CTCI
Discover Reliable

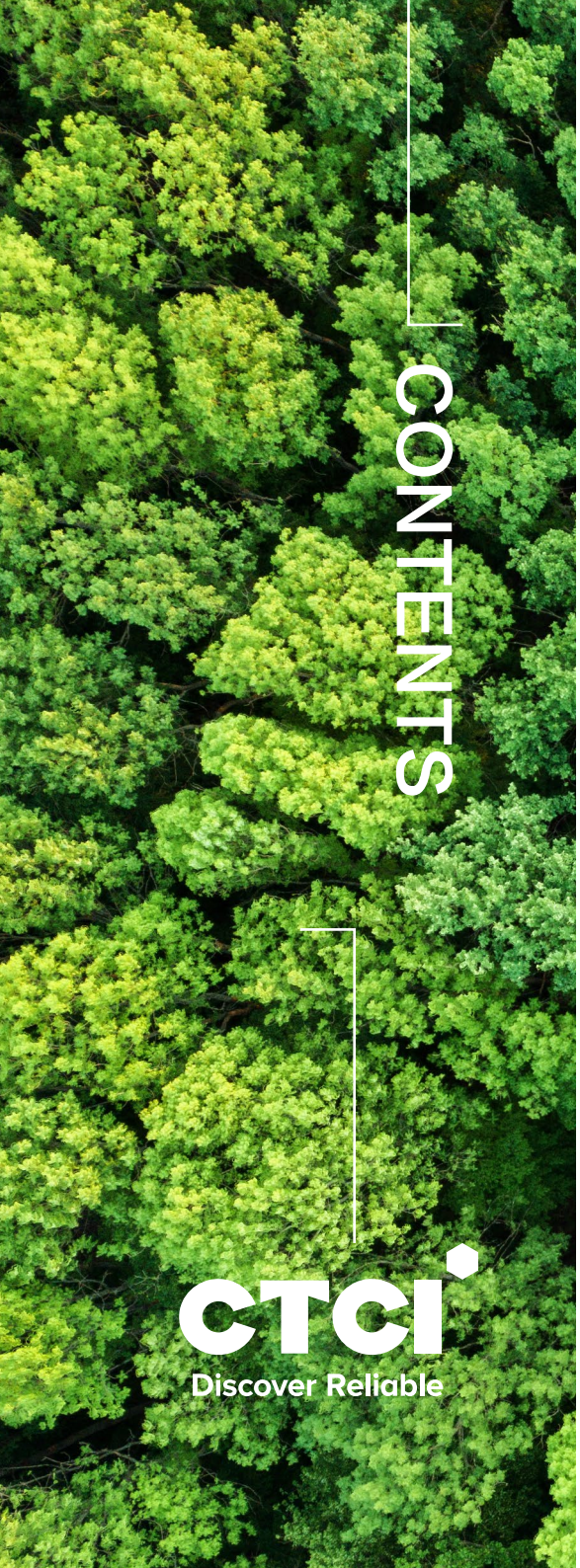
2023

CTCI Sustainability Report

A Guardian of Sustainable Earth

Net Zero

The logo is designed with the concept of "number zero (0)" and "cycling". By overlapping "0" with the letters "EPC", it symbolizes that CTCI is committed to realizing the goal of circular economy and net zero emissions in EPC project executions.



Messages from the Management

Guardian of sustainable earth: CTCI Promotes Global Sustainability with Green Engineering

As global warming heats up, seeking concrete actions to accelerate carbon reduction has become the goal of all walks of life. As a leading global engineering, procurement, and construction (EPC) project contractor in Taiwan and one of the top 100 globally, CTCI has contracted projects ranging from solar, water, and wind-related industries to large-scale infrastructures closely related to people's lives such as electricity, resource recycling and reuse, and mass rapid transit (MRT), holding sway on the sustainable development of this land. CTCI has implemented the ESG vision of being "A Guardian of Sustainable Earth" in response to the challenges posed by climate change, encouraging all employees to practice sustainability through their core business operations. Additionally, centered on "green engineering" that takes both the economy and the environment into consideration, CTCI collaborates actively with international partners to develop "low carbon supply chain" and implement "net-zero emissions", fostering overall progress and sustainable development. CTCI is committed to integrating the concept of sustainability into the corporate culture, and strengthens the promotion of three major aspects: governance (G), social participation (S), and environmental protection (E), making sustainability the core competitiveness and DNA of the Company.

Full Commitment to ESG: Leading the World in Sustainability Performance

In terms of governance (G), CTCI has deeply ingrained environment, social and governance (ESG) concept into employees' daily work. According to the "Employee Engagement" survey conducted by an external unit in 2023, the recognition rate of ESG among employees reached 86%, ranking first in all topics. The excellent ESG performance displayed has won multiple external awards and recognitions. CTCI is the first engineering company in Taiwan to be selected as a component of the Dow Jones Sustainability Emerging Markets Index for 9 years in a row, and sustaining its position in the top 1% of the S&P Global Sustainability Yearbook.

As a leader in the engineering industry in Taiwan, CTCI actively promotes carbon emissions reduction and transformation development of the industry. Hereby, the group promotes "ESG for All Staff", encouraging colleagues to propose innovative ideas from their work and convening "Sustainability and Net-Zero Progress Meetings" monthly; to date, over 100 energy-saving and carbon-reduction innovative proposals have been successfully applied across various construction processes. "Net-zero" has also been included as one of the KPI performance measures, aiming to achieve sustainability goals.

Additionally, CTCI has set its carbon reduction targets according to the Science Based Targets initiative (SBTi) 1.5°C pathway standard, aiming for a 45% reduction by 2030 compared to the baseline year of 2022, and achieving net-zero emissions by 2050. CTCI also actively participates in sustainable organizations and advocacy initiatives with green commitments, acting as a founding member of "Taiwan Alliance for Net Zero Emission" and "Taiwan Net Zero Emissions Association", and convening the "Carbon Capture Group" of the Taiwan-US Carbon Capture, Utilization and Storage (CCUS) Industries Promotion Alliance (TUCA) to further demonstrate its impact on sustainable engineering.

Innovative Green Engineering: Collaborating with Global Partners for Earth's Sustainability

In terms of environmental protection (E), CTCI is committed to sustainable development through its core engineering expertise, actively promoting "green engineering". Integrating cross-field experiences and green technologies such as carbon emissions reduction, energy saving, pollution removal, waste reduction, and resources recycling, CTCI provides clients with comprehensive net-zero sustainability solutions by adopting a holistic lifecycle approach. Additionally, with its innovative research and development of smart value-added services including iEPC and digital twin integrating green energy and intelligence, CTCI accelerates the effectiveness of energy conservation and emissions reduction, striving to contribute to the sustainable development of the planet. For the detail of "green engineering", please refer to a certain section in this report.

Through the promotion of "green engineering", CTCI is steadily moving towards the "Net Zero Goal" while proactively exerting its influence by working with owners and supply chain partners to establish a "Green Supply Chain", establishing "CTCI Net Zero Supplier Alliance" and holding "Taiwan Sustainable Engineering Forum" every year. CTCI hopes to lead the engineering industry in the implementation of sustainable development collaboratively.

Recognizing the importance of biodiversity protection in achieving global sustainability, CTCI launches the"Nature Vitality with Green Water"biodiversity project by drawing on its extensive experience in the water resources sector combined with the biodiversity awareness. This initiative prioritizes ecological protection by incorporating biodiversity concerns into engineering, procurement, and construction phases at global operational sites, with the goal of achieving No Net Loss (NNL) of nature and biodiversity by 2030 and Net Positive Impact (NPI) as well as Zero Deforestation by 2050. In addition, CTCI engages in external advocacy efforts, signing Business for Nature Call to Action and becoming one of the pioneering enterprises to participate in the Taskforce on Nature-related Financial Disclosures (TNFD), demonstrating CTCI's commitment to ecosystem and biodiversity conservation through multifaceted actions.

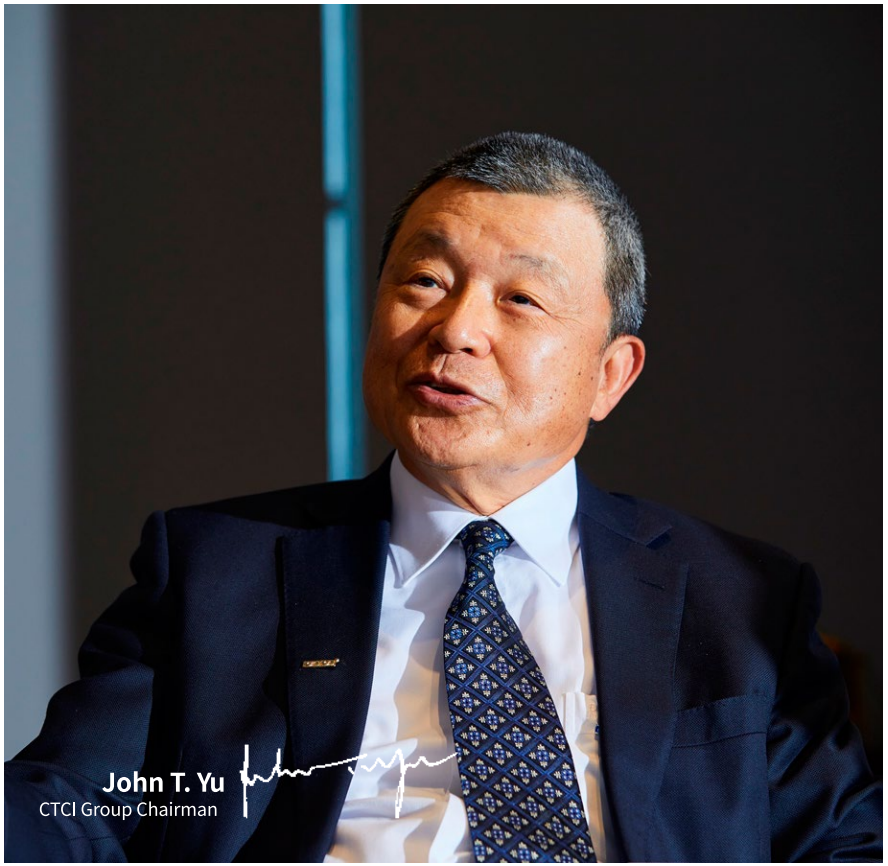
Cultivating Global Talent with Diversity, Equity and Inclusion (DEI)

In terms of social engagement (S), CTCI has implemented a comprehensive human rights policy, resulting in a workplace environment that values merit-based hiring, respects diversity, demonstrates inclusiveness, and promotes sharing and international perspectives. Initiatives include maternal health seminars, subsidizing over 20 different societies, and hosting multicultural events. CTCI aims to foster a positive corporate culture by implementing Diversity, Equity, and Inclusion (DEI) workplace policies. In addition, CTCI is dedicated to talent development, particularly the promotion of engineering education globally. To that end, CTCI established a digital learning platform “CTCI University”, setting the industry standard for talent training. CTCI University also provides “CTCI Learning” that allows the public to access a selection of CTCI University courses for free.

In addition, founded in 2015, CTCI Education Foundation focuses on promoting sustainable engineering construction and education and assisting the nation in moving towards sustainable development. Over the years, CTCI Education Foundation has co-organized forums, workshops, scholarship programs and other educational promotion activities to cultivate sustainable and innovative talents and reward sustainable and forward-looking research. In 2023, a total of 19 projects and 151 events were held, attracting over 10,000 people to attend. The results of CTCI Education Foundation’s long-term efforts have been recognized by the “United Nations Framework Convention on Climate Change” (UNFCCC). In 2022, CTCI Education Foundation became the 11th non-governmental organization (NGO) observer in Taiwan, acting as a voice for Taiwan in the world. In 2023, CTCI was invited to participate in the 28th Conference of the Parties (COP28) along with CTCI Education foundation. CTCI’s Chief Sustainability Officer served as a representative of Taiwanese enterprises at “Taiwan Green Economy Development Experience” forum hosted by the Ministry of Economic Affairs, sharing “CTCI Group's Path to Sustainability and Net Zero” with the world.

Conclusion

Since its establishment more than 40 years ago, CTCI has always been committed to giving full play to the influence of engineering. In the face of the challenge of climate change, CTCI people around the world have been committed to “green engineering” that takes into account both the economy and the environment, and work with the industry to build an eco-friendly environment, dedicated to realizing the ESG vision as a Guardian of Sustainable Earth.



Affirmations and Award

Member of
Dow Jones Sustainability Indices
Powered by the S&P Global CSA

Dow Jones Sustainability Emerging Markets Index for 9 straight years
The highest score in the DJSI global construction & engineering industry for 3 straight years

Continuously ranked Top 1% globally in the S&P Global Sustainability Yearbook

ENR
Engineering News-Record

ENR's Top 100 International Engineering Companies

Remains top contractor in CommonWealth Magazine's Top 2,000 Enterprises Survey

Center for Research in International Finance- top 100 Business Groups in Taiwan

CDP
DISCLOSURE INSIGHT ACTION

A-(Leadership rating) for climate change and supplier engagement.

MSCI

MSCI (Morgan Stanley Capital International, MSCI) ESG Rating - BBB
Selected as a component of the Emerging Markets Small-Cap Index

Ranked in the top 5% of corporate governance evaluations by Taiwan Stock Exchange for 8 times

United Nations
Framework Convention on Climate Change

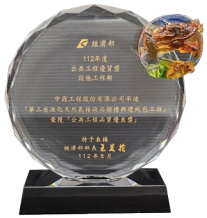
CTCI Education Foundation became an admitted non-governmental organization (NGO) observer of the United Nations Framework Convention on Climate Change (UNFCCC),

National Sustainable Development Awards by National Council for Sustainable development

Industrial Development Administration of the Ministry of Economic Affairs - Best Taiwan Global Brands

GCSA Global Corporate Sustainability Award - Best Practice in the World Market Award for Outstanding Achievement

TCSA - 7 straight years in Top 10 Domestic Corporate Sustainability Model Award

 TCSA - Corporate Sustainability Report - Platinum Award	 TCSA - Corporate Sustainability Individual Performance - Climate Leadership Award, Circular Economy Leadership Award, Sustainable Supply Chain Leadership Award, Growth through Innovation Leadership Award, and Transparency and Integrity Leadership Award	 Top prize for ESG Award under the Service Industry category by Global Views Monthly for 3 straight years	 "Global Views Monthly" - ESG Corporate Sustainability Award Outstanding Program: Role Model Awards in Talent Development and Low-Carbon Operation Category	 Excellence in Corporate Social Responsibility Award by CommonWealth Magazine for 16 straight years
 CommonWealth Education Media and Publishing - Parenting Friendly Workplace Award	 Business Weekly - Top 100 Carbon Competitiveness	 "Green Level" Net Zero Label from Taiwan Alliance for Net Zero Emission	 SGS-ISO Plus Awards 2023 - Risk Management Quality Model Award	 SGS - ESG Awards Talent Development Award
 Occupational Safety and Health Administration - Top 10% of Outstanding Companies in the 2023 “Active Evaluation of Corporate Sustainability Report Disclosure of Occupational Health and Safety Indicators"	 "Digital Transformation Excellence Award" at Harvard Business Review (HBR) Digital Transformation Breakthrough Award	 Public Construction Commission, Executive Yuan - Public Construction Gold Quality Award: Excellence Level Award in both Facility Design and Constructor Categories	 Ministry of Economic Affairs (MOEA) - Public Construction Quality Award: Facility Engineering Category	 Ministry of Finance - Golden Thumb Award of Private Participation in Public Construction

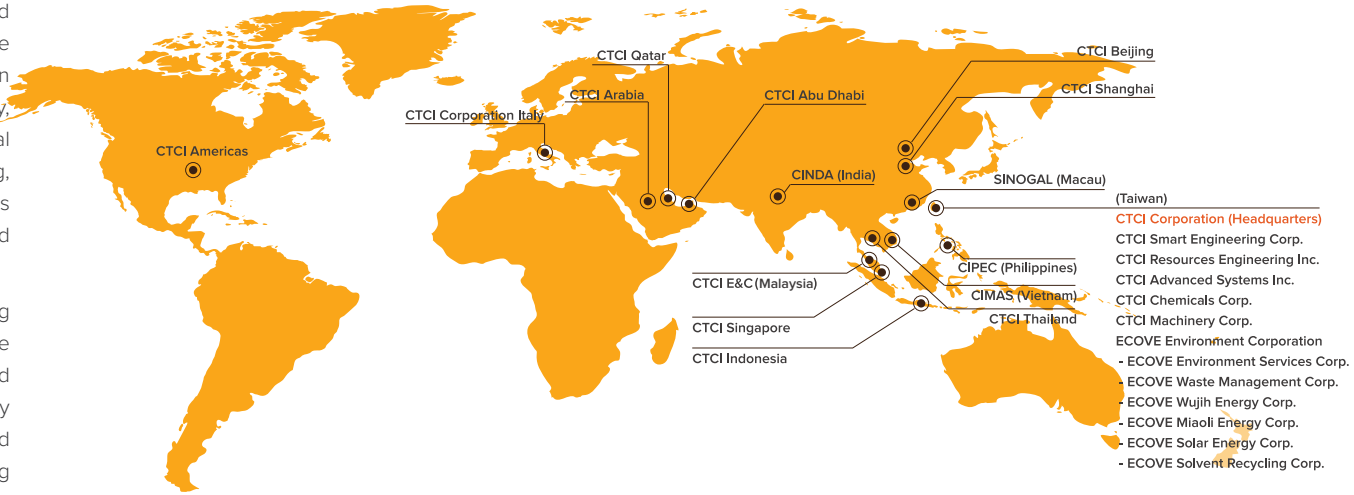
About CTCI

Group Operations

CTCI Corporation (hereinafter referred to as CTCI) is an international EPC (Engineering, Procurement, and Construction) contractor committed to providing the most reliable engineering services worldwide. Since its establishment in 1979, the Company has continuously grown as a pioneer in Taiwan's refining and petrochemical industry, actively entering international markets, and providing international EPC services in various fields such as environment, refining, petrochemical, power, transportation, and high-tech, as well as subsequent investment and development (BOT), operation, and management.

