

TCC GROUP HOLDINGS

Championing nature and sustainability in the cement and materials sector

March 2025

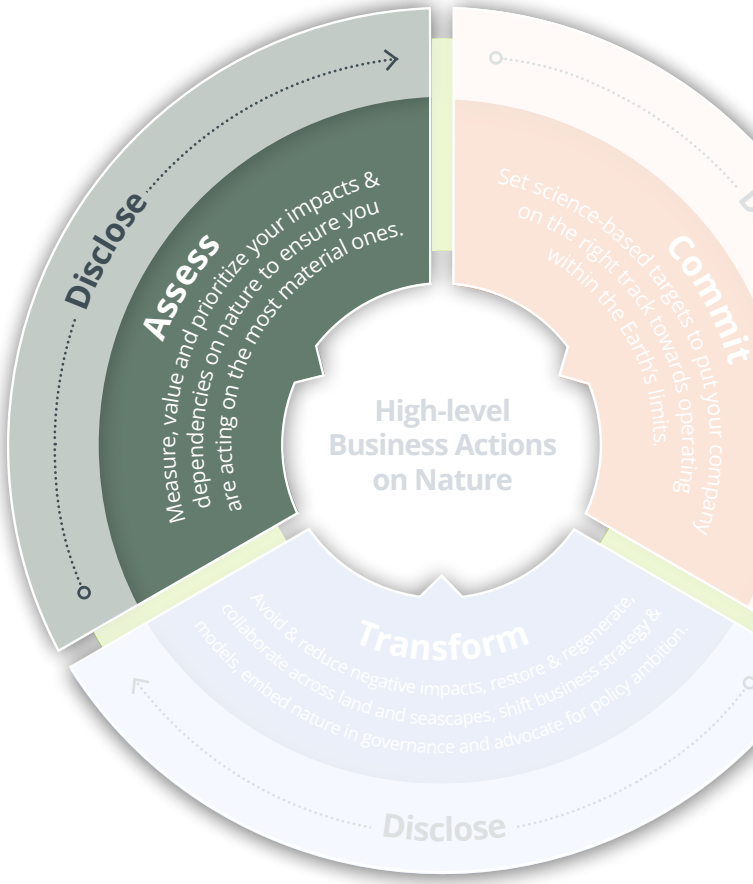
TCC isn't just about cement; with operations in several markets including Taiwan, China, Portugal, Turkey, Republic of Côte d'Ivoire, Cape Verde and the Republic of Cameroon, the company is becoming a **leader in low-carbon materials, resource recycling, and renewable energy**. Recognizing the vital role of nature and driven by a commitment to **community and investor interests**, TCC integrates nature-focused initiatives across its operations through capability building and a number of innovative initiatives closely aligned with the cement sector guide's pathway for a nature-positive future. TCC has developed its nature strategy which was submitted and published as part of 'It's Now for Nature'. Aligned with the Business for Nature ACT-D high level business actions on nature — Assess, Commit, Transform, Disclose — TCC showcases how focusing on **nature and sustainability** can unlock real business opportunities.

Recent highlights

- **37%** of consolidated revenue generated from low carbon products, renewable energy trading and waste services
- More than **$83 million** (NT$ 2.7billion) in nature-related cost savings from reduced use of feedstocks, electricity, and increased use of reclaimed water
- **2040** goal to have net positive biodiversity impact in the cement sector



Assess: Collaborative partnerships, leading frameworks, and plug and play tools for understanding scale of impact



TCC is motivated by both its **deep reliance on natural resources** and a **commitment to community and investor expectations**, alongside a **proactive stance on nature regulations**. Its annual nature-related reports leverage **TNFD's LEAP approach to assess biodiversity impact** – currently, the report covers TCC' s operational sites in Taiwan, but the company plans to extend its scope across other locations in the coming years.

TCC has **partnered with the National Taiwan University to evaluate the ecological sensitivity** of its main operational sites based on sensitivity of ecosystems and species. TCC has also conducted a **preliminary assessment with ENCORE to understand the dependencies and impacts** on key assets like mines, plants, and ports. Through this, the company identified ten nature-related risks and twelve opportunities, bringing departments together to develop strategies that align with these insights.

In an ongoing restoration project at its Hoping Mine (since 2016), TCC is using **WBCSD's methodology for Net Impact Assessment (NIA)** specifically designed for the cement industry. This initiative aims to track biodiversity index changes over time aiming to foster long-term ecological balance in the areas it operates.



TCC uses the LEAP approach and ENCORE...

