TCC
THE FUTURE IS WORTH IT

TCC Group Holdings

Green Financing Framework

February 2025

Table of Contents

1. Introduction

1.1. TCC Group Overview

With industry experience of over 75 years, TCC Group Holdings ("TCC Group" or "the Company", Stock code: 1101 TT) is a leading cement producer with its headquarter in Taiwan. In 1954, the state-run TCC Group was officially transformed from a state-owned enterprise to a private company, and later became the first publicly listed company in Taiwan in 1962. TCC Group, by expanding its services in line with concerned policies which enabled itself to grow together in sync with the industry and the society, takes pride in being a leading brand name in Taiwan. TCC is not just an abbreviation for Taiwan Cement Corporation, but also stands for Total Climate Commitment and Total Care Commitment to environmental and human concerns, demonstrating its dedication to a low-carbon transformation.

The Company's industry categories encompass cement, green energy, battery, energy storage charging, transportation, information technology, shipping, power generation, waste management, property management, and applied building materials. As a company dedicated to green-conscious operating, TCC Group has built its seven key competencies, including outstanding business model and positioning, sustainable growth business model, production facilities as products, AI-powered R&D, leading costs and operations, supply and raw material advantages, as well as talent development, DEI and just transition.

Mr. Nelson An-ping Chang assumed the office as the Chairman in 2017 and the Company undertook to start a full-scale overhaul in 2018, transforming its characteristics from cement manufacturing and sales into green environmental engineering via its acquisition of NHOA in 2021 and the continued investments in power battery and renewable energy developments, dedicated to the handling of the complex relationship between human civilization and the Nature, and further from an ECO-SOLUTION PROVIDER that actively addresses environmental issues into promoting an EARTH HELPER initiative. TCC Group increased its investment in the low carbon cement in Europe, Asia and Africa, with its shareholding raised from 40% to 60% in Turkey's OYAK, and from 40% to 100 % in Portugal's Cimpor in 2023.

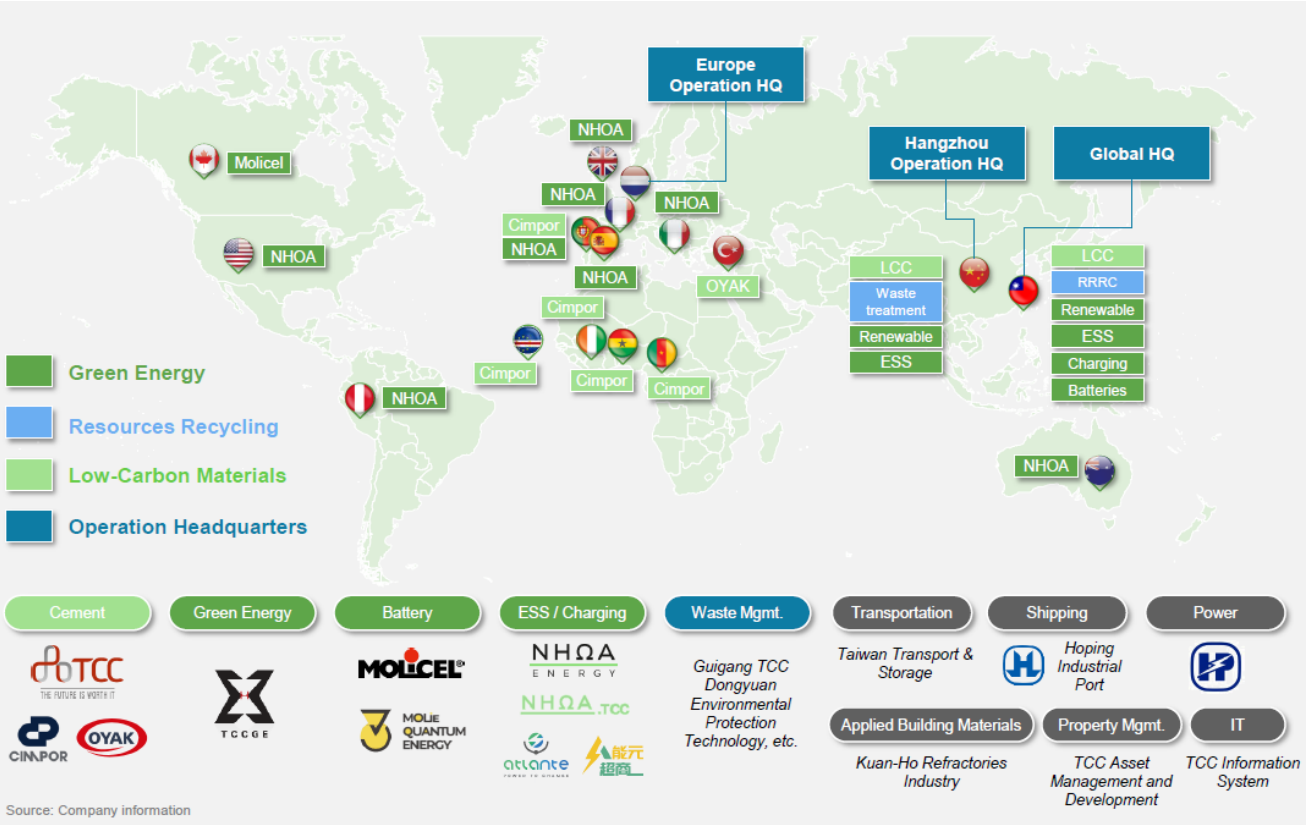
The Company's main business lines are as follows:

Conventional Business

Cement	• No. 1 cement manufacturer in Taiwan since inception, with around 38% market share and an annual capacity of 10.4mm tons, investment in low-emission and low-carbon cement and related material technology • Key cement producer in Mainland China, with leading position in Southern Mainland China with 66.5mm tons in annual capacity • Expanded into cement market in Turkey, Portugal, Ivory Coast and Cameroon by entering into a joint venture company with Turkey's OYAK Carbon Capture, Utilization and Storage (CCUS) technologies
Conventional Power Generation	• Key assets that form an important part of Taiwan's power supply combined with waste treatment services

Transformation Business

TCC Green Energy	• Installed capacity estimated to reach >190 MW, and Renewable electricity generation >288 million kWh by the end of 2023 • Focuses on the advancing geothermal and OTEC research
NHOA	• Offers advanced BESS (Battery Energy Storage Systems), fast charging devices for electric vehicles, and becoming one of the largest V2G providers • TCC Group is now the biggest provider to support enhancement dynamic regulation (E-dReg) fields in Taiwan • Its subsidiary, Atlante, obtained a 5-star GRESB rating, showing its strong ESG performance
Molicel	• Manufacture high performance, superior quality lithium-ion power cells and battery pack products



1.2. TCC's Climate Commitment

TCC Group commits to strict scientific standards, including the 2050 net-zero target, concrete carbon neutrality, and 2050 science-based targets (SBTs), serving as goals for comprehensive carbon reduction strategies.

