	930,672.51
	Market Based Method	896,035.21
Scope 3: Value chain GHG emissions (Note 2)	Category 1 Purchased Goods and Services	1,102,369.03
	Category 2 Capital Goods	182,272.04
	Category 3 Fuel and energy-related activities (not included in Scope 1 or Scope 2)	502,135.25
	Category 4 Upstream transportation and distribution	255,417.81
	Category 5 Waste generated in operations	931.73
	Category 6 Business Travel	709.19
	Category 7 Employee commuting	1,630.62
	Category 8 Upstream leased assets	507.82
	Category 9 Downstream transportation and distributions	263,616.58
	Category 10 Processing of sold products	64,403.86
	Category 11 Use of sold products	0.00
	Category 12 End-of-life treatment of sold product	77,890.03
	Category 13 Downstream leased assets	5,134.33
	Category 14 Franchises	0.00
	Category 15 Investment (Note 3)	N/A
Total Emissions	26,685,139.09 (Location Based Method)	

Note 1: The physical emission boundaries for Scope 1 and Scope 2 are consistent with the assurance (verification) boundaries, which include the Asian Cement and Environmental Business Group (33 subsidiaries/branches and the headquarters office).

Note 2: Scope 3 Categories 1 to 14 only include the 30 companies that generally comply with the requirements of the GHG Protocol Corporate Value Chain Standard. The excluded subsidiaries are currently establishing their complete Scope 3 inventories.

Note 3: Scope 3 Category 15 is not included in the scope of this verification; therefore, the data disclosed by the company is not included in this table.

For and on behalf of UCS 

Chief Executive Officer UCS, Sangem Hsu

Date of issue: 06/30/2026

 UNIVERSAL CERTIFICATION SERVICE CO., LTD.

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Page: 1 of 4

Assurance opinion no.: 26UCSGPA14608-1/1

Data Integration Description

Scope 1 and Scope 2 encompass the following verification boundaries:	Scope 3 encompass the following verification boundaries:
台泥總處 (台泥大樓)	台泥總處 (台泥大樓)
低碳研發中心	低碳研發中心
台灣水泥股份有限公司和平分公司	台灣水泥股份有限公司和平分公司
台灣水泥股份有限公司蘇澳廠	台灣水泥股份有限公司蘇澳廠
台灣水泥股份有限公司花蓮廠	台灣水泥股份有限公司花蓮廠
台灣水泥製品廠 (含26個據點)	台灣水泥製品廠 (含26個據點)
金昌石礦股份有限公司	台泥 (貴港) 水泥有限公司
合盛礦業股份有限公司	Hong Kong Cement Company Limited (HKCCL)
萬青水泥股份有限公司	柳州台泥新型建材有限公司
鳳勝實業股份有限公司	福州台泥水泥有限公司
台泥 (貴港) 水泥有限公司	台泥 (英德) 水泥有限公司
Hong Kong Cement Company Limited (HKCCL)	句容台泥水泥有限公司
柳州台泥新型建材有限公司	台泥 (遼寧) 水泥有限公司
福州台泥水泥有限公司	台泥 (安順) 水泥有限公司
台泥 (英德) 水泥有限公司	台泥 (重慶) 水泥有限公司
句容台泥水泥有限公司	廣安昌興水泥有限公司
台泥 (遼寧) 水泥有限公司	台泥 (杭州) 企業運營管理有限公司
台泥 (安順) 水泥有限公司	貴州港安水泥有限公司
台泥 (重慶) 水泥有限公司	貴州凱里瑞安建材有限公司
廣安昌興水泥有限公司	台泥 (韶關) 水泥有限公司
台泥 (杭州) 企業運營管理有限公司	瀘州賽德水泥有限公司(敘永)
貴州港安水泥有限公司	華盛台泥水泥有限公司
貴州凱里瑞安建材有限公司	台泥 (懷化) 水泥有限公司
台泥 (韶關) 水泥有限公司	靖州台泥水泥有限公司
瀘州賽德水泥有限公司(敘永)	貴港台泥東園環保科技有限公司
華盛台泥水泥有限公司	北京台泥環保科技有限責任公司
台泥 (懷化) 水泥有限公司	凱里台泥環保科技有限公司
靖州台泥水泥有限公司	台泥 (杭州) 環保科技有限公司
貴港台泥東園環保科技有限公司	一二三 (廣東) 環保科技有限公司
北京台泥環保科技有限責任公司	英德龍山水泥有限責任公司
凱里台泥環保科技有限公司	
台泥 (杭州) 環保科技有限公司	
一二三 (廣東) 環保科技有限公司	
英德龍山水泥有限責任公司	