- TNFD's LEAP approach leverages **plug and play tools** (e.g. ENCORE) to assess the impact of a business segment on nature
- In 2023, TCC assessed mines, cement and power plants, and ports in Taiwan as a **first step to achieving business value**
- The nature value of operating sites is determined from **ecosystem and species sensitivity**



The Dependencies and Impacts Aligned with TNFD LEAP Approach and Sector Guidance

	Scope	Mines	Plants	Power Plants	Port
Dependencies Ecosystem Services	1 Surface water	HIGH	VERY HIGH	VERY HIGH	HIGH
	2 Ground water	HIGH	VERY HIGH	MODERATE	HIGH
	3 Water flow maintenance	HIGH		MODERATE	MODERATE
	4 Water quality		LOW	LOW	LOW
	5 Climate regulation	HIGH		VERY LOW	MODERATE
	6 Mediation of sensory impacts		LOW		
	7 Dilution by atmosphere and ecosystems		LOW		
	8 Filtration			LOW	
	9 Bio-remediation			VERY LOW	
	10 Mass stabilisation and erosion control	MODERATE		LOW	MODERATE
	11 Flood and storm protection			MODERATE	MODERATE
	12 Natural disaster protection	VERY HIGH	VERY HIGH	VERY HIGH	VERY HIGH
Impacts Impact Drivers	A Disturbances	HIGH	HIGH	HIGH	HIGH
	B Freshwater ecosystem use	HIGH	HIGH	HIGH	VERY HIGH
	C Marine ecosystem use		HIGH		VERY HIGH
	D Terrestrial ecosystem use	VERY HIGH	VERY HIGH		HIGH
	E GHG emissions	HIGH	HIGH	HIGH	HIGH
	F Non-GHG air pollutants	HIGH	MODERATE	HIGH	
	G Soil pollutants	HIGH		MODERATE	HIGH
	H Solid waste	HIGH	HIGH	HIGH	MODERATE
	I Water pollutants	HIGH	MODERATE	MODERATE	HIGH
	J Water use	VERY HIGH	HIGH	VERY HIGH	

VERY HIGH HIGH MODERATE LOW VERY LOW

...to identify key impact drivers


Land use change


GHG emissions


Pollution of air, water, noise


Invasive Species


Depletion of mineral / water resources

Source: TCC TNFD Report, 2023

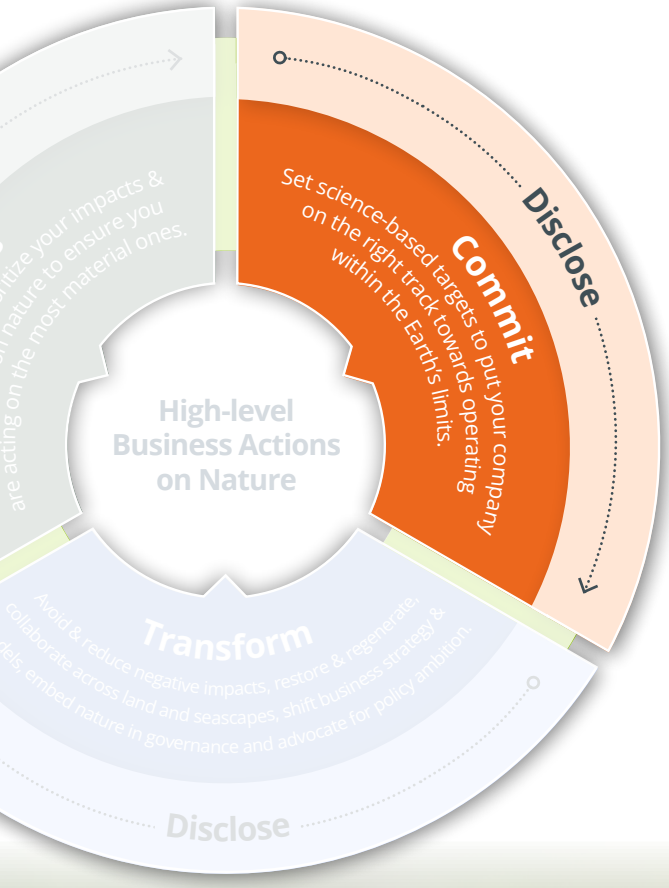
Spotlight: Applying WBCSD's NIA methodology in the Hoping Mine

Restoration at TCC's Hoping Mine has been ongoing since 2016. To assess impact and progress TCC has used WBCSD's methodology to analyze changes in the biodiversity index curves. To do so, TCC used the following to obtain the biodiversity index of the mine:

- GIS software to understand the trends in the mining area and classify habitats
- EIA reports to assess the importance of habitats in terms of location and species
- A framework based on maturity, species diversity and degree of threats to assess habitat condition

Going forwards, TCC aims to introduce NIA across Taiwan and Mainland China to assess and track changes in the biodiversity index of mines in a scientific and quantitative manner.