Adhering to the spirit of constant innovation and uncompromising commitment to quality, CTCI embraces the vision of becoming "the most reliable global engineering services team" and has completed numerous challenging projects around the world. The company has become the designated partner for well-known domestic and international clients, with engineering achievements spanning across Asia, the Middle East, and the Americas.

With over 40 years of engineering experience and a wealth of international engineering projects management capabilities, CTCI has raked in NTD$8 billion of paid-in capital and NTD$103.5 billion of combined revenue in 2023.



10+ Territories/countries around the world

40+ years Engineering experience

About **50** Affiliated companies

NTD$ **8** billion Paid-in capital

About **8,100** Employees

CTCI, rooted in Taiwan and expanding internationally, has extensive experience and outstanding achievements in various regions such as the Middle East, Mainland China, the United States, and Southeast Asia. This has made the company a sought-after partner for international clients and renowned engineering firms. Since 2015, CTCI has been selected as a constituent of the Dow Jones Sustainability Indices (DJSI) for nine consecutive years, being the first and only enterprise in the engineering industry category from Taiwan to achieve this honor.

Facing new challenges and trends, CTCI continues to evolve, dedicating itself to building its proprietary "iEPC (intelligent EPC)" smart EPC platform and expanding research and development of Digital Twin technology. At the same time, the Company established an intelligent management (iManagement) platform. It hopes to leverage these digital innovation technologies to make the execution and logistical management of engineering projects faster, more accurate and more competitive, significantly enhancing the organization's capabilities.

Moreover, to differentiate itself from competitors, CTCI continues to develop unique selling points (USP) by establishing a positive word-of-mouth reputation in the industry for its speed, quality, work safety, efficiency, and intellectual property protection. The company is dedicated to deepening its presence in both domestic and international markets, actively expanding its business scope, and striving towards its vision of becoming "the most reliable global engineering services team."

In response to the trends and challenges of ESG sustainability and net zero, CTCI prides itself as "a guardian of sustainable Earth", continuing to develop "green engineering" that is closely related to planet sustainability, and actively leading global partners to build a low-carbon supply chain to make concrete contributions to the sustainable development of the planet.

CTCI Corporation

Date of Establishment	April 6, 1979
Address of Headquarters	No. 89, Sec. 6, Zhongshan N. Rd., Shilin Dist., Taipei City 111, Taiwan (R.O.C.)
Official Website	https://www.ctci.com/
Stock Code (TWSE)	9933
Paid-in Capital	NT $ 8.0 billion
Consolidated Sales Revenue in 2023	NT $ 103.5 billion
2023 Total Group Contract Amount	NT $ 111.8 billion
Total Number of Group Employees at the End of 2023	About 8,100*
Number of Affiliated Companies	About 50
The Top 225 International Design Firms	Ranked 76th
Top 250 Global Contractors	Ranked 129th
Top 250 International Contractors	Ranked 55th
Top 10 Contractors in Manufacturing	Ranked 9th

*For the number and distribution of CTCI employees, please refer to Talent Recruitment and Retention

Core Business and Target Market

Possessing rich experience in global turnkey project management and tangible achievements, CTCI is able to satisfy clients' customized demands. With iEPC being its development guideline and goal, CTCI is dedicated to pursuing excellence and continuing to improve the technology to deliver intelligent solutions that boost work efficiency, improve design quality, and minimize time and costs, ensuring a "one-stop" engineering service that incorporates engineering, procurement, and construction. CTCI's "Most Reliable" engineering quality has been highly recognized by clients.

Business Areas and Professional Services

Oil refining

Provide a full range ofengineering services from front-end design to construction and commissioning of the refinery

Professional services

- Early stage planning
- Feasibility study
- Basic design
- Front-end engineering design
- Detailed engineering design
- Procurement
- Construction
- Commissioning
- Reconstruction
- Expansion

Petrochemicals

Specializing in the management and execution of large-scale turnkey engineering projects

Professional service

- Early stage planning
- Feasibility study
- Basic design
- Front-end engineering design
- Detailed engineering design
- Procurement
- Construction
- Commissioning
- Reconstruction
- Expansion

Environment

Possess technical expertise in the field of environmental engineering to mitigate environmental impacts caused by global industrial development

Professional services

- Feasibility study
- Environmental Impact Assessment
- Design, rocurement build and construction
- Operation and project management consulting services
- Expansion and renewal of existing treatment plant

General industry

Expert in the design and construction of plant and facilities, with comprehensive professional services for the implementation of turnkey projects

Professional services

- Construction of steel and non-ferrous metal plants
- Industrial automation and control system integration
- Intelligent solutions for new plants and existing plants
- Ducted electromechanical system and air conditioning system

Electricity

Provide comprehensive turnkey services to help build a complete and successful power plant

Professional services

- Feasibility study of power plant
- Power plant engineering design
- Power plant procurement services and construction management
- Integrated turnkey service for power plant design, procurement construction and commissioning

Transportation

CTCI has dedicated to the transportation turnkey engineering market for a long time, providing mechanical and electrical system design and construction services

Professional services

- Power supply system
- Railway construction
- Railway communicat-ion system
- Supervisory control and data acquisition system (SCADA)
- Airport Baggage Automatic Sorting System
- Airport electromech-anical system

High-tech facilities

Provide professional high-tech plant front-end engineering design and factory construction services

Professional services

- Technology plant
- Feasibility study of new construction/ expansion projects
- New/expanded construction
- Front-end engineering design
- Procurement services and construction management
- Design, procurement construction and commissioning integrated turnkey service
- Design, integration, implementation, and installation of cleanroom systems

Liquefied natural gas terminal

Provide global customers in the field of liquefied natural gas with a full range of engineering services such as design, procurement, construction, and commissioning

Professional services

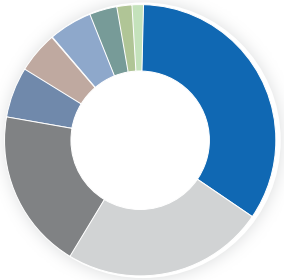
- Early stage planning
- Feasibility study
- Basic design
- Front-end engineering design
- Detailed engineering design
- Procurement
- Construction
- Commissioning
- Reconstruction
- Expansion

CTCI's mission is "to provide sustainable,high-quality engineering services, and to meet the demands of customers of the times." CTCI continued to acquire major projects from domestic and foreign customers every year. This is the best recognition for CTCI. In the future, CTCI will be committed to becoming "the Gatekeeper for a Sustainable Earth" by providing diverse services of uttermost quality by our most competitive team, and striving to achieve our vision of becoming "The Most Reliable Global Engineering Services Provider."

Sales Analysis of CTCI's Main Services in 2023

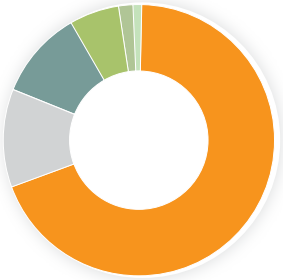
Revenue 103.5 Billion

- **Taiwan 55%**
- USA 24%
- Mainland China 9%
- Middle East 5%
- Southeast Asia 4%
- India 3%

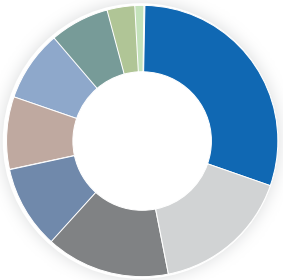


- **Hydrocarbon 30%**
- **Advanced Technology 25%**
- Power 22%
- Incinerator 7%
- Gas 5%
- General Industry 5%
- Environment 3%
- Others 2%
- Transportation 1%

Backlog 346.9 Billion



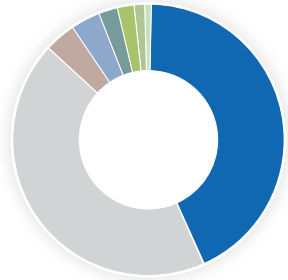
- **Taiwan 72%**
- India 11%
- Middle East 9%
- Mainland China 5%
- USA 2%
- Southeast Asia 1%



- **Hydrocarbon 29%**
- Environment 17%
- **Advanced Technology 16%**
- Power 10%
- Incinerator 9%
- Gas 8%
- Transportation 7%
- Others 3%
- General Industry 1%

New Contracts 111.8 Billion

- **Taiwan 41%**
- India 34%
- USA 14%
- Mainland China 9%
- Middle East 1%
- Southeast Asia 1%



- **Hydrocarbon 44%**
- **Advanced Technology 43%**
- Environment 4%
- Incinerator 3%
- Power 2%
- Others 2%
- Gas 1%
- General Industry 1%

2023 CTCI Group Projects

	Taiwan	Southeast Asia	USA	India	Mainland China	Middle East	Others	Total
Number of Backlog of Contracts	515	60	32	23	146	11	12	799
Number of Completed Projects*	**46**	**10**	**1**	**1**	**11**	-	-	**69**

*Number of completed projects that we provided construction services in the current year

Financial Performance

Year	2023	2022	2021	2020	Unit	Note
Debt to assets ratio	79.41	76.67	76.48	73.11	%	
Return on total assets	2.44	2.91	2.36	1.42	%	
EPS (Earnings per share)	2.39	3.07	2.15	1.01	NT$	
Dividend distribution	2.06	1.91	2.30	2.00	NT$	
Total consolidated revenue	103,527,201	95,100,568	70,540,414	55,558,409	NT$ thousand	
Consolidated net income before tax	3,501,695	3,967,443	3,033,528	1,764,020	NT$ thousand	
Market capitalization	33,879,019	33,090,063	28,415,729	29,160,348	NT$ thousand	Calculated on a year-end share price basis
Individual income tax expense (Gains)	(321,032)	(113,817)	203,678	143,928	NT$ thousand	
Total Individual assets	64,329,678	55,319,542	55,536,683	47,789,384	NT$ thousand	
Individual capital	8,037,727	7,906,825	7,638,637	7,633,599	NT$ thousand	
Average operating revenue per employee	12,810	12,356	9,672	8,113	NT$ thousand	Year-end number of group employees
Total individual revenue	45,910,717	31,714,598	30,782,149	25,873,770	NT$ thousand	
Individual operating expenses	45,833,639	30,960,326	30,001,051	25,216,772	NT$ thousand	Operating costs+ Operating expenses
Individual retained earnings	6,208,499	5,862,334	5,169,971	5,191,503	NT$ thousand	
Total individual salaries	3,932,165	3,493,794	3,096,662	2,878,712	NT$ thousand	
Total individual employee benefits	4,666,118	4,131,274	3,699,149	3,509,472	NT$ thousand	
Total individual pensions	161,124	135,393	122,993	134,169	NT$ thousand	

Industry Development and Strategy

According to the International Monetary Fund (IMF) World Economic Outlook update released in January 2024, the global economy has significantly increased the likelihood of a soft-landing with slowing inflation and stabilizing growth, and the global economic growth rate has been revised upward to 3.1% in 2024, which is 0.2 percentage points higher than that of last October's report, mainly because the U.S. economy is still more resilient than expected, and China is expected to launch a fiscal stimulus package.

Global economic growth is expected to be 3.1% in 2024 and 2023, and 3.2% in 2025. The economic growth rate of developed countries is estimated to be 1.5% in 2024, while that of emerging markets and developing countries is 4.1%. For individual economies, the U.S. is expected to grow at a rate of 2.1% in 2024 and 1.7% in 2025, while that of the Eurozone is expected to grow at a rate of 0.9% in 2024 and 1.7% in 2025. In Asia, Japan is expected to grow at 0.9% and 0.8% in 2024 and 2025, while China is expected to grow at 4.6% and 4.1%.

Looking ahead to 2024, the global economic outlook will remain complex and uncertain due to factors such as rising inflation and interest rates, climate change, national elections and technological innovations. However, after years of turbulence, governments and corporations around the world have recognized protectionism and trade fragmentation as the new normal and have demonstrated their resilience in responding to the challenges. Due to the nature of the industry, the engineering consulting services industry to which the Company belongs is closely related to the overall economic conditions of the target markets, and most of the business opportunities come from local government investment. Therefore, the economic growth of each target market will reflect the number of business opportunities in that market.

In order to comply with the sustainable development goals of the United Nations, follow the international sustainable finance initiative and the relevant policies of the competent authority on "Green Banking", CTCI continues to encourage its subsidiaries to carry out ESG related investment, credit, guarantee and other green finance products, acting as a bridge between environmental protection and economic growth, so as to have a positive influence on sustainable development.

In 2023, the Group will continue to seek green credit lines from financial institutions. In addition to the new NT$1.8 billion green guarantee line and NT$14.11 million green guarantee letter for wind power, its subsidiaries have also obtained NT$800 million in solar energy project financing and credit line guarantees, along with NT$127 million of wind-power guarantees, and a financing line of NT$300 million for a water reclamation plant to support the government's "Green Finance Action Plan 3.0".

As sustainable investment rise as an internatioanal trend in recent years, CTCI continues to establish the investment framework in accordance with the 17 Sustainable Development Goals (SDGs) of the United Nations, combining the Company's sustainable operation policy to connect with the international practice. As part of the engineering consultancy and service industry, CTCI has not only acted as a bridge between the financial industry, environmental protection and economic growth in the past, looking forward to the future, under the mission of "a guardian of sustainable earth", CTCI will continue to promote "ESG for all" and work with clients and supply chain partners to implement the value of "Net Zero EPC" in engineering services, creating "Green Engineering" projects worldwide that balance economic and environmental benefits. This will expand the impact of sustainable engineering and move closer to the 2050 Net Zero vision.

Short & Long Term Development Plans

Cultivating Global Landscape with Enhancement of Cross-Border Management Capability

The Company has been well-positioned in the international EPC markets such as Middle East, Southeast Asia, and in recent years has successfully crossed over to the United States and will further expand to Mexico and actively explore emerging countries such as India. Having such active global development in the future, the Company will endeavor to facilitate comprehensive cross-border management synergy by means of a barrier-free platform in language, culture, talents and internal operations. Importantly, a global mindset has to be implanted in-depth to all of employees around the world.

Net Zero Transformation

With the ESG trend, clean energy and renewable energy are the mainstay of global energy. As the country continues to expand its natural gas imports, build natural gas storage tanks and receiving terminals, and build natural gas power plants, the Company has grasped potential business opportunities. Meanwhile, the government continues to develop renewable energy, in addition to continuing to lay the groundwork for the solar energy market and consolidating the niche market for offshore wind turbine subsea piles and adapter ring manufacturing. In view of the old and aging of waste incineration power plants in Taiwan, the Company will promote the business of waste incineration power plants to replace old ones with new ones by means of highly efficient and environmentally friendly incineration systems, making concrete contributions to renewable energy and environmental protection.

Circular Economy

With the continuous and vigorous development of the high-tech and semiconductor industries, the demand for water consumption has greatly increased. It is expected that the industry will maintain the demand for process reclaimed water plants. CTCI will learn and apply the experience of reclaimed water plants and continue to expand the business related to reclaimed water and seawater desalination. The concept of zero waste is gradually being promoted in various industries, and many science parks are actively building zero waste centers, and CTCI will also actively pursue related business opportunities.

Development of high-tech industries

In addition to the semiconductor, memory, and panel industries, which have been steadily growing in Taiwan, CTCI will continue to explore opportunities for the construction of new plants in the data center, battery, and biomedical industries. With the development of AI and 5G communication, the demand for high-speed computing continues to increase, and the perfect infrastructure, critical geographic location and emphasis on information security have attracted the attention of data center owners around the world to invest in Taiwan; In addition, the urgent demand for electric vehicles and energy storage technology under the goal of sustainable net-zero, many domestic production leaders are aware of the trend and are investing in the development of battery industry. With over 40 years of experience in large scale project management, international safety standards and the integration of the Group's one-stop solutions, CTCI is extending its existing engineering capabilities and actively expanding into the high-tech industry.

Mastering ESG opportunities, deepening green engineering, and practicing sustainability with our core business

CTCI Group has not only internalized ESG promotion into its corporate DNA, but also strives to link its engineering industry with ESG and actively expand the ESG effect.