In 2024, the Company released the TCC Group's Road Map to 2050 Net-zero Pathway for the Cement and Concrete Business Units Worldwide, indicating the feasibility of achieving the Science-Based Targets initiative (SBTi) Interim 1.5°C target the Company submitted in 2024 and formulating detailed net-zero pathway process. TCC Group's 2050 net-zero roadmap for its cement and concrete businesses follows the SBT 1.5°C methodology and ISO's net zero guidelines (IWA 42), with targets for 2030, 2050, and net-zero goals.

In 2023, carbon reduction and green investment capital expenditure accounts for 68% of the total capital expenditure, totaling an amount of NT$16.875 billion. In terms of subsidiaries, CIMPOR and OYAK are both members of the SBT Business Ambition for 1.5°C Campaign, with OYAK being the first cement company in Turkey to announce a net-zero commitment and complete the setting of a 1.5°C target. In addition, TCC Group commits to phase out operating coal-fired power generation by 2040.

Verified Science-based Targets

Verified by the Science-based Targets, TCC Group commits to reduce scope 1 GHG emissions 11% per ton of cementitious materials by 2025 from a 2016 base year and reduce scope 2 GHG emissions 32% per ton of cementitious materials within the same timeframe, aligned with a well below 2°C scenario.

2025

-11%
Scope 1 (base year: 2016)

-32%
Scope 2
(base year: 2016)

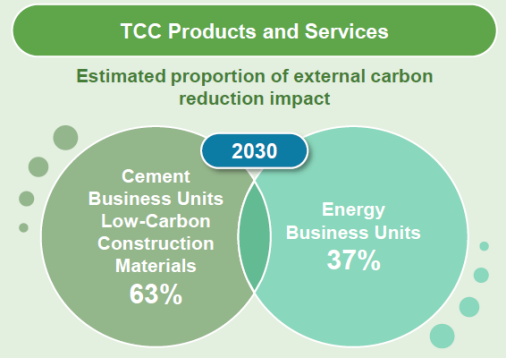
Near-term Targets

TCC Group commits to reduce scope 1 and 2 GHG emissions 26.8% per ton of cementitious materials by 2030 from a 2016 base year, aligned with 1.5°C scenario. Scope covers a total of 14 cement plants in Taiwan and Mainland China.

2030

TCC Group	CIMPOR Portugal	OYAK Cement Türkiye
-26.8% (base year: 2016)	**-22%** (base year: 2022)	**-23%** (base year: 2021)

Scope 1 & 2



2030 Targets of Avoided Emissions[1]

Low-carbon Construction Material **-1.69 Million** Tons CO_2e	Energy Storage **-160,000** Tons CO_2e
Solar and Onshore Wind Power **-530,000** Tons CO_2e	Battery **-320,000** Tons CO_2e

Long-term Targets

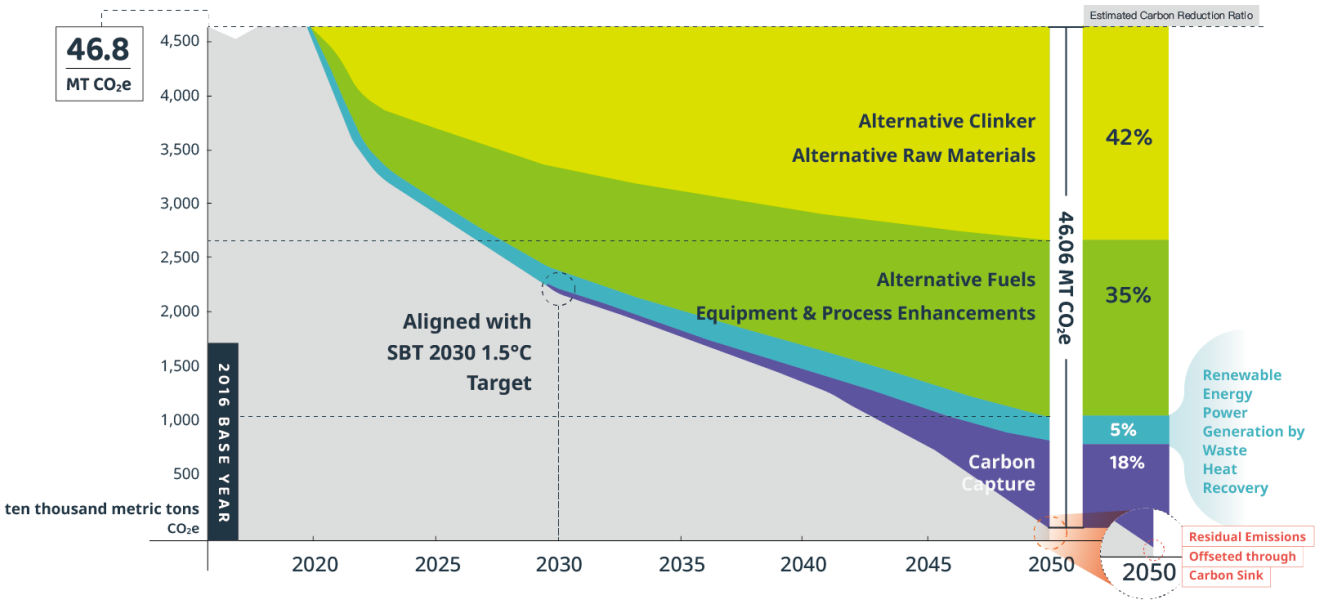
Aiming to become one of the brands capable of producing the lowest carbon cement in the world by 2025, TCC Group is ambitiously pursuing the goal of Net-Zero by 2025.

2050

TCC Group	CIMPOR Portugal	OYAK Cement Türkiye
Net-Zero	**-95.2%** (base year: 2022)	**-95.8%** (base year: 2021)

Scope 1 & 2

[1] The methodologies for calculating avoided emissions are based on the WBCSD's Guidance on Avoided Emissions, WRI's methodology for product carbon reduction impact quantification and European Union Innovation Fund's Methodology for GHG Emission Avoidance Calculation, and it is verified by a third-party entity.



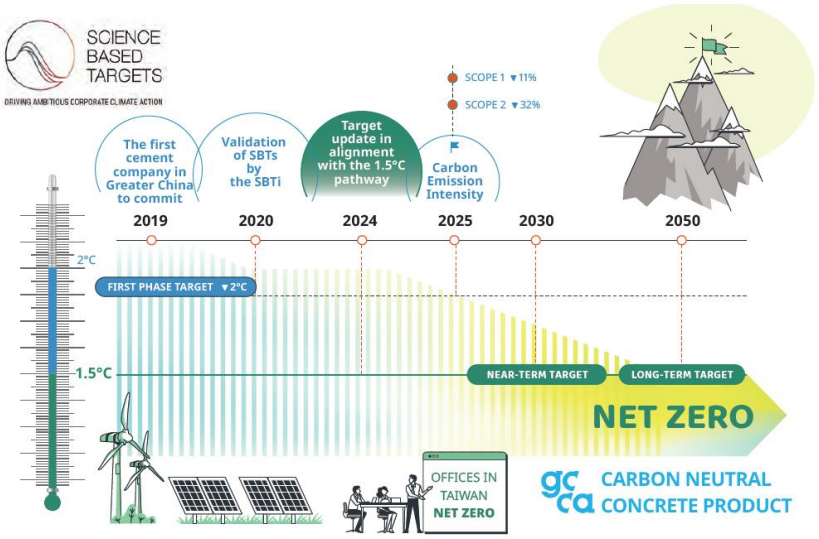
TCC Group's Road Map to 2050 Net-zero Pathway for the Cement and Concrete Business Units Worldwide

1.3. TCC's Sustainability Strategy

With "In Service for Life" being the key value proposition, TCC Group underpins three main developing pillars – "Low-carbon Construction Materials", "Resource Recycling", and "Green Energy", aiming to harmonize human civilization with nature, promoting societal inclusion and co-prosperity with Earth. To achieve the Total Climate Commitment, TCC Group is actively engaging in carbon reduction strategies based on Science Based Targets (SBTs), including equipment & process enhancements, power generation by waste heat recovery, alternative raw materials, alternative clinker, alternative fuels, renewable energy, energy storage, battery, and charging services, as well as carbon negative technologies.