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Page: 2 of 4



- Overview
- Governance
- Carbon Reduction
- Energy Transition
- Employee
- Nature
- Social Inclusion
- Appendix
- ESG Data
- Sustainability Disclosure for the Listed Cement Companies
- GRI Index
- ESRS Index

→ Third-Party Assurance Statement

Alignment with SDGs

AA1000 Assurance
Opinion Statement

Statement Appendices and related information please refer to the [ESG section of TCC's official website](#).

Assurance opinion no.: 26UCSAAA14608-1/1



ASSURANCE STATEMENT

Universal Certification Service Co., Ltd.

TCC Group Holdings 2025 Independent Assurance Opinion

Engagement Information

項目	內容
Assured Organization	TCC Group Holdings
Report Title	2025 TCC Group Holdings Sustainability Report
Reporting Period	January 1, 2025 to December 31, 2025
Assurance Period	June 2026
Reporting Boundary	The scope covers material sustainability data and information from the holding company's global operations. The reporting boundary is consistent with the 2025 Financial Report.
Assurance Boundary	Cement & Environmental Protection Business (Asia) – Taiwan & Mainland China

Subject Matter

The subject matter of this assurance engagement includes the sustainability information and related governance systems prepared by the Assured Organization, as well as the establishment, implementation, and management of the four principles of the AA1000 AccountAbility Principles (2018) (Inclusivity, Materiality, Responsiveness, and Impact) within the subject matter.

Scope of Assurance

The scope of assurance encompasses the sustainability governance framework, stakeholder engagement mechanism, material topic management process, sustainability issue response mechanism, material impact management system, sustainability information management system and disclosure process, as well as the data provided in Appendix 1.

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Page: 1 of 7

Assurance opinion no.: 26UCSAAA14608-1/1



AA1000
Licensed Report
001-067/V3-4762U



環球國際驗證股份有限公司
UNIVERSAL CERTIFICATION SERVICE CO., LTD.

Item	Signatures
Lead Assurance Practitioner	
Technical Reviewer	
Date of Issue / Location	2026/06/29 4 F.-1, No. 21, Sec. 4, Nanjing E. Rd., Songshan Dist., Taipei City, TAIWAN, R.O.C.

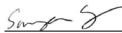
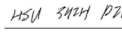
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Page: 7 of 7