Expanded participation in green, low-carbon, environmental projects

Extending the global net-zero trend and the huge business opportunities arising from Taiwan's energy transformation policy, CTCI Group has a well-developed presence in the field of green and low-carbon projects, such as natural gas receiving stations, natural gas power plants, incineration power generation and water resources, etc., and is already a leading company in terms of market share in Taiwan. These projects represent CTCI Group's core competency in keeping pace with the times and customers' needs, and its foresight in closely observing and studying new technologies related to green energy, low-carbon and environmental protection, such as hydrogen energy and carbon capture, in the hope of taking the lead in the next battlefield.

Enhance green investment to build long-term stable profit part

CTCI Group has been actively involved in investment and operation from plant construction to upstream and downstream expansion, providing total solutions for the complete lifecycle of investment/development/construction/operation. In addition to the technological advantage in plant construction, sufficient capital is also an excellent condition for the Group to compete for the relevant work, with a view to building a diversified profit portfolio through a stable and long term operation and business operation, which will make the Group's overall revenue portfolio more stable.

Development of green engineering technologies

CTCI designs and builds plants for owners while incorporating "green technology" into the entire life cycle of the project, striving to reduce the environmental impact and optimize technology to reduce the carbon footprint of the plant construction process. Through the application of green technologies, CTCI's projects for clients from 2021 to 2023 will save electricity alone, which is equivalent to a reduction of CO2 emissions of 18.9 million metric tons (approximately the amount of carbon adsorbed by the 48,810 Daan Forest Parks in a year), 760 million kWh of electricity (equivalent to the annual electricity consumption of 205,000 households), and 150 million tons of water (equivalent to the amount of water used by the city of Taipei in 182 days), as well as save waste emissions and recycling. These excellent results not only save costs, but also give us an advantage over our competitors and create a win-win situation with our owners in ESG promotion.

Technology and service upgrade

In recent years, the international political and economic situation has been changing rapidly, with geopolitical tensions and the outbreak of the U.S.- China confrontation, coupled with the outbreak of the Ukrainian-Russian war, exacerbating this trend. The systemic risk of supply chain reengineering, through digital and AI intelligence, can shorten the process time and stabilize quality management, effectively solving the challenge of limited resources to meet the rapidly growing demand for resources.

CTCI has innovated and developed iEPC technology, from traditional EPC to iEPC, constructing big data analysis and prediction capability, and moving towards intelligent turnkey; then from iEPC intelligent turnkey to Digital Twins technology, moving engineering execution from intelligence to the goal of virtual-real integration, and continues to develop iManagement to promote intelligent logistics. With the application of RPA process robots and physical robots, we expect to upgrade engineering services to an intelligent era. In addition, we will continue to develop new technologies, such as modular technology, to create a competitive niche in the market with innovative technologies and services.

CH1

Sustainable Management

CTCI has long held true to its sustainability commitment. The Group has set up its long-term goals for sustainable development in 2030 and has reviewed its progress year by year. Meanwhile, CTCI's three core competencies of "green engineering," "smart plant" and "circular economy" have echoed SDGs (Sustainable Development Goals). Through "Total Participation in ESG Implementation," the Company continues to enroot sustainability into its corporate DNA, exerting deeper influence and delivering greater value. As for Net Zero climate action, CTCI took the lead in joining Taiwan Net Zero emission initiative as an engineering industry leader and a founding member, promising 100% net zero emissions of the headquarters as well as offices worldwide by 2030, 100% net zero emissions of the headquarters, offices as well as production sites worldwide by 2050. Besides, CTCI is a standing member of Taiwan Alliance for Net Zero Emission, helping to achieve Taiwan Net Zero emission goals and drive Net Zero progress in supply chain. The reduction target we set has been approved by SBTi, and we will follow the 1.5°C carbon reduction scenario to achieve the 2050 net zero target.

NEW

In 2023, Board approved to amend the "Regulations Governing the board Performance Evaluation" to add the aspect of "participation in sustainable management (ESG)" to strengthen the board of directors' supervisory and participation role in corporate sustainability promotion.

1st Place in the World

Continuously ranked in the top 1% globally in the S&P Global Sustainability Yearbook.

For 9 Straight Years

Listed in DJSI Emerging Markets

Retained the highest score in the DJSI global construction & engineering industry

29 Goals

Long-term Sustainability Goals

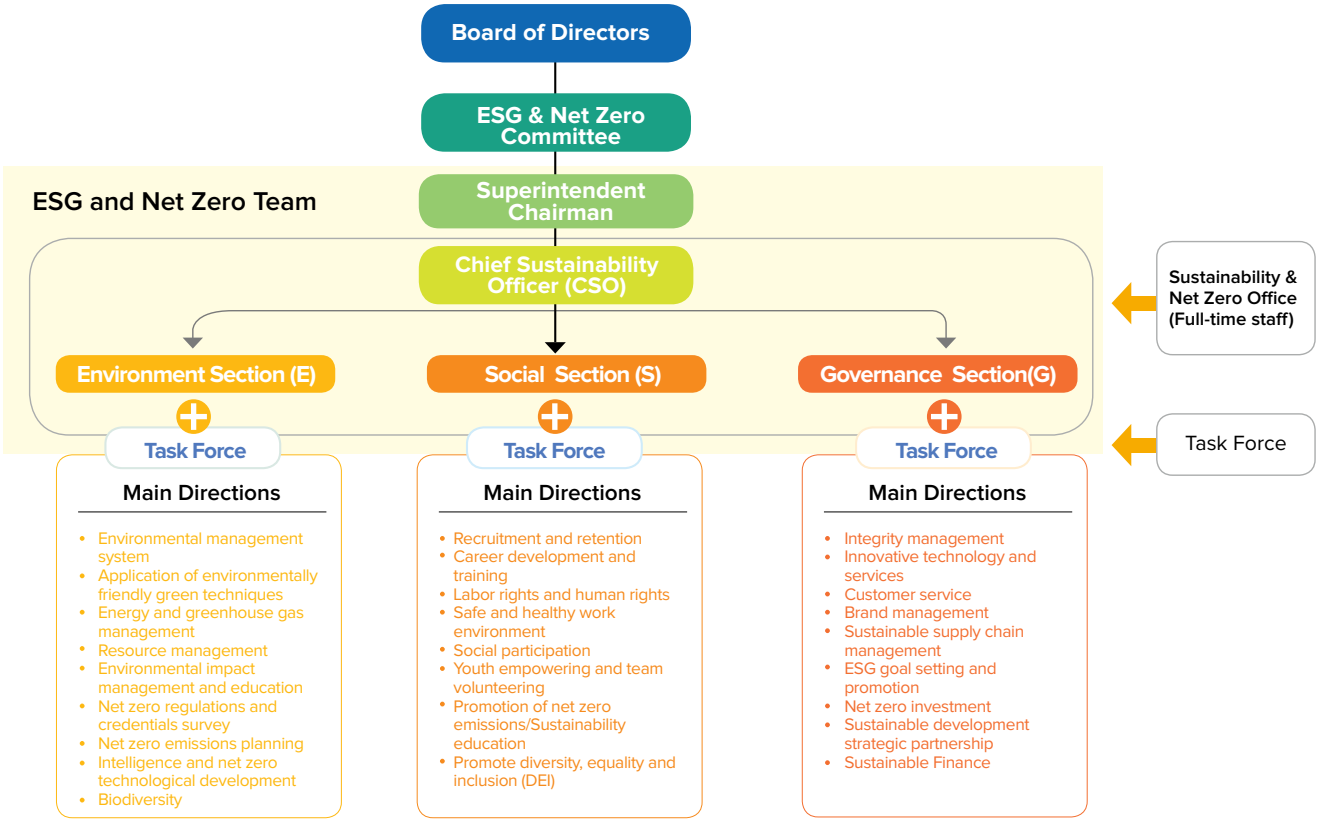
Policy and Organization

Sustainable development is ingrained in CTCI's DNA. The Group has established a CSR Committee as early as 2008 and has defined its sustainable development policies, which are dedicated to strengthen the organizational structure, realize the vision of green engineering, and assume our duties as a corporate citizen. To enhance the level of sustainable governance, a functional committee called the "Sustainable Development Committee" was established under the Board of Directors in 2020. To further demonstrate CTCI's ambition for sustainability and net zero, it was renamed the "ESG & Net Zero Committee" in 2021. This committee is responsible for formulating sustainable and net zero policies, setting goals, strategies, and execution plans, as well as reviewing, monitoring, and revising the effectiveness of the implementation, and regularly reporting to the Board of Directors. The committee meets at least once a year and may convene meetings as needed. The regular meeting for 2023 was held on December 14th, with Independent Director Chien-Chung Li as the convener and Directors Yancey Hai and Michael Yang as commissioner. The Sustainability & Net Zero Office presented an ESG progress report. Key agenda items for the year included: (1) identify management methods for material issues and develop medium-term to long-term response action plans; (2) formulating sustainable goals and policies, such as disclosing the schedule and progress of greenhouse gas inventory, reduction pathway reports, TCFD climate-related risk and opportunity assessments, and TNFD natural-related impact and risk assessments; and (3) supervise the implementation outcome and evaluation of sustainable operations, such as stakeholder communication, green engineering, and sustainable supply chain management.

Powers and functions of the ESG & Net Zero Committee

- The formulation of the company's policy on sustainable and net zero emission development.
- The company's sustainable development includes sustainable governance, integrity management, environmental and social objectives, and strategy and implementation plan development.
- Review, track and revise the implementation and effectiveness of the company's sustainable development & net zero emission, and report to the Board of Directors on a regular basis.
- Address the concerns of various stakeholders and oversee the communication plans. Stakeholders include inventors, customers, suppliers, employees, the government, non-profit organizations, communities, and the media.

ESG Task Force



At the Group level, a dedicated Chief Sustainability Officer and sustainable development unit—the Sustainability and Net Zero Office, supervised by the chairman—are established. The Sustainability and Net Zero Office is responsible for formulating the Group's sustainability and net-zero strategies, action plans, and implementation initiatives. It collaborates with ESG & Net Zero task force from business units to jointly advance efforts in environmental protection, social participation, and corporate governance. The office oversees five key areas of work and responsibilities, including policies, systems, engagement, disclosure, and progress tracking. These are regularly monitored and assessed for effectiveness. The Chief Sustainability Officer reports the outcomes to the Group chairman at the monthly Group Sustainability and Net Zero meeting to ensure continuous tracking and improvement.

The sustainability superintendent (Chairman) and Chief Sustainability Officer present the overall sustainable development strategy and implementation outcomes to the Board of Directors at least once a year. In 2023, there were six Board of Directors meetings, four of which included ESG topics on the agenda, and the total number of reports to the Board of Directors was made. Seven key sustainability issues were reported to the Bored, including greenhouse gas inventory, Supply Chain Sustainability Management, Climate-Related Financial Disclosures (TCFD), health and safety environment, risk management (including information security), revision to sustainability-related management practices, and sustainability report outcomes. After the briefing sessions, the Board reviews the execution progress, provides necessary guidance as needed, and urges adjustments to ensure alignment with the Company's sustainable development strategy.

2023 Board of Directors' Supervision on Key Sustainability Issues and Promotion Outcomes

Material Sustainability Issues	Description	Time stamp
Greenhouse Gas Inventory	• Report the schedule, the results of the inventory of the Group, and obtain external verification	3/7、5/5
Supply Chain Sustainability Management	• Report on the carbon management capacity building plans of the Group's suppliers	3/7、11/1
Climate-Related Financial Disclosures (TCFD) Implementation Report	• Climate Risks and Opportunities Assessment Impact Outcomes and Management Practices in the Reporting Year	5/5
Health, Safety and Environmental work Report	• Report on safety, health, and environment performance, and review and continuously improve management practices	3/7、5/5
Risk management (including information security)	• Report on the status of risk management	11/1
Amendment to the Sustainability Management Guidelines	• Addition of " Sustainability Report Compiling and Verification Regulations " • Amend the "Regulations Governing the board Performance Evaluation" to add the aspect of "participation in sustainable operation (ESG)" to strengthen the role of the Board of Directors in overseeing and participating in the promotion of corporate sustainability.	5/5、12/15
Corporate Sustainability (ESG) Report	• ESG executionprogress and outcomesin the reporting year (including the effectiveness of stakeholder communication and identification of material issues)	12/15

CTCI ESG Policy Statement

CTCI believes that economic growth should go hand in hand with environmental sustainability and social inclusivity. We have outlined a vision "Guarding the Earth with Constant Innovation in Green Engineering" and integrated the concept of sustainability into our corporate culture. Our goal is to "make ESG the core competitiveness and DNA of the company." We achieve this through a strategy "align CTCI's core competencies with the realization of UN's SDGs and materiality issues." CTCI promotes ESG through three aspects, which are"Operations and Governance," "Social Participation," and "Environmental Protection," committing to strengthen organizational structure, assume our duties as a corporate citizen, and realize the vision of green engineering.

Strengthening Organizational Structure

Steady growth and sustainable development are the basic requirements for performing ESG. Without them, no enterprise is capable of promoting social welfare and environmental protection. For this reason, besides legal compliance, we will continue to develop an effective internal control system, maintain information security, implement risk management, ensure accessibility and transparency in information disclosure, and uphold business self-discipline. At the same time, CTCI provides employees with steady career development, shareholders with stable profits, and clients with satisfactory project quality.

Assuming Our Duties as a Corporate Citizen

Cultivating engineering talents and enhance engineering quality has been the corporate mission of CTCI since our inception, and it is the most straightforward method to requite society. CTCI complies with relevant labor laws and regulations, commits to uphold and respect internationally recognized principle of basic labor rights protection, equal rights and employee basic rights protection. CTCI also provides employees diverse communication channels and safe and health work environment, achieving the vision of Diversity, Equality and Inclusion (DEI). Also, we maintain positive neighborhood relations with citizens in local communities and do our best to care for and to advocate for social welfare.

Realizing the Vision of Green Engineering

With a focus on sustainable net-zero goals, CTCI has been committed to long-term development of various green engineering technologies. From the perspective of the entire lifecycle, including design, procurement, construction, commissioning, operation, and decommissioning, CTCI provides economically viable environmentally friendly and energy-saving solutions to clients. This approach aims to reduce pollution, minimize risks to human health and environmental degradation, and enhances the green competitiveness of the industry, and achieves a win-win situation for CTCI, business partners, stakeholders, and the social environment. CTCI will do its utmost to maintain a sustainable ecological environment and biodiversity.

CTCI Sustainability Management Framework

Based on the published CTCI Sustainable Development Best Practices, CTCI has formulated three major policies to promote corporate sustainability, integrating them with the company's vision, mission, and culture. It integrates six strategies and the diversified operational models of three business units to create sustainable shared value for stakeholders and CTCI. This core framework and belief on corporate sustainability allows CTCI to create "The most reliable global engineering services provider", "A guardian of sustainable earth", "The best employer that builds a happy workplace", and "A corporate citizen willing to commit."

CTCI Sustainable Development Best Practice Principles

Vision	Policies	Strategies	Commercial Operation	Stakeholders	Values
The most reliable global engineering services provider	Strengthening Organizational Structure	Building safer, healthier workplaces & environments	Intelligent EPC	Shareholders/ Investors	The most reliable global engineering services provider
Mission To satisfy our customers with optimized engineering services	Realizing the Vision of Green Engineering	Trusting each other	Green engineering	Suppliers/ Contractors/ Partners (co-contractors)	A guardian of sustainable earth
Culture Professionalism, Integrity, Teamwork, Innovation	Assuming Our Duties as a Corporate Citizen	Smarter engineering	Circular economy	Customers	The best employer that builds a happy workplace
		Outstanding quality		Employees	
		Advanced technologies		Media	A corporate citizen willing to commit
		Globally deploying and responding in real-time	Smart plants	Community/ Government/ Experts and Scholars	

Engineering Design ⇨ Procurement ⇨ Manufacturing ⇨ Construction ⇨ Commissioning ⇨ Operation Management

Sustainable Value Management

Through the investment of six major resources (finance, manufacturing, intelligence, manpower, nature, and society), CTCI not only creates maximum operating profit and shareholder value, but also drives the sustainable management mechanism within the organization. The Group pursues the spirit of continuous improvement, which allows this company maximize output value and benefits, and effectively create tangible economic, environmental, and social values. In terms of sustainable management promotion within the organization, CTCI has identified seven organizational capabilities as basis for improving the organization's triple bottom lines (sustainable performance), which are: corporate ethics, procurement management, human resources management, innovative engineering management, customer relationship management, health, safety, and environment (HSE) management, and communication with stakeholders. CTCI creates sustainable value for both the industry and the public, seeks to expand the level of its influence, so that the society and enterprises can jointly move towards a brighter and more sustainable future.

Input

Finance
Maintain financial transparency and outstanding business objectives through robust finance and management system

Manufacturing
Engineering life cycle incorporates a net-zero mindset, providing professional services that meet customer needs.

Intelligence
Continuously invest in engineering and green innovation research and development to strengthen the knowledge capital of engineering construction services.

Manpower
Seek international talents to enhance and cultivate the capabilities of engineering talents, establish a diverse, equitable, and inclusive (DEI) environment, and create a happy workplace.

Nature
Implement energy saving, carbon reduction, and circular economy practices, simultaneously considering biodiversity to enhance ecological benefits and reduce natural resource consumption.