To learn more about TCC Group's sustainability strategy, please refer to TCC Group's Sustainability and TCFD Reports[2].

a) Low-carbon Construction Materials



The Only Company with Dual Carbon Labels of Cement and Concrete: Upholding the goal of "zero waste, zero pollution, and zero emission," TCC Group introduced international standards, including ISO 14001 Environmental Management, ISO 50001 Energy Management, ISO 14064 GHG Emissions Inventory, ISO 14067 Product Carbon Footprint, ISO 14046 Water Footprint Verification, ISO 46001 Water Efficiency Management System, and BS 8001

[2] TCC Group Sustainability Reports: https://www.tccgroupholdings.com/en/esgReport.html

Circular Economy. In addition, TCC Group requires suppliers, contractors, subcontractors, and joint ventures to implement sustainable management in the processes of production, manufacturing, transportation and services.

Low-carbon Cement & Concrete: TCC Group introduced an Internal Carbon Pricing (NT$300/metric ton) to drive low-carbon investment, improve energy use efficiency, and advance the carbon reducing ambition internally, supported by a Carbon Reduction System that TCC Group established to allows for real-time reporting of production data, and automated calculation of carbon emissions. TCC Group also launched a pilot internal carbon trading platform that allocated allowances based on the respective production capacity of individual plants and stipulated carbon intensity targets and carbon emissions caps.

Low-carbon Construction Materials: TCC Group's management's approach is to continuously develop ecofriendly products and innovations to elevate the added value to products and to promote green products. An example would be TCC's newly formulated ultra-high performance concrete (UHPC), an innovative cement material with ultra-high durability and high mechanically-compressive strength. Another example is the TCC-developed fly ash cement, Portland Cement Type IP, which reduces carbon by 15-30% compared to Type I cement.

Low-carbon Construction Materials R&D Center: In January 2023, the Low-carbon Construction Materials R&D Center with thermal, chemical, permeability, durability, and carbon neutral materials laboratories was established to improve aggregate quality and achieve TCC Group's carbon reduction targets.

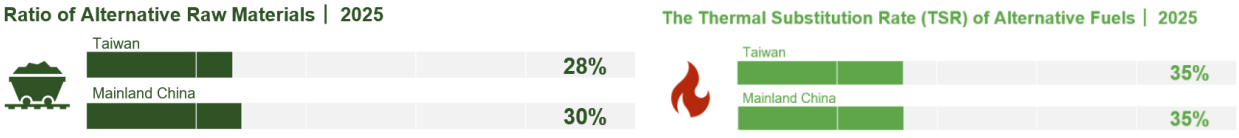
Environmental Indicators Management: TCC Group strengthens measures on environmental protection and management to avert pollution to water, air, and soil, reducing the negative impacts to human health and the environment. TCC Group also adopts best available measures and technology for prevention and control of pollution. As a member of EP100, TCC Group set the targets of 50% energy efficiency improvement by 2040 and has now successfully exceeded the target by 40%.

b) Resource Recycling

TCC DAKA Renewable Resource Recycling Center (RRRC): The TCC DAKA RRRC Project is the first to use cement kilns for waste co-processing in Taiwan, with 23.5% lower 60-year carbon footprint compared to similar projects. The RRRC was officially launched in December 2023, and it possesses a daily capacity of 200 metric tons. The RRRC adopts advanced low-carbon design, including rainwater harvesting and water-saving appliances, rooftop PV system for power for self-consumption, high-efficiency lighting with energy-saving system, enhanced architecture durability, and reduced air conditioning load. The RRRC obtained the Candidate Green Building Certificate in 2023 and obtained the Low Carbon Building Certification during the architectural drawing stage in February 2024.

Alternative Clinker & Clinker-to-Cement Ratio: According to the International Energy Agency (IEA) recommendations, a key area for carbon reduction in the cement industry is to lower the clinker-to-cement ratio. In addition to investing in alternative raw materials or limestone for clinker production, efforts are continuously made to search for and test new materials as substitutes for clinker. TCC Group has set a target of reaching 0.780 for the clinker-to-cement ratio by 2030 and 0.570 by 2050.

Alternative Fuels & Raw Materials: TCC Group prioritizes natural resource and energy consumption issues by developing alternative fuels and raw materials and establishing annual product energy consumption indicators for coal and electricity to avoid unnecessary resource consumption. Through the circular economy model, TCC Group will not just reduce carbon emissions and natural resource usage, but further resolve waste issues for society and enterprises, bringing about synergy of circular economy.



Industrial Symbiosis Ecosphere: TCC Group is committed to circular production, working with industries, governments, cities, and society to foster a circular economy sphere. TCC Group helps several industries manage difficult-to-dispose-of wastes and convert them into alternative cement raw materials and fuels. In Taiwan, TCC Group has created a circular chain of symbiosis across 9 industries, including semiconductor and its assembly, incinerator, power plant, water purifying plant, optoelectronics, steel, and paper.

c) Green Energy

TCC Group aims to create new living models of low carbon and green energy, including low-carbon construction materials, energy creation, energy storage, energy transmission, energy supply, and overall energy solution services,

plus green logistics system service, to build all-round EV low-carbon cities for the future. TCC Group has developed its five core energy business, namely energy creation, energy storage, energy transmission, energy supply and energy solution.

Category	Target year	Target
Energy Creation	2025	235 MW
Energy Storage – Installed Capacity	2025	Taiwan: 840.44 MWh Global: 2.5 GWh
Energy Transmission (Power Cells) – Production Capacity	2024	3.3GWh/year

Energy Creation: TCC Green Energy Corporation has the most diverse development and management of renewable energy in Taiwan. Investment has been made in a variety of renewable energy sources, including solar, wind, geothermal, and tidal energies. In addition, TCC cooperates with different parties in the research and development of forward-looking energy sources such as geothermal energy and ocean thermal energy conversion (OTEC).

Energy Storage: For the stable use of renewable energy in the future, TCC Group is proactively developing energy storage business and integrating technical resources at home and abroad to deliver peak shaving and valley filling and power grid stabilization through energy trading platforms. Key energy storage service providers are available at TCC Group, including ENGIE EPS, NHOA Energy, and EnergyArk.

Energy Transmission: Molicel is devoted to developing advanced ultra-high power cells with high energy density and high discharge power to supply the batteries needed for various electric vehicles in the future.