Commit: Holistic approach to environmental responsibility

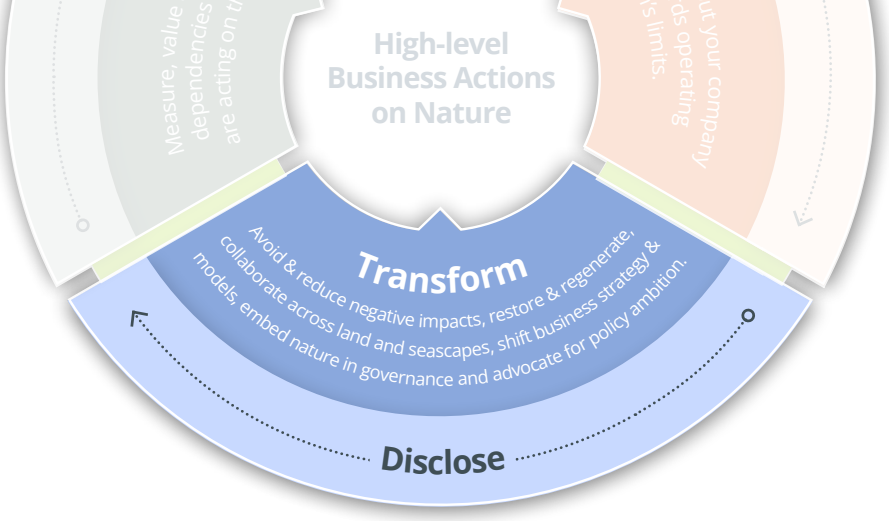


In line with its nature and sustainability strategy, TCC aims for **Net Positive Impact (NPI) by 2040**. Through the implementation of National Impact Assessments, TCC aims to trace the changes in the biodiversity index at each mine, using these metrics to ensure progress towards its NPI goal. The company is dedicated to thorough biodiversity assessment and management, covering **100% of its Taiwan mining sites with Environmental Impact Assessments** and aiming for **100% coverage of Biodiversity Management Plans in high-risk areas**.

In its mining areas, TCC has pledged **full recovery and restoration**, with **quarterly environmental monitoring**. By 2030, TCC aims to **preserve over 40,000 plants**, including endangered species. By 2035, it also aims to **increase total organic carbon stock by 60%** at its Hoping Mine.

Other environmental goals include **achieving a "Zero Waste" target** through waste minimization and resource recovery and **reducing usage**, including water consumption. TCC is the first in its industry to secure the ISO 46001 Water Efficiency Management System Certification, achieving a recycling rate of more than 85%.TCC has also aligned its climate targets with SBTi, **committing to net zero emissions by 2050** and **reducing Scope 1 and 2 emissions by 27% by 2030**, based on a 2016 baseline. As it advances toward these milestones, TCC is also actively building and verifying its Scope 3 inventory, which is now complete for Taiwan and Mainland China sites.





Transform: Driving nature action from within

TCC is transforming its approach to nature and sustainability through a series of internal and external initiatives. Internally, **TCC has created a biodiversity team**, bringing together people from various departments to assess the impact of its operations on nature. This team leads TCC's action on biodiversity and brings challenges to the sustainability committee and board for bi-annual review. **Building expertise is essential to TCC's mission**, with ongoing training and ESG-focused hiring – including from communities - and across departments.

Externally, TCC is **piloting a number of innovative nature-positive initiatives**. At its Hoping Mine, TCC partnered with academic experts to conduct **the world's first soil fauna and carbon sink survey in a quarry** (see spotlight box, page 4). This soil survey, aimed at understanding post-mining restoration, has shown promising 2024 results, with soils in rehabilitated areas showing higher organic carbon than non-restored regions—a strong indicator of ecosystem recovery. Meanwhile, TCC's EcoPort Coral Rehabilitation project has **restored over 1,000 corals since 2021**, and a 2023 survey found a resurgence of fish and rare giant clams, signifying ecosystem revival.

Product innovation is another crucial element in TCC's nature and sustainability strategy. Low-carbon products, renewable energy, and waste reclamation currently make up about 37% of TCC's annual revenue in 2023. Adapting production technologies to use diverse inputs has been challenging, but TCC is addressing this through **increased R&D in technology and nature-based solutions**. These efforts have also led to **over $83 million (NT$2.7 billion) in internal savings** through reduced raw material needs and lower water and energy consumption.