ISSA 5000 Assurance Statement

Assurance opinion no.: 26UCSSRAA14608-1/1  ASSURANCE STATEMENT Universal Certification Service Co., Ltd. Independent Limited Assurance Statement I. Addressee TCC Group Holdings CO., LTD. II. Subject Matter Universal Certification Service Co. Ltd. (hereinafter referred to as the "UCS") has been engaged by TCC Group Holdings CO., LTD. to perform an independent limited assurance engagement on selected sustainability information prepared by management in its 2025 Sustainability Report. The assured information for this limited assurance engagement is restricted to the information listed in the "Summary of Assured Information" in Appendix I provided by management. This limited assurance engagement was performed in accordance with the assurance scope and applicable criteria described in this statement, aiming to enhance the degree of confidence of stakeholders in the assured information. This statement should be read in conjunction with the Appendix I to fully understand the scope and content of this limited assurance engagement. III. Assurance Scope and Reporting Boundary This assurance engagement solely covers the information listed in Appendix I. The reporting period is from January 1, 2025, to December 31, 2025. The organizational and reporting boundaries are strictly limited to the content specified in Appendix I. 1. This Statement is the property of Universal Certification Service Co., Ltd., 4F-1, No.21, Sec.4, Nanjing E. Rd., Taipei, Taiwan. TEL: (02)2715-5577. 2. The registration information and authenticity of this Statement can be confirmed at www.ucscert.com.tw 3. This Statement is not valid without the full verification scope, objectives, criteria and findings available on the Statement. Page: 1 of 4	Assurance opinion no.: 26UCSSRAA14608-1/1 IV. Applicable Criteria Assurance Standards: ISSA 5000, Limited Assurance level. Reporting Criteria: GRI Standards, SASB Standards, and the Organization developed criteria. V. Management's Responsibilities Management is responsible for the preparation of the assured information, maintaining internal controls, defining the reporting scope, and the preparation of Appendix I. VI. UCS's Responsibilities UCS performs this limited assurance engagement in accordance with ISSA 5000 and complies with all relevant independence, ethical, and quality management requirements. VII. Key Assurance Procedures The assurance team of UCS performed the following procedures: - Developing an overall approach for the verification plan by combining strategic analysis, risk analysis, and benchmarking analysis at the organizational level. - Conducting document reviews of the Greenhouse Gas (GHG) statement and its supporting documents, systems, and methodologies, as well as collecting and aggregating information and data. - Performing risk assessments at the emission source level (specific facilities, emission categories, and emission sources) to develop the verification plan and evidence-gathering plan. - Executing the verification plan through on-site visits or remote audits to collect sufficient evidence to reach a conclusion. 1. This Statement is the property of Universal Certification Service Co., Ltd., 4F-1, No.21, Sec.4, Nanjing E. Rd., Taipei, Taiwan. TEL: (02)2715-5577. 2. The registration information and authenticity of this Statement can be confirmed at www.ucscert.com.tw 3. This Statement is not valid without the full verification scope, objectives, criteria and findings available on the Statement. Page: 2 of 4	Assurance opinion no.: 26UCSSRAA14608-1/1 - Reviewing and evaluating the corrective actions taken regarding non-conformities and material discrepancies during the execution phase. - Conducting an independent technical review. - VIII. Limited Assurance Conclusion Based on the limited assurance procedures performed and the limited assurance evidence obtained by UCS in accordance with ISSA 5000, nothing has come to our attention that causes us to believe that: The assured information prepared by management and presented in the "Summary of Assured Information" in Appendix I has not been prepared, in all material respects, in accordance with the applicable reporting criteria listed in Appendix I and the assurance standards described in this statement, or contains material misstatements, within the assurance scope, reporting period, and reporting boundary described in this statement. This limited assurance conclusion applies exclusively to the assured information listed in Appendix I. UCS has not performed assurance procedures on information outside of Appendix I, nor do we express any assurance conclusion on information not listed in Appendix I. IX. Other Matters This limited assurance engagement was performed based on the assured information defined by management and does not affect management's responsibility for the preparation of the overall content of the sustainability report. 1. This Statement is the property of Universal Certification Service Co., Ltd., 4F-1, No.21, Sec.4, Nanjing E. Rd., Taipei, Taiwan. TEL: (02)2715-5577. 2. The registration information and authenticity of this Statement can be confirmed at www.ucscert.com.tw 3. This Statement is not valid without the full verification scope, objectives, criteria and findings available on the Statement. Page: 3 of 4	Assurance opinion no.: 26UCSSRAA14608-1/1 X. Signatures Lead Assurance Practitioner:  Technical Reviewer:  Date of Issue / Location 2026/06/29 4 F.-1, No. 21, Sec. 4, Nanjing E. Rd., Songshan Dist., Taipei City, TAIWAN, R.O.C.  環球國際驗證股份有限公司 UNIVERSAL CERTIFICATION SERVICE CO., LTD. 1. 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