Energy Supply: TCC Group has expanded into the charging life of consumers and businesses, giving birth to the EV charging stations "integrated with solar, charging and storage applications," planning low-carbon and energy-saving charging solutions for clientele, and building zero-carbon green logistic ecospheres in Taiwan. Specifically, NHOA TCC Charging Stations use self-developed EMS (Energy Management System) to provide charging electricity around Taiwan, with 100% pure green electricity used during peak hours.

Energy Solution: As the renewable energy retailer with the most self-built project sites and the largest green energy available in Taiwan, TCC Group supports small and medium-sized enterprises and electricity users with small demands to rapidly gain access to renewable energy. Through the self-developed AI-powered big data system of clustering algorithms developed by itself, Energy Helper TCC Corporation, a TCC Group's subsidiary, matches renewable energy sources under TCC Group with green electricity consumers, delivering renewable energy with high efficiency.

d) Biodiversity Initiatives

Ho-Ping Ark Ecological Program: TCC Group acknowledges the importance of soil research and emphasizes the need for long-term studies and data accumulation to understand soil biodiversity. To support this, in 2022, TCC Group launched the "Ho-Ping Ark Ecological Program," a 10-year project dedicated to soil species, which is globally unparalleled. TCC Group invited Dr. Chiao-Ping Wang from Taiwan Forestry Research Institute, and the team led by Professor Chih-Han Chang from the Institute of Ecology and Evolutionary Biology, National Taiwan University (NTU) to work on innovative ecological modeling, long-term monitoring and research on soil, and professional cultivation. This included mine soil sampling and testing, studying interactions between soil and plants, and researching the ecosystem function of soil in material cycles.

Member of TNFD Pilot Program – The First Large Manufacturer in Taiwan Involved: TCC Group actively mitigates environmental impacts and addresses potential natural risks, while promoting opportunities for harmonious coexistence with nature. As the first traditional manufacturer in Taiwan to join the TNFD Pilot Program, TCC Group collaborated with Professor Chyi-Rong Chiou, the Director of the Biodiversity Research Center at NTU, and worked

closely with the consultant team from Deloitte to assess the corporation's biodiversity impacts, nature-related risks, and explore nature-friendly opportunities.

Protection of the Indigenous Species from Mines: TCC Group upholds strict self-management standards and requirements for nature-related business activities. All TCC-owned mines undergo thorough environmental impact assessments, including impact projections and assessments, the proposal of countermeasures, or alternative solutions.

Industrial EcoPort Coral Restoration Project: TCC Group utilizes cement bio cubes to provide a solid foundation for coral growth, contributing to a sustainable underwater ecosystem and a diverse marine ecology. The port is now a thriving habitat for coral, attracting more marine creatures to the area. In 2023, the Water Environment Watch of Hoping EcoPort was established by employees voluntarily at Hoping EcoPort. The Watch regularly patrols the waters of Hoping EcoPort to elevate the quality of the ecosystem and to prevent water pollution collectively.

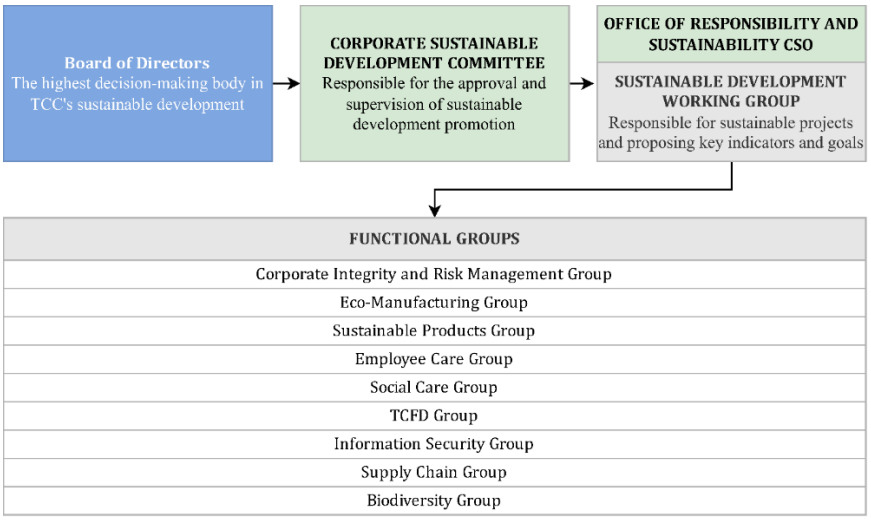
Environmental Education Promotion: TCC Group promotes biodiversity by fostering widespread participation. The Company is dedicated to environmental education, aiming to raise awareness of environmental protection and sustainable development among employees and the public. TCC Group encourages everyone to take eco-friendly actions and contribute to the sustainable development of nature.

World Class Botanic Conservation Base: TCC Group prioritizes ecosystem balance and reconstruction, ceaselessly participates in restoration management, and contributes to international plant conservation efforts. We are dedicated to cultivating endangered species in Taiwan, aiming to protect the ecological environment and biodiversity.

Restoration of the Hoping Mine: The Hoping Mine focuses on soil and water conservation and restoring the mine's original landscape, aligning with Secondary Conservation principles. Some restoration areas have been in progress for over 20 years, achieving a relatively complete forest structure. Expert group confirm these efforts align with OECMs' long-term sustainability principles, noting the mine's location outside protected areas and its effective restoration team. Facilities for nurturing and acclimatizing native species have been set up for gradual in-situ restoration. The restoration is reported to be successful. Following expert advice, TCC Group plans to conduct biodiversity surveys comparing rehabilitated and undeveloped areas to quantitatively assess the restoration success.

1.4. Sustainability Management

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



TCC Group puts its climate strategies into practice by continuously tracking medium- and long-term targets and the performance on various non-financial indicators, incorporating the results into the appraisal for executive remuneration. The achievement rate of internal management targets for carbon reduction of each plant is also linked to the performance appraisal, remuneration, and bonuses for the managers of respective plant, so as to implement the medium- and long-term targets and actively track the performance on climate-related indicators.

2. Green Financing Framework

Rationale for Establishing a Green Financing Framework

At TCC Group, we are strongly committed to enhancing sustainability in our entire operations and value chain. This Green Financing Framework (the "Framework") is an important step in aligning our financing strategy with our sustainability commitments, as outlined in our sustainability strategy. The Framework creates a further opportunity for us to communicate with investors and other market participants on our commitments to creating shared value for the business, society and the environment. The aim will also be to diversify TCC Group's investor base and engage in a sustainable dialogue with socially responsible investors.

2.1. Alignment with Market Principles

The Framework is aligned with the Green Bond Principles[3] ("GBP") published in June 2021 (with June 2022 Appendix 1) as administered by the International Capital Market Association ("ICMA") as well as the Green Loan Principles[4] ("GLP") published in February 2023 as administered by the Loan Market Association ("LMA").

The Framework therefore adopts the four core components of the ICMA GBP and LMA GLP, which include:

- Use of Proceeds
- Process for Project Evaluation and Selection
- Management of Proceeds
- Reporting

The Framework follows the key recommendation of the ICMA and LMA principles with regards to External Reviews, and in line with the four key disclosure guidelines of the Climate Transition Finance Handbook 2023 as published by the ICMA[5].