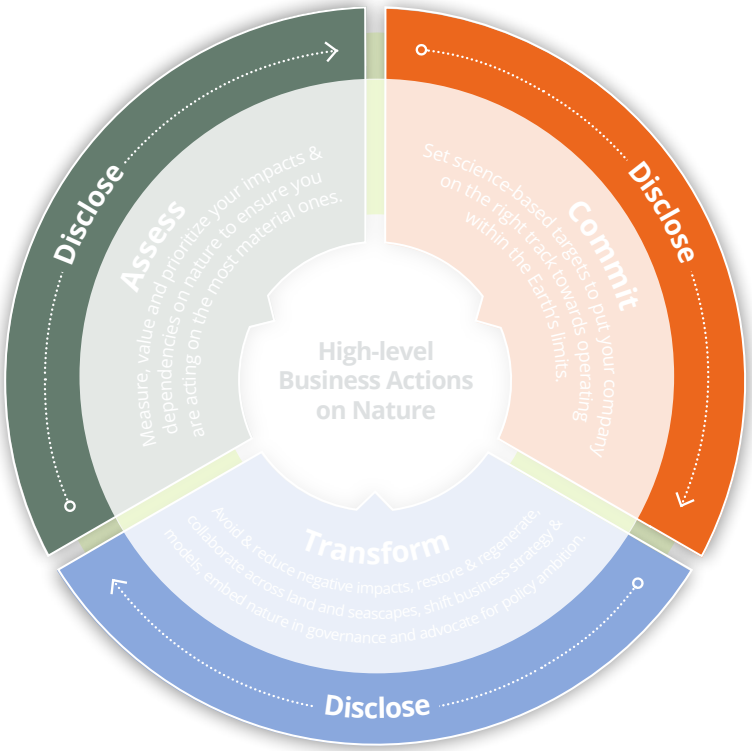


> "By embracing nature as a partner, not a resource, we're unlocking a new era of sustainable innovation. Our commitment to biodiversity, circular economy, and renewable energy is not just a corporate responsibility; it's a strategic imperative that drives long-term value for our business and the planet."
>
> Yi-Chung Chen, Assistant Vice President, TCC Group Holdings

Disclose: Proactive alignment with leading frameworks and standards

As one of the few construction companies in the **Taskforce on Nature-related Financial Disclosure's (TNFD) Early Adopters cohort**, TCC is setting an example with environmental transparency. TCC published its first TNFD report in 2022 and continues to release this report annually. Moving forward, TCC aims to release the report biannually. TCC **openly shares key nature and environmental metrics** on its website. These include GHG emissions, water usage, waste data, and raw materials consumption, which are also detailed in the TNFD and Sustainability reports.

To ensure accuracy, TCC has established **robust internal auditing processes for compiling sustainability data**. Clear roles and responsibilities help streamline this process; for instance, data for the sustainability report comes from the Corporate Sustainable Development Committee taskforce and various departments, with the final report published only after board approval.



TCC places a strong emphasis on external assurance and compliance, adhering to recognized standards like ISO 14001 and ISO 50001. Its sustainability reports are audited by Deloitte and verified by BSI Taiwan, ensuring accountability and trust in their environmental efforts.

Looking ahead, **TCC plans to broaden its nature and sustainability reporting** to cover regions beyond Taiwan. However, **a key challenge remains in accessing comprehensive environmental data**—a gap that could be partially bridged through strategic academic partnerships.



> "Navigating data gaps and diverse regulatory environments is challenging, but through strategic and collaborative partnerships with universities and experts, we are developing standardized approaches that will accelerate our journey and help us deliver our nature strategy."
>
> Yi-Chung Chen, Assistant Vice President, TCC Group Holdings

Insights from TCC on embracing nature and sustainability

TCC's approach provides valuable lessons for companies eager to lead in nature strategy development:

1. **Internal collaboration is key to developing a nature strategy.** By forming dedicated teams and fostering cross-departmental collaboration, companies can seamlessly integrate nature into existing sustainability and climate goals.
2. **Investing in research and development is essential** for creating innovative and sustainable solutions. By building expertise and fostering a culture of innovation, companies can develop products and processes that have a minimal environmental impact.
3. **A collaborative approach can help overcome challenges and accelerate progress.** By partnering with other organizations, such as NGOs, academia, and industry peers, companies can better understand and manage their impacts on nature while also helping close data gaps.
4. **Sharing best practices can amplify impact and drive industry-wide change.** By openly sharing knowledge and experiences, companies can help others who are earlier in their nature journey. For, example TCC has developed its nature strategy which was submitted and published as part of 'It's Now for Nature'.