Society
Combine core business and social participation to exert social influence and aim for social inclusion

Sustainable Value Management

Dimension	ESG Management capacities	Material issues	Stakeholders	Sustainable business goals
Governance	• Corporate ethics • Procurement management • Engineering innovation • Customer relationship • Intellectual Property Management • Net zero investment • Sustainable strategic partnership • Sustainable Finance	• Integrity management • Supply chain sustainability management • Customer service management • Innovative technology and services • Brand management	• Shareholders/ Investors • Suppliers/ Contractors/ Partners (co-contractors) • Customers • Employees • Media • Community/ Government/ Experts and Scholars	• Revenue growth • Customer loyalty • Cost effectiveness • Operational resilience • Best employer • Sustainable brand
Environ-mental	• Application of environmentally friendly technologies • Energy & resource and greenhouse gas management • Net zero emissions planning • Intelligence and net zero technological development • Biodiversity	• Climate strategy and net zero outcomes • Net Zero EPC and Green • Engineering		
Social	• Labor rights and human rights • HSE management • Promote diversity, equality and inclusion (DEI) • Youth empowerment and volunteer team services	• Employee recruitment and retention • Career development and training • Safe and healthy work environment • Social Influence Enhancement		

Engineering Design → Procurement → Manufacturing → Construction → Commissioning → Operation Management

Output

Inventor — After-tax profits
2023：NT$1,891,316,000
2022：NT$2,379,298,000
2021：NT$1,642,175,000

Supplier — Cost of Subcontracting and purchasing
2023：NT$37,330,634,000
2022：NT$24,516,625,000
2021：NT$24,174,702,000

Customer — Customer satisfaction
2023：8.20 points
2022：8.16 points
2021：8.17 points

Employee — Employee benefits
2023：NT$4,666,118,000
2022：NT$4,131,274,000
2021：NT$3,699,149,000

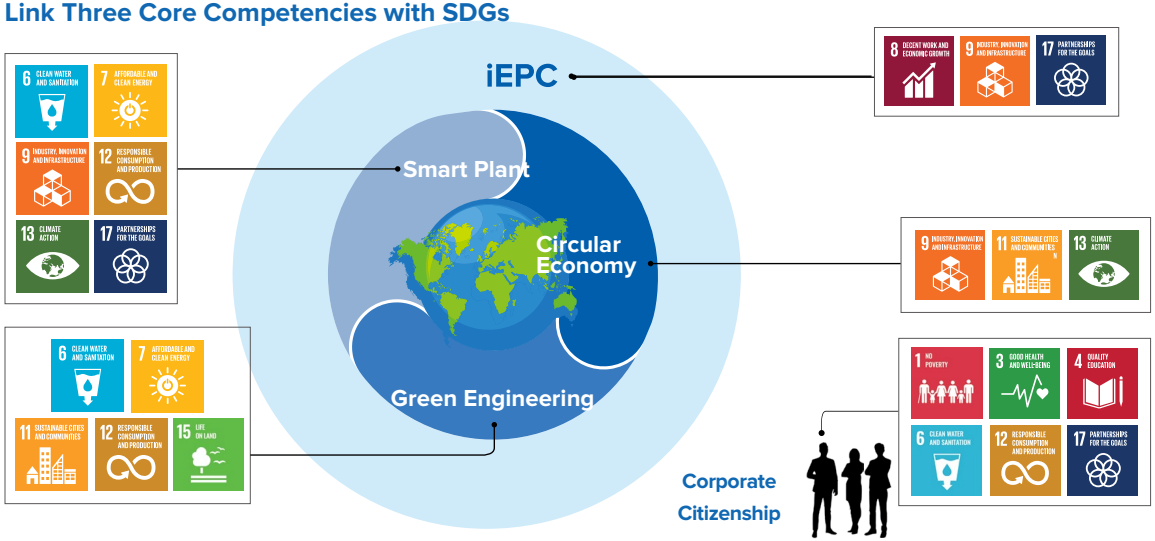
Government — Tax
2023：NT$(321,032,000)
2022：NT$(113,817,000)
2021：NT$203,678,000

Community — Donation
2023：37,478,886
2022：20,619,91
2021：21,200,390

CTCI SDGs Action

CTCI firmly believes that for a company to achieve sustainable development, it must start from and be closely integrated its core business. In response to the actions of the Sustainable Development Goals (SDGs), under the two major directivess issued by the Group's president—" promote sustainability among all employees, making every colleague realize that daily operations embody the essence of sustainability" and " intergrate the green engineering, circular economy, and smart plant of CTCI's three core businesses with intelligent EPC (iEPC) technology, closely linking them with the SDGs."—We continuously refine our sustainability efforts, making sustainability the core competitiveness and DNA of CTCI. In addition to our core business, we also actively exert in social influence by participating in various community construction, educational support, and environmental protection activities, giving back to society with concrete actions and intergrating social responsibility into our operational activities. CTCI will lead the way and become an outstanding "A Guardian of Sustainable Earth " on the path of sustainable development.

Link Three Core Competencies with SDGs



iEPC

SDG 8
Intelligent plant : promoting industrial upgrading. Introduce new technology on site to optimize the working environment and reduce industrial accident.

SDG 9
Introduce Industry 4.0 and AI: build core competitiveness

Smart Plant

SDG 9
Data technology introduced to achieve energy saving at factories and optimize production

SDG 11
Waste and emission reductions, creating environmentally friendly production

SDG 13
Establish energy efficiency evaluations to stabilize and reduce greenhouse gas emissions.

Circular Economy

SDG 6
Recycling and reusing water resources, producing recycled water through natural gravel purification methods and sewage treatment

SDG 7
Renewable energy: incineration and waste management, photovoltaic power generation, biogas power generation

SDG 11
Repair / update: maintenance and modification of incineration plants, electromechanical maintenance of airports and rail yards

SDG 12
Reuse waste solvents and bottom ash. Convert food waste into fertilizer and reuse other waste materials. Implement wastewater treatment.

SDG 15
The planning and operation of incinerator sites takes into account the concept of biodiversity and protection of natural habitats.

Green Engineering

SDG 6
Reuse recycled water to reduce water wastage

SDG 7
Recovery of thermal / cold energy in the manufacturing process to improve energy efficiency

SDG 9
Implement new technologies, upgrade infrastructure, and adopt clean and eco-friendly technologies and industrial processes.

SDG 12
Use recyclable or reusable materials, effectively manage resources and reduce consumption of raw materials

SDG 13
Consider climate change factors at the design stage to strengthen the ability to resist and adapt to climate disasters.

SDG 17
Join carbon reduction and net-zero associations, focus on hydrogen and energy storage, and strengthen net-zero partnerships with leading industries in Taiwan.

Corporate Citizenship

SDG 1
Patnering with the "Children Are Us Foundation" to provide support to public welfare organizations; partner of Carrefour Food Bank

SDG 3
Provide annual health checkup and flu vaccination services to take care of the health of employees. Regular health seminars are held to raise employees' health awareness.

SDG 4
Establish the CTCI Education Foundation to cultivate sustainability concepts and sustainable lifestyles through diverse educational activities targeting different audiences. Establish the CTCI University/CTCI Learning website to provide independent learning resources for colleagues/public.

SDG 4 SDG 6
Several reclaimed water plants have obtained certification as an environmental education facility. The importance of water resources is understood through environmental education.

SDG 12
Promote the Green New Life Movement, encouraging support for small farmers and fair trade through consumer choices.

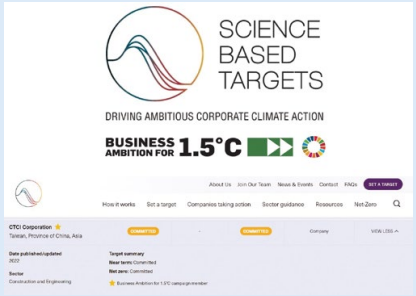
SDG 17
Participated in COP 28 and global sustainability awards to strengthen partnerships for sustainable development around the world.

Drive for Net Zero

CTCI prides itself on being the " Guardian of Earth's Sustainability. " Led by the Group president, the company's top executives have made a net-zero declaration, demonstrating the commitment to achieving net-zero emissions. We have also announced a net-zero commitment, with the net-zero reduction target set for January 2024 being approved by the Science Based Targets initiative (SBTi). This target aligns with the goal of limiting the average global temperature increase to 1.5°C set by the Paris Agreement. CTCI is the first engineering service company in Taiwan to pass this initiative and aims to achieve net-zero carbon emissions by 2050.

2021/10

CTCI promised to use a 1.5 °C target as the framework for setting a carbon reduction schedule towards net zero emission by 2050.



2022/5

CTCI joined Taiwan Alliance for Net Zero Emission. John T. Yu, CTCI Group Chairman, was elected as executive director and Michael Yang, CTCI Group Vice Chairman, was elected as director.

CTCI promised 100% net zero emissions of the headquarters as well as offices worldwide by 2030, 100% net zero emissions of the headquarters, offices as well as production sites worldwide by 2050.

2022/6

CTCI signed the Task Force on Climate Related Financial Disclosures (TCFD) to expression our support by identifying potential climate risks and opportunities for management to reduce risks and seize opportunities.

2022/10

CTCI held the "CTCI Group Net Zero Oath Ceremony" and "CTCI Leadership Forum on Net Zero and Sustainability", where senior executives of the group solemnly took the oath on behalf of all colleagues, demonstrating their determination to achieve their goals.

2022 "CTCI Group Net Zero Oath Ceremony" video

2024/1

CTCI's net-zero target, aligned with a 1.5°C scenario, has been approved by SBTi.

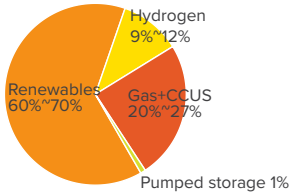
Total Participation in ESG to Practice Net Zero EPC

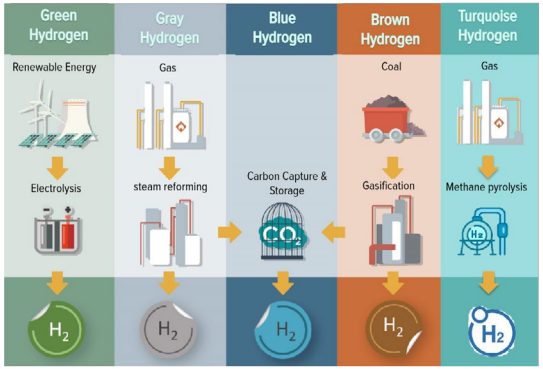
In order to continue to incorporate sustainable development into the competitiveness and DNA of the Group, we initiated the "All Staff ESG " program in 2018. This program incorporates ESG moments in even the smallest internal meetings to share the latest knowledge on sustainability, organizes various sustainability activities such as microfilm competitions, and holds monthly sustainability and net-zero improvement meetings for each business group to monitor the progress of the sustainability initiatives. These efforts demonstrate CTCI's determination and action to cultivate a deep-rooted corporate sustainability culture.

ESG Moment

The new star of zero-carbon energy: Hydrogen

National Development Council plans Taiwan's power generation structure in 2050：





2024 CTCI Group Sustainable Microfilm Event

To encourage all colleagues to unleash their creativity and integrate sustainability into daily life, the Group organized the inaugural "2023 CTCI Group Sustainable Microfilm Event." Through the medium of film, this event gathers interesting and creative ideas to convey sustainability awareness and deepen sustainability goals.

CTCI Group ESG Award

Two Topics	Subtopic
CTCI Group Climate Action	Net Zero EPC, Circular Economy, Biodiversity
CTCI Group Social Influence	Charity care, Diversity, equality and inclusion(DEI)、Talent cultivation

23 nominations
12 awards
Empowerment Workshop

The 2023 CTCI Group ESG Award for Excellence in Sustainable Impact encourages colleagues to come up with diverse ideas for sustainable impact. "Empowerment workshops" are used to carry out creative thinking on various proposals, so that the selected colleagues can further refine their proposals, deeply exploring their impact and dissemination benefits, connecting to the SDGs. This process guides the co-creation and the implementation of sustainable values, embedding the spirit of "people-centric, hands-on thinking, and embracing failure" as a core principle.

Materiality and Stakeholder Communication

Procedure of Materiality Analysis

CTCI conducts materiality analysis every year to observe the changes in stakeholders' attention to ESG issues, gain insight into the impacts, risks and opportunities of sustainability trends on the Company's operations, confirm and adjust the disclosure, action plans and long-term goals of sustainability issues to meet stakeholders' expectations. In 2023, the procedure and results of materiality analysis were rigorously verified by a third-party organization, SGS Taiwan, using the AA 1000 (Assurance Standards v3) Type 2 verification that provides a high level of assurance.

We use a dual materiality framework that combines GRI 3: Material Topics 2021 of GRI Universal Standards 2021 and the European Sustainability Reporting Standards (ESRS) published by the European Sustainability Reporting Directive (CSRD). We also use methodologies developed by organizations such as Value Balancing Alliance (VBA), Harvard Business School's Impact-Weighted Accounts research program, and London Benchmarking Group (LBG) to evaluate economic, environmental, and human rights impacts. This process combines monetary and non-monetary methods to construct an impact-based materiality analysis. It identifies significant issues for CTCI Corporation, determines the boundaries and scopes of sustainability information disclosure, and serves as the basis for setting long-term sustainability goals.

Stage 1: Identify Target Audience and Issues for Communication

When determining target audience of the sustainability report, CTCI refers to the five principles of AA1000 Stakeholder Engagement Standards (SES): Dependence, responsibility, attention, influence, and diverse perspectives to identify six types of stakeholders: Shareholders/Investors、Suppliers/Contractors/Partners (co-contractors)、Customers、Employees、Media、Community/Government/Experts and Scholars.

In response to the dynamic changes in stakeholders' attention to sustainability issues, combined with the United Nations Sustainable Development Goals (SDGs), international trends, and suggestions from internal and external consultants, a total of twenty ESG issues relevant to the operation of CTCI were collected after re-discussion and adjustment. Compared to the ESG issues of last year, CTCI has renamed "Strategy for Emerging Markets" and "Climate Change and Net Zero Impact" to "Market Strategy" and "Climate Strategy and Net Zero Results," respectively. At the same time, "diversity and inclusion" has been newly added, and "Green Purchases" has been merged into " Supply Chain Sustainability Management."

Stage 2: Analyze Material Issues

CTCI has grasped the information of "stakeholders' attention", " the impact of the sustainability issues on CTCI's operations ", and "impacts of sustainable development" for the materiality analysis of the 2023 Sustainability Report:

◎ **Stakeholders' Attention:** Based on the principles of interaction, materiality, and influence, CTCI has determined the subjects of the survey to collect representative samples about main stakeholders' degree of concern over CTCI's sustainability initiatives. A total of 600 valid questionnaires were recovered, including 7 from shareholders/investors, 189 from suppliers/contractors/partners, 12 from customers, 343 from employees, 8 from the media, and 41 from community/government/experts.

◎ **The impact of sustainability issues on CTCI's operations:** To measure the impact of sustainability issues on CTCI's operations, factors such as revenue, customer satisfaction, operational risks, employee engagement, and brand image are considered. Additionally, 26 senior executives jointly determine the importance of each sustainability issue for CTCI's operations.

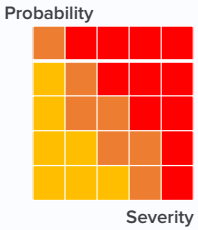
◎ **Impacts of sustainable development:** Regarding the monetary methodology, CTCI conducts Impact Valuation every year, and conducts external monetary assessment on ESG issues to explore the positive or negative impact of material issues. Please refer to the Sustainability Impact section for detailed information. In terms of non-monetary methods, we integrate methodologies from the Value Balancing Alliance (VBA), Harvard Business School's Impact-Weighted Accounts research program, and the London Benchmarking Group (LBG). From the perspectives of economic, environmental, and human (rights) impacts, 25 executives and colleagues identify significant impacts and sustainability issues based on positive and negative, actual and potential, irreversibility, and value chain considerations.