This Framework may be updated from time to time to ensure continued alignment with voluntary market practices, emerging standards and classification systems. Any updated version of this Framework will either maintain or improve the current levels of transparency and reporting disclosures, including the corresponding External Review.

2.2. Use of Proceeds

Under this Framework, TCC Group, including its subsidiaries, joint ventures and associates, can issue Green Financing Instruments, proceeds of which will be exclusively allocated to Green Projects as described further in this Use of Proceeds section. Green Financing Instruments may include bonds (including private placement), convertible bonds and loans.

An amount equivalent to the net proceeds from the issuance of Green Financing Instruments will be used to finance or refinance, in part or in full, Eligible Green Projects that meet the Eligibility Criteria set out in this Framework. Eligible Green Projects may include assets, capital expenditures (CapEx), operational expenditures (OpEx) including research & development expenses, and/or equity investments into pure play companies[6].

Under the Framework, TCC Group, including its subsidiaries, joint ventures and associates, may issue Green Financing Instruments to finance or refinance Eligible Green Projects under this Framework. For all long-term investments and capital expenditures, TCC Group intends to allocate all the proceeds aligning with our core businesses, associated with carbon reduction and green energy addition (CRGA) activities, including cement/concrete carbon reduction, renewable power generation, resource recycling, waste treatments, battery production, battery energy storage systems, charging stations, and electricity trading.

TCC Group intends to allocate all the proceeds from Green Financing Instruments to Eligible Green Projects within three calendar years following issuance. For existing Eligible Green Projects, TCC Group has set a look-back period,

[3] ICMA Green Bond Principles (GBP) 2021 (with June 2022 Appendix 1)
[4] LMA Green Loan Principles (GLP) 2023
[5] ICMA Climate Transition Finance Handbook 2023
[6] Equity participations in entities where at least 90% of the revenues can be attributed to one or more of the Eligible Green Project Categories described in Use of Proceeds section of this Framework. Financing provided by TCC Group to such business can be considered as allocated towards Eligible Green Projects even if the financing is used for general purposes, so long as the financing does not fund activities listed in the exclusions section set out below.

limiting the allocation of proceeds to expenditures for projects implemented in the three calendar years preceding the issuance of Green Financing Instruments.

In the case of investments made via TCC Group's subsidiaries, joint ventures and associates, including joint ventures entered into by its subsidiaries, only the TCC Group's share of the investments will be applicable as an allocation to the Eligible Green Projects.

a) Eligible Green Projects

Eligible Green Category	Eligibility Criteria	TCC Group Projects Examples
Manufacture of Cement Environmental Objective: Climate Change Mitigation   	Cement manufacturing facilities, R&D and/or application of technology that are expected to result in one of the following: • Grey cement clinker where the specific GHG emissions are lower than 0.722 tCO2 per ton of grey cement clinker • Cement from grey clinker or alternative hydraulic binder, where the specific GHG emissions from the clinker and cement or alternative binder production are lower than 0.469 tCO2 per ton of cement or alternative binder manufactured Where CO2 that would otherwise be emitted from the manufacturing process is captured for the purpose of underground storage, the CO2 is transported and stored underground, in accordance with the technical screening criteria set out in Sections 5.11 and 5.12 of EU Taxonomy Climate Delegated Act Annex 1[7]	• Manufacturing facilities of low-carbon cement & concrete • Low-Carbon Product R&D
Circular Economy Adapted Products, Production Technologies and Processes Environmental Objective: Climate Change Mitigation, Transition to a Circular Economy, and Pollution Prevention and Control  	Waste co-processing and collaboration with industry partners to build a sustainable ecosphere through: • Reduction and recycling of wastes and the dedicated collection and transport activities • Conversion into secondary raw materials and alternative cement raw materials and fuels, with conversion rate of minimum 50% (in terms of weight) of the separately collected waste into secondary raw materials that are suitable for the substitution of primary raw material in production processes	• Collection, management and recycling of wastes • Conversion of waste into alternative cement raw materials and fuels • Investment in alternative raw materials (such as calcium fluoride sludge), reducing consumption, mining and procurement of natural raw materials such as coal, limestone, clay and silica sand

[7] EU Taxonomy Climate Delegated Act Annex 1 https://ec.europa.eu/finance/docs/level-2-measures/taxonomy-regulation-delegated-act-2021-2800-annex-1_en.pdf

Eligible Green Category	Eligibility Criteria	TCC Group Projects Examples
Energy Efficiency Environmental Objective: Climate Change Mitigation   	Equipment and process enhancements, measures to increase energy efficiency that could result in increased energy efficiency based on our best efforts to ensure projects achieve at least a 30% energy efficiency improvement, including investments in energy efficiency systems, lighting upgrades, smart devices to optimize energy consumption, energy-efficient ventilation units Expenditures related to waste heat electricity generation systems (e.g. utilization of heat energy from cement rotary kilns to generate electricity) and flash distillation technology to enhance heat recovery efficiency and reduce purchased electricity	• Energy efficiency equipment and systems such as the air compressor system energy efficiency management • Power generation by waste heat recovery
Pollution Prevention and Control Environmental Objective: Pollution Prevention and Control  	Financing related to the development and acquisition of: • Alternative fuels (including green hydrogen, bioenergy, solid recovered fuel[8], agricultural residual materials) for the manufacturing process Technology to eliminate or significantly reduce and mitigate air pollutants	• Green hydrogen as fuel to replace petcoke • Air pollutant emissions management such as NOx control technologies using reducing agents based on selective non-catalytic reduction (SNCR), the 24-hour Continuous Emission Monitoring Systems (CEMS) • R&D of CCUS
Sustainable Water and Wastewater Management Environmental Objective: Sustainable Use and Protection of Water and Marine Resources  	Water efficiency and water-saving solutions to reduce leakage, reduce water use, increase water reused, or increase the amount of wastewater treated	• Wastewater recycling and Membrane Bioreactor (MBR) treatment system • Water use control and rainwater harvesting

[8] Where applicable, for waste from energy facilities outside the EU, Plant efficiency >= 25%; Bottom ash recovery; >= 90% recovery of metal from ash; Average carbon intensity of electricity and/ or heat over the life of the plant <= waste management allowance; and the capacity of the plant does not exceed the calculated residual waste at any time in the plant's life. Waste from energy facilities in the EU are not eligible under the Framework.

Eligible Green Category	Eligibility Criteria	TCC Group Projects Examples
Renewable Energy Environmental Objective: Climate Change Mitigation 	Development, acquisition, maintenance, and operation of renewable energy including solar, wind, geothermal, and marine energy with direct life cycle emissions of less than 100gCO2e/kWh, and energy storage solutions	• Solar-plus storage system which consists of solar PV and battery storage, aimed at transforming intermittent energy generated from solar PV into a dispatchable power supply • Modular utility-scale battery storage systems to provide grid stabilization services and enable the integration of more renewable energy into the grid • Industrial microgrids that combine distributed renewable energy sources, storage capacity and conventional backup to supplement or replace grid supply for both single and multiple users
Clean Transportation Environmental Objective: Climate Change Mitigation 	Design, development, construction, acquisition, operation, maintenance and upgrades of zero tailpipe emission vehicles, dedicated infrastructure and e-mobility solutions Exclusion: Vehicles and infrastructure dedicated to the transport or storage of fossil fuels Purchase, financing, operation and investment of vessels that meets the following thresholds: • the vessels have zero direct (tailpipe) CO2 emissions; or • the vessels that are able to run on zero direct (tailpipe) CO2 emission fuels or on fuels from renewable sources have an attained Energy Efficiency Design Index (EEDI) value equivalent to reducing the EEDI reference line by at least 20 percentage points below the EEDI requirements applicable on 1 April 2022, and are able to plug-in at berth. For gas-fuelled ships, demonstrate the use of state-of-the-art measures and technologies to mitigate methane slippage emissions; or • Until 31 December 2025, vessels which have an attained Energy Efficiency Design Index (EEDI) value 10 % below the EEDI requirements applicable on 1 April 2022 if the vessels are able to run	• Charging solutions for electric vehicles (EV) • Advanced charging technology that enables the use of parked electric vehicles as energy storage systems for grid stabilization • EV charging infrastructure, equipment and stations • Infrastructure projects associated with electric vehicles • Manufacturing facilities and manufacture of raw materials to produce devices and batteries for electric vehicles • TCC Group's own electric vehicle and electric truck fleet

Eligible Green Category	Eligibility Criteria	TCC Group Projects Examples
	on zero direct (tailpipe) CO2 emission fuels or on fuels from renewable sources	
Green Buildings Environmental Objective: Climate Change Mitigation 	Energy-efficient buildings which have obtained or will obtain • Minimum certification for e.g. "BREEAM Excellent", "LEED Gold", "EEWH Gold" or similar recognized standard Investments and expenditures relating to the renovation of buildings leading to a reduction of primary energy demand of at least 30%; or achieving one of the above-mentioned green building certification levels, as a result of the retrofit	• Molicel Plant with certified green building labelling
Environmentally Sustainable Management of Living Natural Resources and Land Use Environmental Objective: Protection and Restoration of Biodiversity and Ecosystems 	Financing related to the maintenance and sustainable management of natural resources[9] such as land, water, air, minerals, forests, wild flora and fauna, including: • Protection of the Indigenous species (such as coral restoration and conservation, restoration of local species and habitats by ecosystem rebuilding and modelling to address ecology challenges) • Environmentally sustainable forestry, including afforestation or reforestation, and preservation or restoration of natural landscapes and resources	• Projects in CIMPOR's CEMBUREAU Biodiversity roadmap for 2030, including ecosystem rehabilitation and services, the EU Pollinators initiative, invasive species and protected species

b) Exclusions

For the avoidance of doubt, financing related to the following activities are excluded from the financing by TCC Group's Green Financing Instruments:

- Fossil fuel energy; transportation assets that are dedicated to the transport of fossil fuels
- Investments related to pure Internal Combustion Engines (ICE)
- Nuclear energy
- Large hydropower projects with capacities > 20MW
- Gambling
- Tobacco
- Alcohol
- Weapons

[9] Expenditures will exclude remediation of any negative environmental impact of TCC Group's carbon-intensive operations.

2.3. Process for Project Evaluation and Selection

TCC Group has established a Green Finance Committee (the "Committee") with responsibility for governing the selection and monitoring of the Eligible Green Projects.

The Committee will be chaired by the CEO and consists of senior members of the following teams: Finance, Corporate Sustainability, Operation. The Committee will be supported by members of sustainability teams, finance teams, and any other teams from across TCC Group, its divisions and its operating businesses, as appropriate. The Committee will meet on a quarterly basis, and as required for specific issuances.

Where applicable, TCC Group will limit the allocation to a maximum of 10% of the use of proceeds from Green Financing Instruments to equity investments into pure play companies.

Role of the Green Finance Committee

The Committee is the oversight mechanism for:

- Reviewing, selecting and validating the Eligible Green Projects:
  - Members from different Project teams will quarterly recommend Eligible Green Projects to the Committee that meet the eligibility criteria.
  - The Committee will further screen and assess that the Eligible Green Projects meet the eligibility criteria laid out in section 2.2 of this Framework, as well as TCC Group's Sustainability Policies and Procedures;
- Annually reviewing the list of Eligible Green Projects against the eligibility and exclusionary criteria. If a project no longer meets the eligibility criteria set forth in this framework, the Eligible Green Project will be removed from the register and replaced as soon as a substitute has been identified;
- Annually reviewing the allocation of the use of proceeds and determine if any necessary changes (e.g. if an asset has amortized, been prepaid, sold or otherwise become ineligible) and to facilitate ongoing reporting. The Committee will decide any necessary update to maintain continued eligibility of the Use of Proceeds of the Green Financing Instruments.
- Overseeing, approving and publishing the Allocation and Impact reporting;
- Monitoring the on-going market evolution, particularly in relation to disclosure and reporting, to ensure TCC Group is in-line with market practices.

Identification and Mitigation of Environmental and Social Risks

TCC Group has put in place a strong evaluation and selection process that leverages its existing sustainability and risk management framework, to ensure the mitigation of potential environmental and social risks associated with the Eligible Green Projects. This is in addition to ensuring that Eligible Green Projects meet applicable national and international environmental and social standards and regulations.

The Risk Management Committee is responsible for the identification and management of risks associated with corporate operations, including the physical, transition, and emerging risks potentially arising from climate change, and leads the planning for relevant countermeasures. The Committee reports to the Company's Board of Directors on the risk management status annually. The Board adopted "Risk Management Policy and Principles" and "Risk Management Committee Charter" in 2020, to contain the risks potentially resulted from businesses thereof to a tolerable extent and to establish the risk management principles. For further details on risk management, please refer to TCC Group's sustainability report and/or TCFD report.

TCC Group's ESG Policies

TCC Group's environmental and social risk policies define the minimum standards for all of the Group's business activities, including activities that are financed with the net proceeds of Green Finance Instruments issued under this Framework. Application of these policies aim to identify and manage perceived environmental and social risks associated with the Eligible Green Projects. Examples of relevant codes and policies are listed below:

- Biodiversity Policy (link)
- No deforestation commitment
- Climate-related Public Participation and Management Regulations (link)
- Supplier Management Policy (link)

- Green Procurement Policy (link)
- Water management commitment (link)
- Stakeholder Engagement Policy (link)
- Supplier Code of Conduct (link)
- Information Security Policy (link)
- Anti-Corruption and Anti-Bribery Policy (link)
- Human Rights Policy (link)
- Occupational Safety and Health Policy Statement (link)

Furthermore, TCC Group aims to develop and require suppliers to complete the supplier sustainability ability self-evaluation questionnaire, based on OECD Guidelines. In 2024, TCC Group will launch supplier human rights due diligence based on the UN Guiding Principles on Business and Human Rights (UNGPs) in Taiwan, extending to Mainland China in 2025.

2.4. Management of Proceeds

TCC Group's Finance team will manage the allocation of an amount equivalent to the net proceeds of its Green Financing Instruments on an aggregated basis for multiple green financing instruments (portfolio approach). To manage this process, TCC Group will establish a Green Financing Register, which will be reviewed quarterly by Finance team.