CTCI Impact Assessment Procedure - Non-monetary methods

15 impacts

Impact	Positive	Negative
Economy	4	0
Environment	1	3
People/ Human Rights	3	4

Source of impact:
(1)VBA Value Balance Alliance
(2)Harvard Business School, Impact-Weighted Accounts
London Benchmarking Group (LBG)



Severity = (1)+(2)+(3)
(1)Level
(2)Scope
Irreversibility

8 significant impacts

- +Product enhancement for industry service development
- +Tax payment to support infrastructure development
- +Increase investors' financial capital
- +Products assisting green transition of the industry
- +Salary payment to improve employees' well-being
- +Increase employment opportunities
- -Consumption of energy resources affects human health
- -Social costs of carbon caused by greenhouse gas emissions

Economic impact
Environmental impact
People/human rights impacts
+Positive impact
-Negative impact

Degree of impact	Sustainability Issues
Very high	• Corporate governance • Social Influence Enhancement • Net Zero EPC and Green Engineering
High	• Market strategy • Climate strategy and net zero results • Talent recruitment and retention • Innovative Technology and Services • Customer Service & Management • Integrity Management • Biodiversity • Career Development and Training • Labor Rights and Human Rights • Safety and Health in Workplace
Significance	• Project evaluation • Supply Chain Sustainability Management • Brand management • Water resource management • Waste Management

Defining positive and negative impacts | Significant impact analysis | Sustainability issues with significant impacts

CTCI Impact Assessment Process - Monetary (impact assessment)

ESG issues	Value chain input/output	Impact	Positive	Negative	Impact target	Monetary value
Net Zero EPC and Green Engineering	Help customers save energy and water, reduce air pollution and carbon emissions	Environmental benefits of green engineering	V		Environment	
Climate strategy and net zero results	Use renewable energy to avoid greenhouse gas emissions	Avoid social cost of carbon emissions	V		Environment	4,637,015
	Promote energy-saving measures to avoid greenhouse gas emissions	Avoid social cost of carbon emissions	V		Environment	262,071
	Greenhouse gas emissions from energy consumption	Avoid social cost of carbon emissions		V	Environment	17,219,104
	Air pollution caused by gasoline and diesel fuel usage	Result in social cost of air pollution		V	Environment	87,664,514
Supply Chain Sustainability Management	Procurement demand drives industry supply and demand	Increase the output value of the supply chain	V		Society	72,725,529,813
	Procurement demand drives industry supply and demand	Generate salary income for workers	V		External employees	4,338,362,769
	Procurement demand creates job opportunities	Social cost of carbon emissions derived from the supply chain		V	Environment	1,113,386,837
	Procurement demand causes supply chain greenhouse gas emissions	Social cost of air pollution discharge derived from the supply chain		V		
	Procurement demand causes air pollution discharge from the supply chain	Social cost of wastewater discharge derived from the supply chain		V		
	Procurement demand causes wastes from the supply chain	Social cost of waste treatment derived from the supply chain		V		

ESG issues	Value chain input/output	Impact	Positive	Negative	Impact target	Monetary value
Safety and Health in Workplace	Contractor Occupational Accident	Social cost of contractor occupational accidents		V	External employees	27,056,910
	Employee Occupational Accident	Social cost of occupational accidents		V	Employees	0
	Number of people with"three hypers"and high obesity	Social value of health promotion		V	Employees	4,555,866
	Number of people receiving health promotion to reduce the risk of disease occurrence	Social value of health promotion	V		Employees	4,555,866
	Investment in health-related promotion activities	Social value of health promotion	V		Employees	4,657,532
Career Development and Training	Employee training hours	Employees' future salary growth benefits	V		Employees	
Talent recruitment and retention	Employee remuneration and benefits	Employees' purchasing power and well-being	V		Employees	4,666,118,000
Social influence	Corporate volunteer service hours	Social Value of Volunteer Services	V		Society	943,882

Note: For detailed calculation of monetization, please refer to the chapter of Sustainable Impact.

Stage 3: Determine Material Issues and Disclosures

Based on the results of the analysis of three materiality questionnaires, the integration of the 2030 goals of the Company, and the sustainability goals linked with compensation, the Board of Directors has confirmed 11 ESG issues as material issues of the Company. At the same time, the impact scope of the material ESG issues in the upstream of the value chain, company operations, and downstream boundaries of the Company was examined one by one. Furthermore, according to the GRI guidelines, 11 material topics were identified (13 GRI topic-specific standards, 2 CTCI-specific standards), which collects and discloses internal information, data and management policies in accordance with the reporting requirements of the reporting guidelines. The material topics identified by CTCI are combined with the semi-annual risk assessment initiated by the risk management office. Through risk identification, analysis, and evaluation, as well as subsequent risk minimization, control, and monitoring, enterprise risk management (ERM) is implemented, with each responsible unit handling this process. For assessment details, please refer to the ; for management policies, please refer to the Appendix_Management Policy.

Ranking of CTCI material issues

Material ESG Issues	Sequential Arrangement	Degree of Impact on Organizational Operations	Level of Concern of Stakeholders	Impacts of Sustainable Development
Net Zero EPC and Green Engineering	1	**	***	***
Safety and Health in Workplace	2	**	***	**
Social Influence Enhancement	3	*	**	***
Climate Strategy and Net Zero Results	3	*	***	**
Talent recruitment and retention	5	**	**	**
Integrity Management	5	**	**	**
Supply Chain Sustainability Management	7	**	**	*
Career Development and Training	7	*	**	**
Innovative Technology and Services	9	*		**
Customer Service & Management	10		*	**
Brand management	11	*		*

CTCI's Dual Materiality

Aspect	Material Issue	CTCI Operation Impact (financial materiality)					Sustainable Development Impact (impact materiality)							
		Revenue growth	Customer satisfaction	Business operation risk	Employee loyalty	Brand image	Industrial technology development (Positive)	Upstream production value creation (positive)	Increase in net income after tax (positive)	Product environmental benefits (positive)	Employee well-being (positive)	Increase employment opportunities (positive)	Resource consumption (negative)	Greenhouse gas emissions (negative)
Economic Aspect	Integrity management			○		○		○	○					
	Innovative technology and services	○	○				○			○				
	Supply chain sustainability management	○	○				○	○		○				
	Customer service & management		○					○	○					
	Brand management					○	○	○						
Environmental Aspect	Climate strategy and net zero results					○				○			○	○
	Net zero and green engineering	○	○			○		○		○			○	○
Social Aspect	Talent recruitment and retention			○	○				○		○	○		
	Career development and training				○						○	○		
	Safety and health in workplace			○	○								○	○
	Social influence enhancement				○	○		○	○	○	○	○		○

*○: Issues that have an impact on business operations or sustainable development

Materiality Matrix

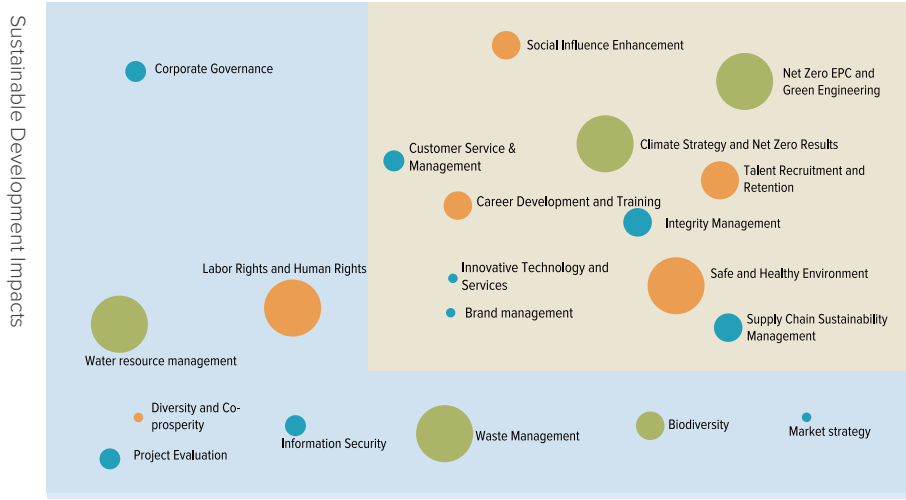
E Environmental Issues

S Social Issues

G Governance Issues

Level of Concern of Stakeholders

- Very Concerned(>4)
- Concerned(3)
- Normal(2)
- Slightly Concerned(1)
- Not Concerned(0)



Material Issues and CTCI Value Chain

Aspect	Material Issue	Stage undergoing impact from the issue				GRI Topic-Specific Standards	SASB Indicator	Chapters in the Sustainability Report
		Procurement stage	Planning, design, construction, operation	Used by customers	Society			
Economic Aspect	Integrity management	○	●			Anti-Corruption (205)	IF-EN-510a.2 IF-EN-510a.3	Integrity management
	Innovative technology and services		●			CTCI Topic-Specific		Pioneer in technology application
	Supply chain sustainability management	○				Supplier Environmental Assessment (308), Supplier Social Assessment (414)		Sustainable supply chain management
	Customer service & management		●	○		Customer privacy (418)		Customer service
	Brand management		●	○	◆	CTCI Topic-Specific		Group operations Sustainable supply chain management
Environmental Aspect	Climate strategy and net zero results	○	●	○		Emissions (305), energy (302), economic performance (201)	IF-EN-410a.3 IF-EN-410b.1 IF-EN-410b.3	Strengthen climate resilience Pioneer in friendly technology application Financial performance Strengthen climate resilience Employee recruitment and retention
	Net zero and green engineering	○	●	○		Energy (302)	IF-EN-410a.1 IF-EN-410a.2	Strengthen climate resilience Strengthen climate resilience Pioneer in Technology Application
Social Aspect	Talent recruitment and retention		●			Labor/management relations (402), market position (202)		Employee recruitment and retention
	Career development and training	○	●			Training and education (404)		Career Development and Training
	Safety and health in workplace		●			Occupational Safety and Health (403)	IF-EN-320a.1	Safe and Healthy Work Environment
	Social influence enhancement		●		◆	Local community (413), indirect economic impact (203)		Social Influence

2023 Stakeholder Communication

Stakeholder	Stakeholder's level of materiality to CTCI	Communication method and frequency	Major issues	CTCI's Response	2023 Communication Outcomes
Shareholders/ Investors	Shareholders'/investors' perception of the Company will affect stock price changes	• Annual general meeting • Quarterly investor conference • Investor briefing (irregular) • Investor visits (irregular)	• Profitability • Business Outlook • Horizontal competition • Operational Risk • Sustainable operation	• 2023 EPS: NT$2.39 • Benefited from the return of Taiwanese companies, the government's development of green energy, domestic clean energy business opportunities, and the plan of Taiwanese semiconductor companies to build fabs in the United States, the prospect for the backlog and new projects is optimistic.	• Hosted 1 shareholder meeting and 4 Group investor conferences • Invited to participate in 26 institutional investor conferences held by securities firms, and received a total of 160 visiting institutional investors
Suppliers/ Contractors/ Partners (co-contractors)	CTCI expects to work with vendors thorugh mutual support to enhance their capabilities in completing the work entrusted by customers while focusing on quality, schedule, and sustainability management.	• Annual supplier meeting • Vendor visit and factory visit (irregular) • Questionnaire	• Supply Chain Sustainability Management • Safety and Health in Workplace • Labor rights and human rights	• A vendor must sign the vendor's commitment to sustainable operation of the enterprise in order to register as a supplier to CTCI. • ESG Moment is conducted to share and promote ESG factors before meetings when vendors come for a visit. • Arrange factory visits and plan on-site visits • Questionnaires are issued to allow suppliers to conduct self-assessments and gain a preliminary understanding of their sustainability risks. For high-risk suppliers, CTCI will further conduct factory inspections and make recommendations for improvement. • CTCI Supplier Net Zero Alliance was established to encourage suppliers to reduce carbon emissions. • Instill sustainability into suppliersthrough capacity-building projects.	• By the end of 2023, 3,042 new suppliers had signed the Commitment for Sustainable Operations. • A total of 56 domestic and foreign manufacturers visited in 2023. • A total of 115 suppliers were visited in 2023. • A total of 128 domestic and foreign suppliers responded to the questionnaire in 2023. Factory audits have been conducted on 3 suppliers with higher sustainability risks, and suggestions are made for improvements. • A total of 172 suppliers have joined the alliance in 2023 to work together for the carbon reduction target. • A total of 110 suppliers were trained in simple carbon inventory courses in 2023, and their amount of carbon emissions was obtained. At the same time, suggestions for energy conservation and carbon reduction were provided to the suppliers. The expected annual carbon reduction amount is 475.1 tons of CO_2e.
Customers	• Provide contract work as the primary source of revenue • The company will deliver performance, establish its reputationand build its brand through contract execution.	• Conduct annual customer satisfaction survey. • Set annual quality objectives for projects, conduct measurements on a quarterly basis, and review the performance with relevant units if necessary.	• Customer Service & Management • Safety and Health in Workplace • Supply Chain Sustainability Management	• Implement CRM system, establishing customer relationship and providing good service • For items that do not meet the standards and deviate significantly from the target, corrective measures are formulated and the results of improvement implementation are tracked.	• Score of 2023 customer satisfaction survey: 8.20 (out of 10) • Inspect the quality objectives of 23 executed projects.

Stakeholder	Stakeholder's level of materiality to CTCI	Communication method and frequency	Major issues	CTCI's Response	2023 Communication Outcomes
Employees	Employees are the most valued and precious asset of CTCI, and they are also the main force of CTCI in promoting international engineering services. CTCI will work with its employees to build "the most reliable global engineering services team."	• Organize quarterly labor-management meetings, executive symposiums, and occupational safety and health committee. • Employee opinion platform hotline, dedicated e-mail, and employee welfare committee.	• Safety and health in workplace • Talent recruitment and retention • Career development and educational training	• Targets have been set for various occupational safety indicators to promote healthy workplaces simultaneously. • Strengthen the development of professional competencies, creating a learning platform “CTCI University” and examining the results through the achievement rate of professional competencies in place.	• Held 4 labor-management meetings • 4 occupational safety and health committee sessions were held • Rate of employees reaching professional competencies is 90.6
Media	Media coverage and evaluation of CTCI will affect the Company's reputation and image.	• Press release of important announcement/any time	• Information disclosure • Brand image	• Reports on CTCI’s sustainability-related activities through media outlets. • Increase views and clicks on the CTCI official website by posting sustainability-related activities in multiple languages on social media.	• Provide appropriate responses to the media to establish the brand image of “the Most Reliable”. • 1,807 media in 2023 • 747 media outlets from CTCI Education Foundation.
Community/ Government/ Experts and Scholars	CTCI has been actively playing the role of corporate citizen, devoting itself to social welfare, promoting environmental protection of the community to make the local economy blossom.	• Annual cultural events • Annual sustainability initiatives • Connect with local organizations and social welfare groups to organize public welfare activities (irregular) • Fortnightly charity sale • Promote volunteer opportunites.	• Social Participation • Volunteer services • Sustainable actions	• Raise educational standards, connect with the world, and move towards sustainable development. • Engage and assist social welfare foundations in the hope of promoting social harmony. • Promote inter-industrial cooperation and upgrade the quality of the entire engineering industry chain. • Offer dorm cleaner jobs on long-term contracts with the Syin-Lu Social Welfare Foundation. • Donate food and daily supplies to Taiwan Fund for Children and Families. • Hold strategic consensus camps, annual cultural events, and annual sustainability initiatives. • Charity sale and product procurement of Children Are Us Foundation • The “Food Bank” intiative of Carrefour Foundation (including physical donation and online fundraising) • Engage in charity activities, environmental protection, community service, and sustainability initiatives.	• CTCI donated 15 million to CTCI Education Foundation, which implemented 19 projects with a total of 10,976 participants. • There are a total of 59 academic associations in which the Company is a corporate member or an individual member. • NT$565,730 was spent on the provision of job opportunities for 92 workdays for a total of 520 man-hours. • 27 village safety boxes totaling NT$28,800 were donated for the whole year. • NT$40,000 expenditure on Children Are Us Foundation’s food • Donated NT$36,700 worth of supplies to the food bank; donated NT$1,196 for online food boxes. • Nearly 200 local residents and colleagues participated in the opening concert of the annual cultural event "Zhishan Splendor - Shilin Cultural Festival."(held along with the Urban Explorers - Ecological Survey Sharing Sessions) • The annual sustainability campaign "2023 Wetland Biodiversity Conservation for a Sustainable New Future" was attended by 57 Group colleagues and external supplier partners to implement environmental actions.

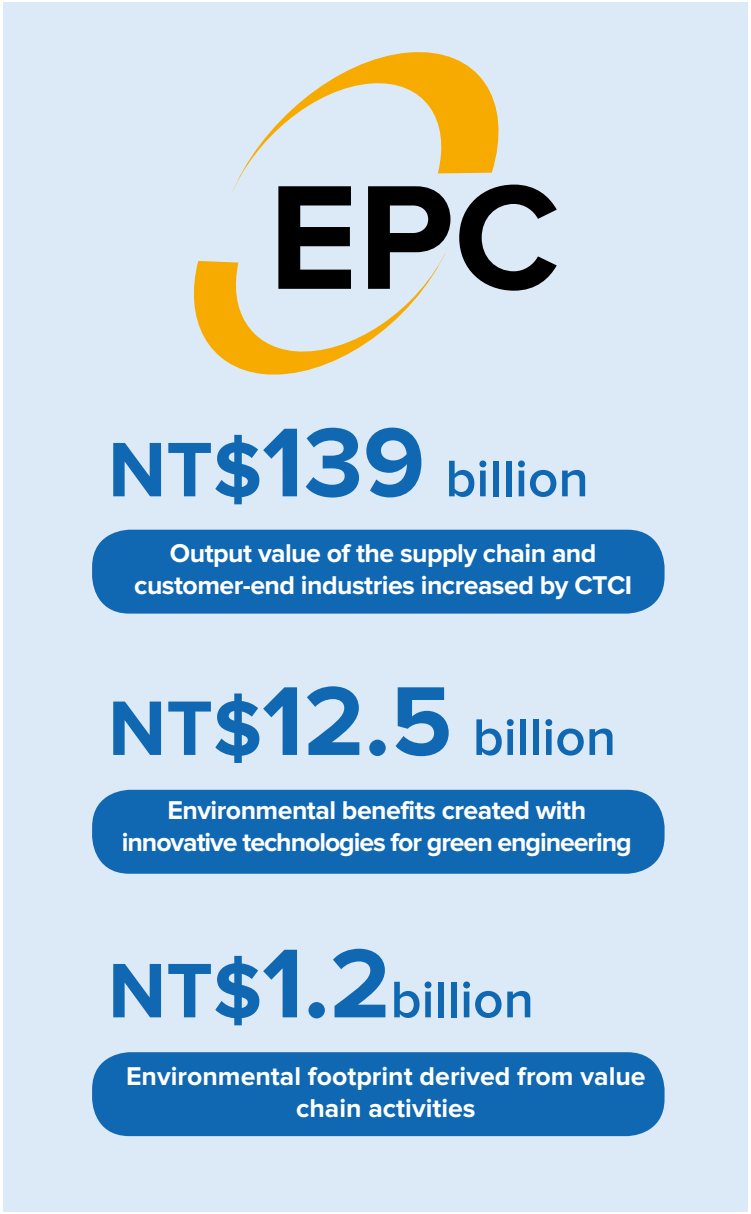
Sustainable Influence

Creating long-term value for the Company is the core mission of CTCI's sustainable operations. From an external perspective, we identify the changes caused by and facilitated by the operation process and upstream and downstream activities of the value chain on social welfare. Through the Profit & Loss mentality and the Triple Bottom Line (TBL) management concept of economy, environment and society, CTCI measures the positive (benefits) and negative (costs) created directly or indirectly by the Company, converting the impact into a consistent monetary language, making it easier for stakeholders to understand the substantial value of CTCI, and driving more effective management and decision-making for the Company.

In 2023, CTCI created a financial value of NT$3.2 billion for external stakeholders in the economic dimension. This includes operating profit, tax payments, research and development investments, depreciation, and amortization. These contributions not only assisted customers and suppliers, supported government welfare policies, and provided investors with high returns but also promoted the growth of the social economy. In the social dimension, providing quality employment compensation and training opportunities had a positive impact of NT$190 million, meeting employees' quality of life and employability growth needs. Employee participation in volunteer works generated a social benefit of NT$2.65 million. While health risks associated with the workload resulted in a social cost of NT$4.56 million, the health center's long-term tracking and provision of appropriate health education information effectively managed employees' health. Furthermore, organizing diverse health promotion activities resulted in a positive value of NT$9.21 million. While devoting in its core business of engineering, the environmental footprint derived from energy and resource consumption and pollution production incurs a social cost of NT$110 million. In 2022, the Company has planned short-, medium-, and long-term carbon reduction targets, and deployed various energy-saving solutions and renewable energy applications. A total of NT$2.65 million in environmental benefits was created in 2023. In the future, the Company will strive to achieve net zero emissions by 2050 in a gradual manner in the future.

In the procurement stage, CTCI's procurement demand drove the supply chain to create NT$72.7 billion in output value, creating 15,000 job opportunities and NT$4.3 billion in salary income for supply chain workers. However, occupational accidents among contractors resulted in a social cost of NT$70,000. The environmental footprint and resource consumption derived from the supply of raw materials and services incurs a social cost of NT$1.1 billion. CTCI will continue to promote a responsible supply chain, work with suppliers to explore opportunities for improvement, and drive the sustainable transformation of the industry. At the stage of plant construction and maintenance, CTCI's contracted projects have brought NT$66.3 billion of production value to customers' industries. Through the three major aspects of "green engineering" (green technology, green contracting, and green investment), we help customers save energy with innovative technologies, water conservation, and resource consumption reduction to create NT$12.5 billion in environmental benefits.

In the future, we will expand the application of innovative green engineering technologies, while strengthening sustainable supply chain management and more efficient engineering service models, to reduce the environmental impact of the value chain, improve social welfare, and create more significant positive value for our stakeholders.



Sustainable Impact of CTCI	Output Metric	Impact Metric	Type of Impact	Monentory 2022	Monentory 2023	Rating	Stakeholders	Cause of the Impact	ESG Issue
Supply chain output value increased by CTCI	Procurement demand drives industry supply and demand	Promoting social and economic development	Positive(+)	64,163,220,185	72,725,529,813	●●●●●●	Society	Supply chain (indirect impact)	Supply Chain Sustainability Management
Generate salary income for workers	Procurement and job creation	Improve well-being and purchasing power	Positive(+)	4,037,996,682	4,338,362,769	●●●●●○	External employees	Supply chain (indirectimpact)	
Social cost of carbon emissions from the supply chain	Procurement requirements contribute to supply chain greenhouse gas emissions	Increase the risk of climate change caused by global warming	Negative(-)	446,753,690	509,685,247	●●●●○○	Environment	Supply chain (indirect impact)	
Social cost of air pollution discharge from the supply chain	Procurement demand promotes air pollution discharge in the supply chain	Impacts of air pollution on human health and ecosystem	Negative(-)	529,999,006	591,708,440	●●●●○○	Environment	Supply chain (indirect impact)	
Social cost of waste water discharge in the supply chain	Procurement demands contribute to the discharge of wastewater from the supply chain	Methane emissions from wastewater lead to global warming	Negative(-)	2,153,545	2,377,892	●●○○○○	Environment	Supply chain (indirectimpact)	
Social costs of treating derivative waste in the supply chain	Procurement requirements cause waste to be generated from the supply chain	Impacts on global warming, human health, and ecosystems caused by waste disposal	Negative(-)	8,611,904	9,615,258	●●○○○○	Environment	Supply chain (indirect impact)	
Social cost of occupational accidents by contractors	Occupational accidents by contractors	Physical and mental impact on workers and medical resource expenditure	Negative(-)	27,056,910	70,631	●○○○○○	External employees	Company operations (direct impact)	Safety and Health in Workplace
Economic value-added income	Direct financial value created for stakeholders	Improve well-being and purchasing power	Positive(+)	3,679,538,000	3,243,784,000	●●●●●○	Society	Company operations (direct impact)	Economic performance
Social costs averted by reducing carbon emissions	Use renewable energy to avoid greenhouse gas emission	Reduce the risk of climate change caused by global warming	Positive(+)	77,676	2,342,090	●●○○○○	Environment	Company operations (direct impact)	Climate strategy and net zero results
Social costs averted by reducing carbon emissions	Promote energy-saving measures to avoid greenhouse gas emission	Reduce the risk of climate change caused by global warming	Positive(+)	337,577	312,524	●○○○○○	Environment	Company operations (direct impact)	
Social costs resulting from carbon emissions	Greenhouse gas emissions from energy consumption	Increase the risk of climate change caused by global warming	Negative(-)	16,765,192	14,825,263	●●●○○○	Environment	Company operations (direct impact)	
Social costs caused by air pollution	Air pollution caused by gasoline and diesel fuel usage	Impacts of air pollution on human health and ecosystem	Negative(-)	123,151,956	87,668,123	●●●○○○	Environment	Company operations (direct impact)	
Social costs associated with water consumption	Water scarcity due to water use	Water shortage and water-borne diseases that affect human health	Negative(-)	870,398	1,877,384	●●○○○○	Environment	Company operations (direct impact)	Water resource management
Social cost associated with waste treatment	Air pollution and greenhouse gas emissions due to waste incineration and landfill	Impacts on global warming, human health, and ecosystems caused by waste disposal	Negative(-)	2,787,042	5,180,257	●●○○○○	Environment	Company operations (direct impact)	Waste Management
Employees' future salary growth benefits	Employee training hours	Training to acquire professional skills and enhance employability	Positive(+)	234,795,487	193,729,017	●●●●○○	Internal employees	Company operations (direct impact)	Career Development - Education and Training
Employee purchasing power and well-being	Employee remuneration and benefits	Improve well-being and purchasing power	Positive(+)	4,131,274,000	4,666,118,000	●●●●●○	Internal employees	Company operations (direct impact)	Talent recruitment and retention
The social value of health promotion	Number of people with high health test results and high obesity	Workload-related cardiovascular disease risk	Negative(-)	5,660,095	4,555,866	●●○○○○	Internal employees	Company operations (direct impact)	
The social value of health promotion	Number of people receiving health promotion to reduce the risk of disease occurrence	Maintain work-life balance	Positive(+)	5,660,095	4,555,866	●●○○○○	Internal employees	Company operations (direct impact)	Safety and Health in Workplace
The social value of health promotion	Investment in health promotion activities	Maintain work-life balance	Positive(+)	4,181,364	4,657,532	●●○○○○	Internal employees	Company operations (direct impact)	
Social cost of occupational disasters	Employee Occupational Accident	Physical and mental impact on workers and medical resource expenditure	Negative(-)	0	0	○○○○○○	Internal employees	Company operations (direct impact)	
Social Value of Volunteering	Corporate volunteer hours	Promoting local community relations	Positive(+)	2,091,085	2,652,017	●○○○○○	Society	Company operations (direct impact)	Social influence
Industry chain output value increased by CTCI	EPC engineering contracts that drive supply and demand in the market.	Promoting social and economic development	Positive(+)	46,081,053,156	66,283,395,495	●●●●●●	Society	Products and services (indirect impact)	Economic performance
Environmental benefits of green engineering	Help customers save energy, water, reduces air pollution, and carbon emissions	Reducing the environmental impact of customers' plant maintenance and operation	Positive(+)	19,659,841,020	12,467,137,777	●●●●●●	Environment	Products and services (indirect impact)	Net Zero EPC and Green Engineering

Note 1: In upstream procurement, the Input-Output Model is used to calculate the economic benefits derived from the supply and demand in the industry chain driven by procurement, as well as environmental issues, job opportunities, and salary income that comes with the benefits. References include reports on industry relations statistics (Department of Budget, Accounting and Statistics, 2020), green national income accounting (Department of Budget, Accounting and Statistics, 2022), energy balance sheets (Bureau of Energy, 2022), and the EXIOBASE 2 database.

Note 2: Gross Value added (GVA) is the positive impact generated during business opearation on external stakeholders, including net profit, tax payment, dividends, interest, rent, R&D investment, depreciation and amortization

Note 3: The environmental footprint is calculated using the Environmental Profit and Loss (EP&L) methodology, which considers the social costs of carbon (SCC), human health loss costs, and ecosystem damage costs derived from greenhouse gases, air pollution, waste, and water resource consumption. References include US EPA (2016), OECD (2012), and CE Delft (2018). Since introducing renewable energy and energy saving measures ahould be able to create positive benefits to avert carbon social costs of carbon, CTCI has use both urchased and self-generated renewable energy in 6 million kWh in total, which is 60-times more than the previous year. Since introducing renewable energy and energy-saving measures should create positive benefits to avert the social costs of carbon, CTCI has used both purchased and self-generated renewable energy, totaling 6 million kWh in 2023, which is 60 times more than the previous year.

Note 4: The social cost of occupational accidents is calculated by the amount employees are willing to pay to avoid occupational accidents and the cost of medical expenses resulting from occupational accidents.The source of refernce is UK HSE (2017). In 2022, there were two occupational fatalities among contractor employees, whereas in 2023, no occupational fatalities occurred.

Note 5: The future salary growth income brought by employee training refers to the evaluation of the professional skills and knowledge acquired by colleagues through the Company's training programs, which not only enhances productivity, but also brings better employability to their future career development, which in turn affects their annual average expected value of career salary development. The reference source is VBA (2021).

Note 6: The purchasing power and well-being created by employment and salaries are calculated based on employee salaries and welfare expenses.

Note 7: The social value of health promotion considers employees with potential factors for cardiovascular diseases such as hypertension, hyperlipidemia, hyperglycemia, and obesity. It assesses the attribution relationship between their health risks and workload, as well as the possible medical resource inputs. The reference sources are WHO (2008) and Chieh-Hsien Lee (2009). In order to have a better grasp of the annual changes in employees' health status, the health check data wasmeasured annually since 2022.

Note 8: The value of corporate volunteer services is calculated by multiplying the number of volunteer service hours of employees by the average hourly salary of practitioners in the construction, engineering services, and technical testing and analysis services (Department of Budget, Accounting and Statistics, 2022).

Note 9: The economic value indirectly created is assessed by taking into account the supply and demand relationship between engineering revenue and the output value of the customer's industry during the plant construction and maintenance operations stage. Sources of reference include BASF (2018) and VBA (2022).

Note 10: Green engineering benefits refer to the conversion of actual and estimated benefits of green engineering technology into equivalent environmental impact, including energy, water, and resource consumption reduction, and calculate the avoided carbon social cost, human health loss, and ecosystem damage cost. The total installation capacity of offshore wind power contracted by the Company increased from the previous year, but the change in capacity factor affected the power generation; in addition, in response to the Company's business transformation to a low-carbon and high-tech oriented, changes and adjustments in the application of green technology projects, which affected the benefits of green technology, the environmental benefits created by green projects in 2023 will be lower than the year before.

Note 11: Considering the differences in the economic conditions of various countries, the value coefficient is adjusted with the Gross National Income (GNI) per capita measured by the Purchasing Power Parity (PP) of each region, and the time boundary is rounded up to 2017 The methodology referred to OECD (2012) and PwC UK (2015).

IMV Level	Monetary Value (NTD in million)
●○○○○○	0~1
●●○○○○	1~10
●●●○○○	10~100
●●●●○○	100~1,000
●●●●●○	1,000~10,000
●●●●●●	>10,000

2030 long-term Sustainability Goals

As a leader to promote sustainable development in domestic engineering industry, CTCI has set up long-term goals for 2030 and put into action the vision of Guarding the Earth with Constant Innovation in Green Engineering while fulfilling 4 sustainability roles including "The most reliable global engineering services provider", "A guardian of sustainable earth", "The best employer that builds a happy workplace", and "A corporate citizen willing to commit."

Sustainability Role	Material Issue	Commitment	2030 Target
The Most Reliable Global Engineering Services Provider	Innovative technology and services	Enhance design quality and strengthen project execution efficiency and capabilities through innovation, sophisticated expertise and increased access to intelligent technology, thus providing differentiated services.	KPI 1 - Complete the Rule-based Design and Design Chip; Development progress: 100% KPI 2 - Enhance engineering design capabilities; Development progress: 100% KPI 3 - Digital transformation projects development; Development progress: 100% KPI 4 - Development progress: 100% Number of technologies and techniques developed, introduced or imported each year: 5 items
	Supply chain sustainability management	Strengthen and enhance the sustainable management performance of suppliers through their signing of the letters of commitment to ESG and audits on their ESG performance to form a positive cycle and expand the sustainable influence of suppliers	KPI 1 - Suppliers who have passed Tier 1 written audit: 100% KPI 2 - On-site audit achievement rate of ESG high-risk suppliers 100% KPI 3 - The rate of improvement to deficiencies identified in audit of ESG high-risk suppliers: 100% KPI 4 - Cultivate the greenhouse gas management capabilities of suppliers and complete the capacity building of 500 suppliers.
	Integrity management	The corporate culture of integrity management helps improve sound business operations and risk management, and lay the foundation of sustainable business.	KPI 1 - Completion rate of integrity management courses among employees: 100% KPI 2 - Review integrity management regulations and mechanisms every year and conduct trainings on integrity management for business partners at least once a year
	Customer service management	In line with the corporate mission of "to satisfy our customers with optimized engineering services," constantly breaking through and challenging ourselves, and making CTCI more international, providing customers with the best and most reliable services	KPI 1 - Customer satisfaction score: 8 points KPI 2 - Response rate of customer satisfaction survey: 100%

Sustainability Role	Material Issue	Commitment	2030 Target
 **A guardian of sustainable earth**	Efforts on climate change and net zero emission	As global climate change exacerbates, CTCI will transform into low-carbon business model, aiming to save energy consumption and reduce operation cost by taking energysaving measures and utilizing renewable energy	Develop mitigation targets for Scope 1&2 based on SBTi 1.5°C scenario with 2022 as the baseline year KPI 1: 100% reduction in headquarters carbon emissions KPI 2: 45% reduction in total carbon emissions (Note: Total carbon emissions are from headquarters and global construction sites; includes scope 1 and scope 2 emissions)
	Net Zero EPC and Green Engineering	Innovate development of Net Zero EPC technology, import carbon capture and energy conversion technologies, facilitate expansion of low carbon and green engineering business	KPI 1- The proportion of projects that adopt at least one green process: 100% KPI 2- The proportion of undertaking low-carbon and green engineering project: 50%
 **The best employer that builds a happy workplace**	Safe and healthy work environment	Provide a safe and secure workplace, promote various health promotion activities, reduce occupational disaster rate and construction risks, create a healthy workplace, and improve cohesion among employees.	KPI 1 - Frequency of OSHA total recordable case rate (TRCR): ≦ 0.1 KPI 2 - Health check abnormalities tracking rate: 95%
	Career development and training	According to different organizational structures and hierarchies, plan a comprehensive training blueprint and give systematic and planned career development path, in order to achieve the goal of recruiting talents, cultivating talents, and discovering talents for CTCI	KPI 1 - Achievement rate of professional competence assessment: 95% KPI 2 - Implementation rate of personal development plans: 90% KPI 3 - Completion rate of career planning path: 85%
	Recruitment and retention	With the help of new technologies and behavioral-structured interviews, improve the talent recruitment and retention rate, and provide a perfect and competitive compensation plan and a friendly and healthy workplace for perfect learning and development in order to achieve the goal of talent retention.	KPI 1 - Enhance the technical capability of key personnel; key personnel achieving a 5.0 (Master level) competency rating: 80% KPI 2 - Define market positioning standards for compensation, check and adjust compensation system each year. KPI 3 - Make plans of long-term incentive compensation tools such as restrictive stocks
 **A Corporate Citizen Willing to Commit**	Brand management	Through brand management, we will create the "Most Reliable" brand image and enhance brand recognition around the globe. We will strengthen customer adhesion and help expand business into new markets.	KPI 1 - A total of 300 reports on CTCI by the media
	Social involvement	With its own professional core competencies, CTCI is committed to giving back to the society, promoting green friendly technology application and talent cultivation for sustainable engineering, enhancing the Company's brand image, and continuing the green business innovation and development.	KPI 1 - Event themes: 20 items KPI 2 - Event sessions: 150 sessions KPI 3 - Number of participants: 15,000 KPI 4 - Number of parties involved in the industry, government, and university cooperation: 120

CH2

CTCI's Sustainable Role

CTCI's Sustainable Role I —

The Most Reliable Global Engineering Services Provider

Sustainable Role I —The Most Reliable Global Engineering Services Provider

Integrity is the foundation of CTCI's sustainable operation and also its culture. We have integrated the culture of professionalism, team and innovation, and worked with supplier partners in the value chain to build professional and sustainable project service capabilities, and provide customers with the best and most trustworthy services, and build the most trustworthy brand value for the Company's continuous growth and sustainable development.