TCC Group will strive to achieve a level of allocation to the Eligible Green Project Portfolio that matches or exceeds the balance of net proceeds of its outstanding Green Financing Instruments.

In the process of considering investments for allocation under the Green Financing Instruments, TCC Group will only allocate proceeds to the portion of the Eligible Green Projects that have not been already financed and/or refinanced by one or several other issuers (TCC Group's subsidiaries and owned entities, including joint ventures entered into by its subsidiaries).

Pending full allocation of an amount equal to the net proceeds of outstanding Green Financing Instruments, the unallocated proceeds may be held in temporary investments such as cash, cash equivalents and/ or other liquid marketable investments in line with TCC Group's treasury management policies, and will exclude any investments in activities listed in section 2.2.b Exclusions.

2.5. Reporting

For Green Bonds, TCC Group commits to publish on its website an allocation and impact report annually, starting one year after issuance of the bond, until the full allocation (or until maturity) of the Green Bonds.

For Green Loans and other financing instrument, TCC Group will provide the following reporting according to the specific request by lenders, with the principle to provide transparency and alignment to the GLP.

a) Allocation Reporting

TCC Group will provide information on the allocation of the net proceeds of its Green Financing Instruments on its website. The information will contain at least the following details:

- Net proceeds of outstanding Green Financing Instruments;
- Amount of net proceeds allocated to Eligible Green Projects as defined in the Use of Proceeds section of this Framework;
- Subject to confidentiality considerations, a list of the Eligible Green Projects financed through TCC Group's Green Financing Instruments, including a description of the projects and their geographical distribution where feasible;
- The proportional allocation of proceeds between existing projects (refinancing) and new projects;
- The remaining balance of unallocated proceeds, if any.

b) Impact Reporting

TCC Group intends to align, on a best effort basis, with the reporting recommendations as outlined in ICMA's "Handbook – Harmonized Framework for Impact Reporting (June 2023)[10].

TCC Group will provide impact reporting at the Eligible Green Project Category level, including project level information where possible, which may include the following estimated Impact Reporting Metrics:

Eligible Green Category	Potential Impact Indicators
Manufacture of Cement	• GHG emissions intensity (kgCO2e/tonne cement) • Amount of CO2 emissions captured/reduced/avoided (in tCO2 eq./year)
Circular economy adapted products, production technologies and processes	• Amount of waste that is prevented, minimised, reused or recycled before and after the project in % of total waste and/or in absolute amount in tonnes p.a. • Amount and type of alternative raw materials used • Volume of used products collected from customers for recycling • % reduction in carbon intensity in CO2 emissions intensity • Non-hazardous waste sorted or recovered (m3 or tonnes)
Energy Efficiency	• Annual energy savings in MWh/GWh (electricity) and GJ/TJ (other energy savings) • Annual GHG emissions reduced/avoided in tonnes of CO2e • Annual power generation by waste heat recovery (GJ)
Pollution Prevention and Control	• Amount of CO2 emissions captured/reduced/avoided (in tCO2 eq./year) • Reduction of air pollutants: particulate matter (PM), sulphur oxides (SOx), nitrogen oxides (NOx), carbon monoxide (CO), and non-methane volatile organic compounds (NMVOCs) • Amount and type of alternative fuels used
Sustainable Water and Wastewater Management	• Annual water savings (m3/a, reduction in water use in %) • Annual volume of wastewater treated, reused or avoided (m3/a and p.e./a and as %)
Renewable Energy	• Annual CO2 emissions reduced/avoided (in tCO2 eq./year) • Annual connection of renewable energy generation in MWh/GWh (electricity)
Clean Transportation	• Annual GHG emissions reduced/avoided in tCO2-e p.a. • Amount of energy saved through production of devices and batteries for electric vehicles • Number of ZEVs deployed • Estimated reduction in fuel consumption • Number and type of green vessel financed
Green Buildings	• Certification Standards • Type of scheme, certification level • Annual GHG emissions reduced/avoided in tonnes of CO2 equiv/a • Annual energy use reduced/avoided (kWh/a)
Environmentally Sustainable Management of Living Natural Resources and Land Use	• Area covered by sustainable land and water resources management practices • Maintenance/safeguarding/increase of natural landscape area (including forest) in km^2 and in % for increase • GHG emissions removed/reduced/avoided CO2 equiv/a

[10] ICMA, Handbook – Harmonized Framework for Impact Reporting (June 2023)

2.6. External Reviews

TCC Group's Green Financing Framework is supported by the following external reviews:

a) Second Party Opinion ("SPO")

TCC Group has appointed ISS Corporate Solutions, Inc. to provide a Second Party Opinion on the Green Financing Framework, to confirm alignment with the ICMA 2021 Green Bond Principles and LMA 2023 Green Loan Principles. The Second Party Opinion is available on TCC Group's website[11].

b) Post-Issuance External Verification on Reporting

TCC Group will request on an annual basis, starting one year after issuance and until full allocation, an assurance report on the allocation of Green Financing Instrument proceeds to Eligible Green Projects, provided by an external review provider.

3. Amendments to this Framework

TCC Group will review this Framework from time to time, including its alignment to updated versions of the relevant Principles as and when available in the market. Any major update will be subject to the review of Sustainalytics or any such other qualified provider of Second Party Opinion.

[11] TCC Group Website

Appendix

External Recognitions and Partnerships

International Ratings	• 2023 CDP Climate Change "B" • Supplier Engagement Rating (SER) "B" • 2023 CDP Water Security "B" • 2024 Dow Jones Sustainability Index Score "84/100", ranking third globally in the Construction Materials industry peer group, and ranking first globally in the Environmental Pillar score alongside two other companies • 2023 MSCI ESG Ratings "A" • S&P Global CSA adopted in DJSI • Top 7 S&P Global ESG Score, Construction Materials Industry • Sustainalytics "ESG Top-Rated Company" • ESG Risk Rating 23.6 ranking 12th out of 133 in the construction materials industry group • Taiwan Ratings "twA+" • Rating Outlook "Stable" Liquidity Assessment "Extremely Robust" • Greater China Business Sustainability Index "Pace-setter" • 2023 Taiwan Sustainability Ratings of the NTPU on SEED "AAA" • TIP Customized Taiwan Green Energy and Electric Vehicles Index Constituent • TIP Customized Taiwan Smart Vehicles and Supplier Alliances Index Constituent • FTSE4Good TIP Taiwan ESG Index Constituent • Taiwan Corporate Governance 100 Index Constituent • MSCI Taiwan Select ESG Sustainability High Yield Top 30 Index • Top 5% in the 10th Corporate Governance Evaluation of TWSE • Business Weekly's "Carbon Competitiveness 100"
Sustainability Initiatives	• Member of Science-Based Targets initiative (SBTi) • TCFD Supporter • TNFD Early Adopters • ISSB's "Partnership for Early Awareness of Sustainability-Disclosure Today" • EP100 Member • The 1st large manufacturer in Taiwan • Business for Nature • Make it Mandatory & Call to Action signed • Founding partner of BCSD Nature Positive Initiative • Taiwan Alliance for Net Zero Emission • It's Now for Nature
Sustainability Recognitions	• The 19th CSR and ESG Awards of Global View Monthly in 2023 Honor of the Model Award of Low-carbon operations • No. 2 in 2023 CommonWealth Excellence in Corporate Social Responsibility • Top 5, 2023 CommonWealth Talent Sustainability Award • Top 10 Taiwanese Sustainable, Manufacturing Companies Award, 2023 TCSA, for 3 years in a row • Sustainability Report Platinum Award • Climate Leadership Award • Circular Economy Leadership Award • Golden Award, Profit-seeking Enterprise Category, 2023 Taiwan Biodiversity Awards • 2023 BSI Sustainability Resilience Award - Pioneer • 2023 "Energy Taiwan" and "Net—zero Taiwan" • Sustainability Awards • Platinum Award • Popularity Award • Gold Award, Green Design Award, 2023 SDGs Asia • Silver Award, Sustainable Micro Movie, 2023 Taipei Golden Eagle Micro Movie Festival • Film: "Build Home for Coral Reefs" • Hoping EcoPort • Excellence Award, the 9th National Environmental Education Awards • High Distinction Award • Environmental Education Award, Hualien County No. 1 • Citizen Carbon Reduction Competition, Hualien County
Green Certifications	• Hoping Plant, Hualien • Distinction Award, ESG Contribution Award, 2023 Taiwan Circular Economy Awards