100%

Signing ratio of CTCI Group Codes of Ethical Conduct

63%

Percentage of R&D for environmental technology

8.20point

Customer Satisfaction

TOP100

Engineering NewsRecord (ENR) international engineering companies - International Contractors、International Design Firms

TOP10

Engineering NewsRecord (ENR) international engineering companies - Contractors in Manufacturing

Business Ethics & Integrity Management

CTCI Group Codes of Ethical Conduct

CTCI takes "Most Reliable" as its brand positioning. The "Codes of Ethical Conduct", "Ethical Corporate Management Principles of CTCI" adopted by the Board of Directors and CTCI issued, as the ethical standards and codes of conduct that CTCI's directors, managers and all employees should follow when performing their duties, manage anti-corruption, fair trade, prohibition of insider trading, etc. to prevent dishonest behavior and submit CTCI Corporate Integrity Operation Policy to the board of directors at the end of each year.

CTCI hopes to improve and drive the sustainable development of the entire value chain through the mutual influence of upstream and downstream. Therefore, we have also formulated a "Code of conduct for vendors" for suppliers". For detailed management instructions, please refer to **Supply Chain Sustainability Management**. CTCI respects and upholds all internationally recognized human rights. We follow the UN Global Compact, the Universal Declaration of Human Rights, Work Equal Remuneration Convention, and other norms and spirits related to human rights, labor standards, environment and anticorruption, formulating CTCI Human Right Policy. Please refer to Human Rights Management.

Implement Ethical Management - Education and Training Advocacy

In order to establish a responsible business ethics culture for all internal parties, for directors and supervisors, the Company conducts education and advocacy for directors, managers and employees on the "Measures to Prevent Insider Trading" and relevant laws and regulations at least once a year, and provide timely education and advocacy for new directors, managers and employees. Every year, regular training and signing of the CTCI Codes of Ethical Conduct are held for all employees of the Group (including formal, contracted and dispatched employees) to continue to emphasize CTCI's integrity concepts of anti-corruption, integrity, commitment and honesty. In 2023, the training coverage rate and signing rate are both 100%; for new recruits, courses related to ethical behavior are also arranged in the new employee training. In 2023, a total of 857 new recruits in Taiwan will be trained, and the coverage rate is 100%.

CTCI Codes of Ethical Conduct Signing rate & Training

Item		2020	2021	2022	2023
CTCI Codes of Ethical Conduct Signing rate	Number of people	2,570	2,668	3,034	3,444
	%	100%	100%	100%	100%
All employees Regular training	Number of trainees	2,570	2,668	3,034	3,444
	Coverage rate	100%	100%	100%	100%
	training hours	2,570	2,668	3,034	3,444
	Training completion rate	100%	100%	100%	100%
New recruits	Number of trainees	143	461	801	857
	Coverage rate	100%	100%	100%	100%
	training hours	71.5	230.5	400.5	428.5
	Training completion rate	100%	100%	100%	100%

Note 1: Coverage rate (%) = actual number of people trained ÷ number of trainees

Note 2: Training completion rate (%) = number of people who completed the training ÷ number of trainees; for employees who have not completed the training, their immediate supervisors will be notified, and their direct supervisors will remind them to track the employees who have not completed the training and must complete it within the time limit.

"Integrity" is one of the core elements of CTCI's corporate culture, we incorporate corporate culture into the performance appraisal projects of supervisors and employees, set relevant behavioral indicators, and establish effective reward and punishment system to ensure that Integrity management is related to employee performance. The assessment and human resources management systems are combined to specifically implement the content of the code of conduct. For those who have daily work responsibilities and come into contact with money, such as the project site manager, site office manager, site general affairs, etc. who are responsible for the management and application of peey cash at the project construction site, as well as colleagues of the company's general affairs cashier, the company will insure employee loyalty insurance according to the amount of their management. The responsible unit uploads the detail list, the photocopy of bankbook of perry cash account , Petty Cash Reconcillation, etc. every month for the accounting department's reference; the company's general affairs cashier prepares an annual Petty Cash Reconcillation provides to the accounting department for review before the end of the year. Corporate culture activities are held every year to enhance all colleagues' awareness and recognition of CTCI's corporate culture of "professionalism, integrity, teamwork, and innovation", If you have any doubts about corporate culture and behavioral indicators, you can submit a consultation through the Suggestion Mailbox, and the Human Resources Department will assist in answering and clarifying the doubts.

The Human Resources Department of CTCI is the dedicated unit responsible for promoting integrity management. It conducts annual integrity risk assessments and regularly summarizes CTCI Corporate Integrity Operation Policy submits to the board of directors. The audit unit formulates relevant audit plans every year based on the risk assessment results of dishonest conduct, prepares an audit report to be submitted to the chairman for approval. The audit results are reported to the dedicated unit for integrity every quarter to ensure the effectiveness of the integrity policy.

Anti-corruption and bribery

To ensure prevent bribery and corruption, CTCI requires that employees should not give discounts when conducting trading activities with stakeholders, and cannot ask for, make deals with, give, or accept gifts, entertainment, kickbacks, or bribes for himself/herself or on behalf of others when carrying out his/her job duties. CTCI clearly defines the principles and penalties of "rules for gift receiving", "prevention of conflict of interest" and "protection of trade secrets and intellectual property rights" in the "Rules for Ethical Conduct". The "Code of Integrity Business" prohibits the provision of illegal political donations and prohibits improper charitable donations or sponsorships to avoid disguised bribery. CTCI checked the 20 lowest ranking countries in the Transparency International's Corruption Perception Index in 2023 and the Group found no construction projects in those countries.

In order to specifically promote the anti-corruption policy, CTCI regularly announces the "no gift acceptance policy" on three occasions every year. Overseas projects are also implemented and promoted according to the same standards, and publicity and communication are also provided to contractors, customers, etc. Since purchasing personnel are in direct contact with external manufacturers when handling procurement operations, in order to clarify personal responsibilities, all colleagues who enter the purchasing department should sign the Purchasing Personnel Code, which specifically promises that purchasing personnel should comply with legal requirements when performing matters and must not solicit personal improper benefits or accept payments. Any form of remuneration and other ethical standards, and a questionnaire survey will be conducted when new people join the purchasing department to establish personal information, so that department work assignments can implement the avoidance of interests in purchasing operations. For construction site colleagues, we will continue to strengthen relevant publicity and training for construction site colleagues through online meetings, education and training, and post behavioral indicators of corporate culture at each construction site to cultivate the concept of integrity and sustainability among colleagues and contractors. There were no confirmed corruption incidents between 2020 and 2023.

Note：Transparency International's Corruption Perception Index

Anti-Fair Competition

CTCI Group maintains visions of legal compliance and honest business operations, and fully exercises professionalism and integrity. To ensure fair trade, fair competition and to prevent unfair competition, monopoly, joint inappropriate behavior, inappropriate market allocations and joint price manipulations, the Group always abides by a fair-trade spirit, regardless of project tenders or external contracted service/ procurement projects. In order to enhance the efficiency and quality of project tendering and procurement processes, CTCI always undertakes fair and open tendering process when competing for business targets. CTCI will continue to expand the spirit of fair trading by encouraging all employees to file reports.

In addition, it continues to carry out employee trainings targeted at marketing and sales, procurement representatives, legal affairs, contract personnel and other relevant department employees that may be involved in related risks and are required to regularly participate in antitrust law, fair trade law education, training and case analysis courses every year and pass the test. Colleagues in other departments can also take the courses to improve knowledge of regulations. Current statistics from 2020 to 2023, the total number of trained employees (including new and current colleagues) who have completed the relevant training courses has reached 451 and they are aggressively implementing fair trade and related laws and regulations on their positions.

CTCI Antitrust and Fair Competition Policy Training Achievement

Annual	2020	2021	2022	2023
Annual number (new colleagues + current colleagues) of trainees	139	103	105	104

CTCI Antitrust and Fair Competition Policy

If CTCI's employee is found to have violated or breach regulations pertaining to anti-trust laws, the company will conduct a comprehensive and thorough investigation of the employee's work history and suspend the employee from having any contact with the work. If a criminal offense is involved, the company will deal with it in accordance with the law. Therefore, no anti-competitive behavior related cases occurred in CTCI Group in 2023.

Reporting and Protection

If employees have questions about ethical business conduct or the Code of Conduct, they can seek advice from their immediate supervisor, human resources Department or compliance department. In order to prevent inappropriate behavior, CTCI has an independent internal reporting mailbox and has established a reporting platform through a third-party impartial organization. If internal colleagues or external personnel discover any illegal or improper behavior within the group or cooperative vendors, they will immediately or are in the process of reporting it. Anyone who has a negative impact on the group can take the initiative to report it through relevant channels. Reporting cases are accepted by the human resources department. In addition to investigating the case and implementing follow-up improvements in accordance with relevant regulations, a list of reports is sent to the independent directors every quarter for reference.

Reporting channel of CTCI Grup

External reporting platform

ctci@reportnow.com.tw
Internal independent reporting mailbox

We promise to keep the identity of the whistleblower confidential, and promise that the whistleblower will not be fired, demoted, reduced in salary, damaged by laws, contracts or customary rights or otherwise disadvantaged due to the case reported; and we will formulate incentives. According to the mechanism, the reward and punishment committee will immediately provide reporting bonuses based on the size of the case that is verified to be true, so as to encourage colleagues to have the courage to report. CTCI received a total of 11 reported cases in 2023. After investigation, a total of 1 violation of business ethics was confirmed. All necessary improvement measures have been taken and the case has been closed.

Statistics of Employee Opinion Platform

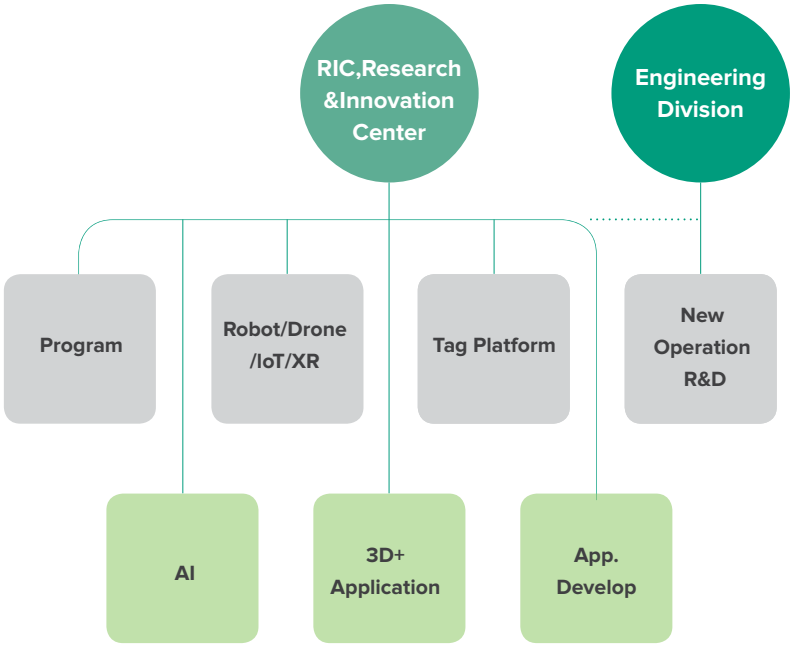
Item		2020	2021	2022	2023
Number of reported cases		3	4	2	11
Number of investigations completed		3	4	2	11
Number of cases under investigation		-	-	-	-
Number of official cases		3	2	2	1
Type of case	Number of official cases	-	-	-	-
	Discrimination or harassment	-	-	-	-
	Customer privacy data leakage	-	-	-	-
	Conflicts of Interest	-	1	-	1
	Money laundering or insider trading	-	-	-	-
	Others	3	3	2	-

Note: The cases completed in 2023 were due to employee' improper management of petty cash due to their work responsibilities, and they were punished with demerits. The company has also strengthened the promotion of integrity control measures.

Innovative Technologies and Services

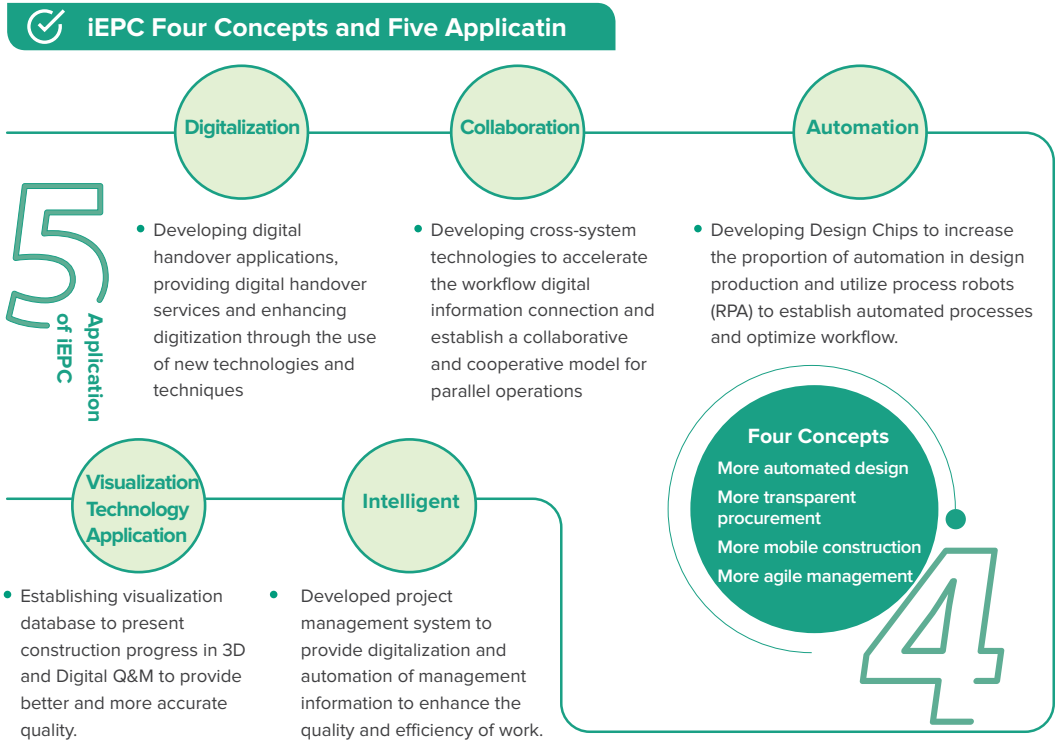
Innovative Research and Development

With a corporate culture of professionalism, integrity, teamwork, and innovation, CTCI seeks to continuously accumulate development potentials by implementing innovative research and development. Since the establishment of the “Innovation R&D Center” in 2017, we have continued to invest resources in research and development of intelligent turkey projects to improve and optimize EPC performance. The units assigned to the center have seven sections including "R&D Project Management," "Artificial Intelligence (AI)," "New Operations R&D," "Robot/Drone/IoT/XR," "3D+ Application," "Tag Platform Application," and "Application Development." These are devoted to the R&D of various aspects and will optimize the development of design automation tools, improve AI-assisted tools and develop digital transformation. It can maximize the efficiency of work, strengthen the overall effectiveness and provide the most complete innovative service model.



iEPC Turnkey Digital Engineering

In 2023, based on the major development goals of delivering digital transformation of EPC turnkey project, CTCI’s Research and Innovation Center continuously develops an exclusive intelligent EPC (iEPC) digital engineering platform of CTCI, and adheres to the principles of “Automated Engineering”, “Transparent Procurement”, ”Mobility in Construction”, and ”Agile Management “. Through deepening iEPC’s applications and technologies for Digital Twin, It has optimized project management to be more transparent, safer, better optimized, more efficient, and with higher quality. Availed by the digital transformation iEPC brings, not only to enhance the quality and efficient of work, but also to leverage the advantages of engineering – native thinks. In the future, existing intelligent systems will be integrated to provide customer with the digital value-added service, making data collection, analysis allowing CTCI to differentiate our services from competitors and becoming a unique produce of EPC turnkey project for CTCI.