	• Clean Production System of Green Factory Certification
	• TCC Suao Plant • Outstanding Enterprises in Industrial GHG Emissions Reduction from Industrial Development Administration (IDA), MOEA • Clean Production System of Green Factory Certification • Excellence in Green Procurement, Yilan County
	• Taichung and Kaohsiung RMC Plants • Clean Production System of Green Factory Certification, MOEA
	• Taipei, Taichung, Dadu, Kaohsiung, and Tainan RMC Plants • Excellence in Green Procurement, Ministry of Environment
	• Taipei RMC Plant • Outstanding Enterprises in Green Procurement Performance, Environmental Protection Department, New Taipei City
	• Kaohsiung RMC Plant • Entities with Distinguished Contribution in Green Procurement Amount, Environmental Protection Bureau, Kaohsiung City
	• Tainan RMC Plant • Excellence in Green Procurement and Resource Recycling Reporting Award, Environmental Protection Bureau, Tainan City
	• TCC DAKA Open Eco-Factory • Passed in the Renewal Evaluation, Tourism Factory, IDA, MOEA • High Distinction Award of the Best Public Toilet Award, MOE
	• Hanben Ocean Station • Silver Award, Outstanding Public Toilet Ratings of Yilan County

Supporting the UN Sustainable Development Goals ("SDGs")

SDG	Approaches at TCC Group
SDG4 – Quality Education 	EARTH HELPER Carbon Reduction Parent-Child Bankbook, Cement Academy, and Mine Environment Education
SDG7 – Affordable and Clean Energy 	For everyone to access the benefits of renewable energy, TCC Group develops renewable energy and builds energy storage systems to resolve the issue of intermittency in renewable energy supply. In addition, TCC Group invests in battery R&D and installation of chargers to break the distance limit for renewable energy access. Meanwhile, TCC Group is developing safe energy storage solutions. Finally, to solve the predicament of inability to procure green energy by the small and medium-sized enterprises, Energy Helper TCC Corporation was established for all to have the right to renewable energy access.
SDG8 – Decent Work and Economic Growth 	TCC Group emphasizes the local development at the Heping Village, establishing TCC DAKA to provide whole new industries, types of works, and opportunities to the Heping area.
SDG9 – Industry, Innovation and Infrastructure 	TCC Group has integrated core capabilities to develop low-carbon products, Ultra-High Performance Concrete (UHPC), and introduce 3D printed construction materials. Concurrently, TCC Group is promoting carbon capture technologies, including pure oxygen combustion techniques. TCC Group is adopting eco-friendly transportation such as by introducing electric mining trucks and eco-friendly cement carriers.
SDG11 – Sustainable Cities and Communities 	Leveraging our own industrial characteristics, TCC Group assists the governments and enterprises in waste treatment. TCC Group is developing low-carbon building solutions, aiming to reduce carbon without reducing strength, and total solution of low-carbon new energy. Meanwhile, urban microgrids installation plays a significant role in facilitating electric vehicles usage, aiding cities' net-zero transition.
SDG12 – Responsible Consumption and Production 	Zero waste action on the plants Progress on the EARTH HELPER initiative. TCC Group is committed to resource recycling and using recycled materials with low environmental impact for the sustainable use of resources of Earth Resource Recycling: Smart low-carbon production and co—processing of waste. P.210
SDG13 – Climate Action 	With the TCFD framework introduced, TCC Group identifies risks and opportunities related to climate change and adopts coping strategies to elevate corporate resilience. Meanwhile, developing innovation carbon negative technologies, TCC Group continues to invest in carbon capture R&D.
SDG14 – Life Below Water 	Attaching great importance to marine ecology, TCC Group transplants the coral fragments broken by waves outside the embankment of Hoping Industrial EcoPort in Hualien onto artificial reefs to restore coral ecology.
SDG15 – Life on Land 	TCC Group conducts "Ho-Ping Ark Ecological Program," which is the first in Taiwan for comprehensive soil research, to study the materials needed for the ecological sustainability applications in the future through long-term monitoring of biodiversity in soil. In addition, restoration is conducted alongside mining, prioritizing native species for restoration. TCC Group employs two approaches: first, creating nurseries and hardening facilities with KBCC and academics to grow local species. Second, using natural succession to increase vegetation diversity and richness.

Disclaimer

The Framework is intended to provide non-exhaustive, general information. The information and opinions provided for in the Framework as at the date of this document are subject to change without notice. TCC Group does not assume any responsibility or obligation to update or revise any such statements, regardless of whether these statements are affected by the results of new information, future events or otherwise.

The Framework contains certain statements which are not historical fact and constitute "forward-looking statements". Although TCC Group believes that the expectations reflected in the forward-looking statements are reasonable, TCC Group gives no assurance that such expectations will prove correct. In addition, the forward-looking statements are subject to numerous factors, risks and uncertainties that are difficult to predict and generally beyond TCC Group's control, which could cause actual results and events to differ materially from those expressed or projected in the forward-looking statements.

The Framework is not intended to be and should not be construed as providing legal or financial advice. It does not constitute an offer or an invitation to sell or any solicitation of any offer to subscribe for or purchase or a recommendation regarding any securities of TCC Group. This Framework is not, does not constitute, nor should it be interpreted as, or form part of, any offer or invitation to underwrite, subscribe for or otherwise acquire or dispose of, any solicitation of any offer to underwrite, subscribe for or otherwise acquire or dispose of, any securities issued or to be issued by TCC Group. Any decision to buy or invest in securities shall be made solely and exclusively on the basis of the information set out in the relevant prospectus or equivalent or related documentation filed or otherwise made available to prospective investors by TCC Group. Under no circumstances will TCC Group have any liability whatsoever (in negligence or otherwise) for any loss or damage howsoever arising from any use of the Framework or its contents or otherwise arising in connection with the Framework.