In response to the expansion of our Group's business layout, our technological innovation and R&D must also keep up. CTCI continue to optimize the efficiency and quality of each stage of the EPC and provide significant benefits on the improvement of work safety and cost saving. In the engineering stage, continuously develop and improve design tools, and increase the proportion of automation in desing output to assist in the digitalization and structuring data to reduce manual re-entry. When applied to procurement tasks, we use the cloud and utilize robotic process automation (RPA) to integrate the vendor's portal platform to optimize the procurement process. As for the construction phase, we apply the new technologies to improve the digitization and efficiency of the construction site, and make good use of 3D visualization and information integration to establish a construction sequence simulation system that optimizes the construction schedule and provides the planning system for construction workface. Beside, we continue to optimize and develop the functions of the internal pipe cleaning robot, and the piping flange managemen robot is in the testing phase. Application of technologies allows us not only the construction works to be more rhythmic and enhances the automation and efficiency of field works, but also achieving digitial transformation at all stages of project.

With respect to professional expertise, we continue to refine our engineering capabilities through Lessons Learned, capability inventory, industry-academia collaborations and self-research in line with the company's strategy to expand into the high-tech mark and green engineering . By now, we have established desalination systems, wastewater reclamation, clean hydrogen energy and battery technology, incinerator system and carbon capture, storage and utilization technology to improve our engineering design and qualities of engineering reviews, and update design guidelines and specifications accordingly. Also, the workshops and training courses are conducted to strengthen EPC project execution capabilities for our engineers, with the end goal of making project executions faster, better, more precise and competitively to meet the demands in the fast changing markets.

2022

- Development for Engineering Data Extraction Technology
- EPC Twin
- Development and application for CTCI RPA and intelligent solutions
- iConstruction - Construction Site Assistance Management
- Development and application for CTCI RPA and intelligent solutions
- iEPC Intelligent Design System Development-2022
- Research of Seawater Desalination System-2022
- Application of PILOT achievements in wastewater reclamation
- Introduction and maintenance for Engineering design data exchange system
- i-Procurement 2022
- Construction 2022 R&D Topics

2023

- iSchedule & Digital Twin
- New Technology Applications for Construction Site Management
- Process Automation and Hybrid Cloud Solutions Research and Development
- Research for Biogas System
- Research for energy technology research
- Research for Carbon Capture, Storage and Utilization
- Research for incinerator system equipment
- 3D design automation development for turnkey projects
- Integration of Vendor Entry and Procurement Operation System Optimization
- Development of Construction Integration and Automation

*Only key development technology or products are listed

Development of Technology

Making the best efforts to contribute to the sustainability of our ecological environment, CTCI makes sure that it considers all environmental risks and impacts throughout the whole process of construction. We carry through the idea of green management and environmental protection to our supply chain. Through upper stream supplier management, CTCI looks forward to achieving more than what its stakeholders expect, and create win-win situations for our economy, society, and environment. In terms of investment of technology research and development, CTCI has put 63% of its investment in environmental investment in 2023, reaching NT$84,714,090. Applications that we developed include real-time information board, site mobility, labeling, equipment information integration, Seawater Desalination System design, Net Zero Emissions design, automation design, and 4D construction simulation (refer to chart below). The introduction and development of these engineering technologies not only help to enhance the competitiveness of CTCI within the industry, but also lifted the domestic engineering technologies up to the global level.

Monetary amount and manpower invested in R&D

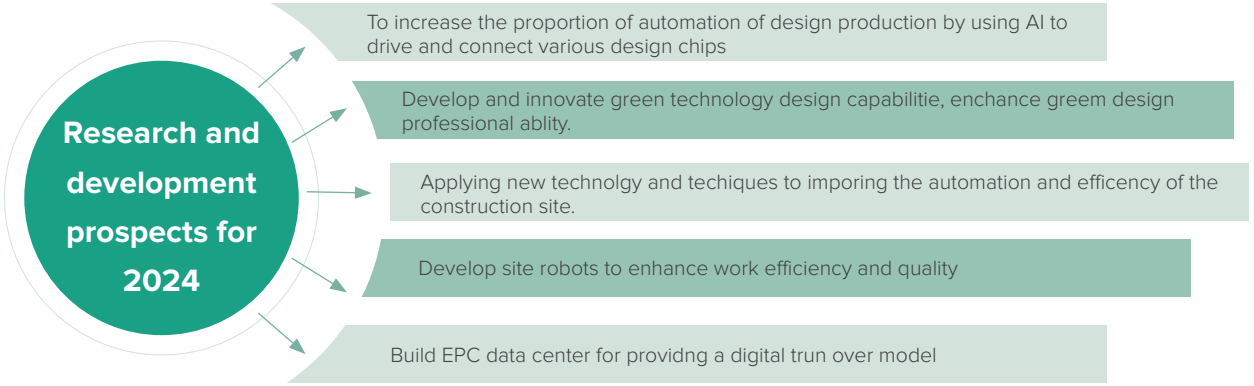
Unit: NTD

R&D category	R&D projects	Monetary amount invested				No. of employees involved			
		2020	2021	2022	2023	2020	2021	2022	2023
Process innovation	Information integration, intelligent management, mobile applications, visual applications, system transfer, and Big Data	19,431,430	39,548,446	34,736,734	32,927,436	18	24	19	20
Design technologies	Engineering technologies	7,695,468	15,232,754	15,203,914	14,347,691	7	8	6	7
	Civil engineering technologies	5,028,524	9,646,825	7,636,318	9,102,737	5	6	4	5
	Equipment technologies	12,876,264	17,561,783	12,282,343	13,293,032	10	9	4	4
	Instrument and control technologies	4,440,065	8,780,623	10,438,611	10,689,985	5	6	4	5
	Pipeline technologies	25,658,899	21,650,855	23,119,949	18,871,815	21	12	11	11
	Electrical engineering technologies	5,754,445	8,660,224	10,829,028	12,662,307	5	5	5	6
Supply chain	Equipment management, intelligent information dashboard, and logistical management	10,764,499	19,365,305	19,365,865	18,623,072	9	10	8	8
Construction technologies	Construction management, modular applications, 4D visualization, scaffolding management, mobile HSE, and warehouse management	8,787,406	4,354,185	3,519,238	3,331,925	8	2	1	1
Total		100,437,000	144,801,000	137,132,000	133,850,000	88	82	64	67

Note: Employees include R&D personnel and non-R&D personnel in the Innovation R&D Center. The development and implementation of any R&D plan require collaboration between the R&D and non-R&D staff in their respective area to complete the system or operational processes collectively.

Research and Development Prospects

CTCI adheres to the concept of innovation and leadership, and will continue to strengthen our professional skills through independent research, especially in the core competitiveness engineering design capabilities, proactively adopt new technologies, and take on new learning opportunities from academic and practical aspects to overcome future challenges. We continue to focus on adopting new technologies, integrate academic theory and practice, and the modification and innovation of procedures, in oder to respond to rapid market changes immediately, so that we can enhance our competitiveness and stay ahead in the industry.



Customer Service

Service Quality

Quality is the foundation of trust. CTCI aims for quality by striving to "do the right thing and do it right the first time." Based on ISO 9001 Quality Management System - Requirements, CTCI has developed a comprehensive quality management system, while continuing to cultivate internationalized professional quality management talents and develop information-based quality management tools. This is to prevent and address quality issues, create environmentally-friendly green engineering projects with high quality, and continuously research and improve the mechanism of quality management.

Strengthen Employees' Awareness and Compliance with Regulations/Procedures

In order to equip employees with the background, content, and expected results of newly-revised regulations and procedures, CTCI organizes "Briefings of Regulations/Procedure Updates and Announcement of Major Issues" every six months, promptly promoting the latest management and control requirements of project implementation. Briefings are presided over by the President and are supplemented with tests after briefings, which serves to strengthen colleagues' understanding of the latest regulations and procedures. As for suggestions and feedbacks made by colleagues, these will be reviewed along with the responsible unit. Then, the drafted responses will be presented to high-level executives before being announced on EIP, with all participating colleagues being notified via email. In 2023, with fewer topics that each unit needed to promote, only one briefing session was held.

Briefings of Regulations/Procedure Updates and Announcement of Major Issues of 2023

Training content	Trainees	Approach	Date	Total number of trainees who completed the training	Ratio of trainees who completed the training	Training Hours[Note]
• Promoting Regulations/ procedure revision focuses, related responsibilities and obligations, amendment history and expected outcome. • Announcement of major corporate policy or critical issues in terms of engineering technology. • Project execution experience feedback	Relevant department heads and project-level supervisors (Project Director, Project Manager, Project Engineer and the responsible personnel of project)	Classroom+ Teams Meeting	2023/1/10、2023/1/11	261	100%	783hr
		e-learning	2023/1/19~ 2023/3/10	140	100%	420hr

Note: 3.0 hours per person per session.

The President hosts the "Briefings of Regulations/ Procedure Updates and Announcement of Major Issues.

In addition, in order to effectively convey the latest project implementation and control requirements to every colleague, the agenda list, course materials and course videos will be provided to the engineering/procurement/construction departments after the briefing session is completed, and the department head will assign the courses to each staff member shall be taken. The videos and presentations of the briefing session will be uploaded to "CTCI University\ Learning Resources" for colleagues to watch on their own, and the colleagues will be informed on the EIP homepage.

Promotion of "Briefings of Regulations/Procedure Updates and Announcement of Major Issues" to Engineering/Procurement/ Construction of 2023

Training content	Trainees	Approach	Unit	Total number of trainees who completed the training		Ratio of trainees who completed the training	Training Hours[Note]	
• Promoting Regulations/ procedure revision focuses, related responsibilities and obligations, amendment history and expected outcome. • Announcement of major corporate policy or critical issues in terms of engineering technology.	**Engineering** Authorization Engineer, Lead Engineer, Check Engineer, Engineering Engineer	e-learning	Engineering	939	1,482	100%	1,209	1,804.7
	Procurement E/M Procurement Engineer, Subcontracting Engineer, E/M Inspection Engineer		Procurement	69		90.8%	62.4	
	Construction Construction Superintendent, Site Control Manager, Site Quality Manager, Site E/M Control Superintendent, Site E/M Control Engineer, Construction Engineer, Site Quality Control Engineer		Construction	451		100%	522.9	
	Sales Heads of Marking & Sales Division/ Department, Sales represenatives		Sales	23		100%	10.4	

Note: Statistics are based on the number of participants in each course unit and the number of course hours.

In addition to seminars, the Quality Management Dept. also worked with CTCI University in planning quality management related courses. The original plan was to have 108 courses in eight categories. A total of 10 courses were completed in 2023, major courses are the awareness of corporate Regulations/Procedure.

Status of the Courses on Quality Control at CTCI University

Course Type	Cumulative total number of courses	Number of online courses completed in 2023	Total number of completed courses
Quality Laws/ Regulations	2	0	1
Quality Management System	9	1	3
Corporate Regulation/ Procedure Awareness	56	9	53
Quality Management Practice	3	0	0
Quality Professional Skills	7	0	0
General Quality Management	5	0	0
Intellectual Property Protection	5	0	4
Project Operation Management System	21	0	21
Subtotal	108	10	82

Strengthen Intellectual Property Protection to Develop the Correct Awareness

With the increasingly fierce competition in the global market, major international enterprises are putting more emphasis on the management of intellectual property (IP). The protection and management of IP has become the key to enterprises' core competitiveness. CTCI has been constantly improving intellectual property management. Specific actions taken in 2023 included establishing an Intellectual Property Management Policy, enhancing the control of providing document to external parties, tracking abnormal SOP clicking, continuously conducting Group-wide IP Awareness Evaluation, and holding seminars. CTCI has conducted IP management thoroughly either in daily work or at project construction sites, and strengthened the correct concepts among employees so as to provide the most reliable services to clients.

Establish an Intellectual Property Management Policy

- Announced on 2023/07/13.
- The five intellectual property protection policies are"Implement Intellectual Property Management", "Fulfill Contractual Confidentiality Requirements", "Strengthen Awareness of Intellectual Property Protection", "Regularly Review, Evaluate and Maintain", "Continually Improve on Management and Control Mechanisms".

Enhance the control of providing document to external parties

- Colleagues submit applications through the electronic form eFlow.
- The application form will be reviewed by the department head, and then approved by the Division head of the document sponsor or the head of the QMD.
- Based on the approved eFlow form information, documents with warnings and control number watermarks will be generated.
- QMD will send documents with warnings and watermarks to the applicant.

Track abnormal SOP clicking

- Non-downloadable SOP policy adopted and read online only for employees.
- For colleagues who have an abnormal clicking, the system will proactively notify and investigation will be conducted.
- A total of 37 "sensitive document reading warnings" occurred in 2023.After investigation, all clicks are normal for business needs and there is no risk of intellectual property leakage.

Continuously conduct Group-wide IP Awareness Evaluation

- The manager evaluation is focused onthe "requirements of regulations/procedures", "supervisor's responsibilities", and "points that supervisors tend to overlook".
- The employee evaluation is focused on the "requirements of regulations/procedures", and "common mistakes made by colleagues".
- Conducted evaluation through CTCI University,total 73 managers and 3,089 employees passed test.

Hold Seminars

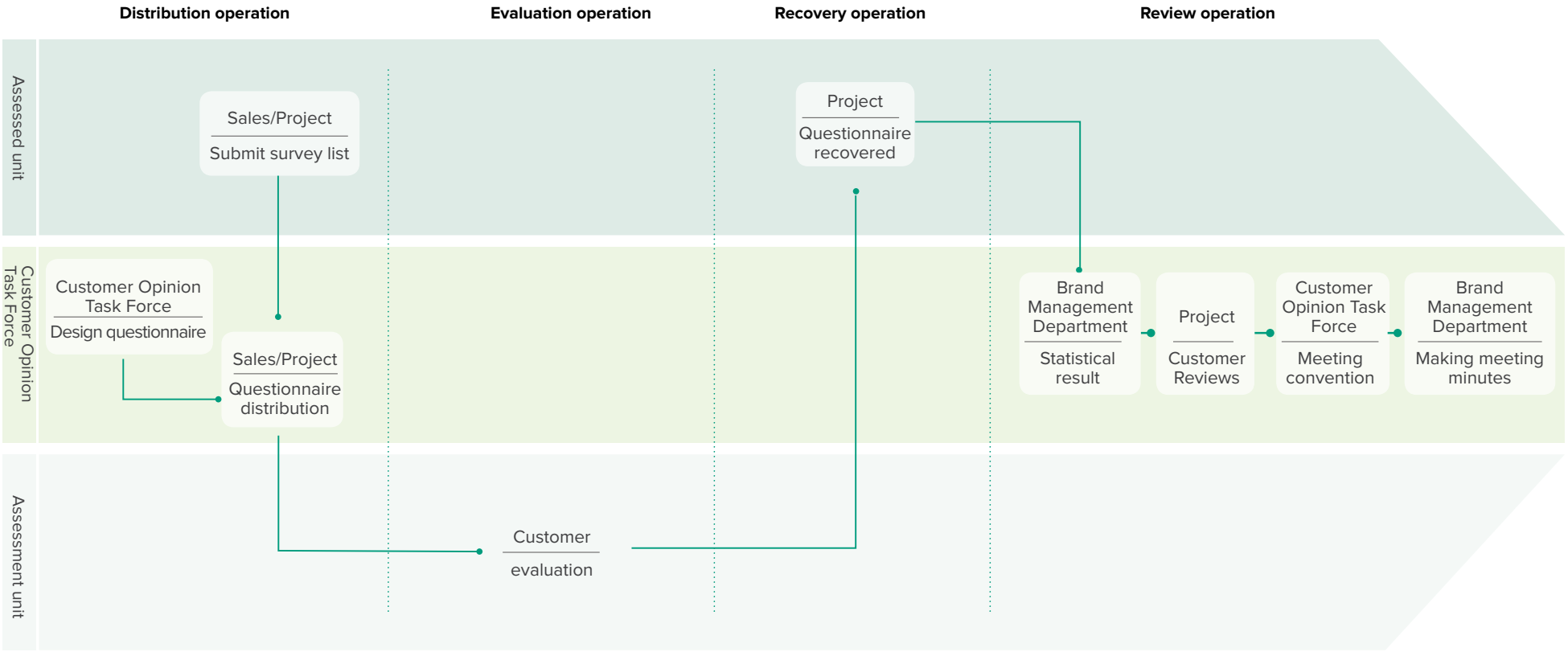
- Held "Intellectual Property Management" seminars.
- Shared insights on "overview and strategic deployment of intellectual property rights", "litigation strategies for trademarks, patents, and trade secrets" and "intellectual property protection and infringement issues related to engineering performance". A total of 38 people participated.

Customer Satisfaction

CTCI collects customer opinions through a variety of channels in order to understand customer needs. For example, the sales units visit clients whose projects are in progress every six months to strengthen customer communication and relationship management, responding and solving problems immediately; after the projects enter the warranty period, if customers have service requirements or suggestions, they will be entrusted to the dedicated department for processing as soon as possible. The Company also continues to track and control the progress of various tasks that need to be completed during the warranty period to improve service quality.

CTCI conducts the annual customer satisfaction survey to assess various satisfaction indicators, which serve as important references for service quality improvement. The "Customer Opinion Task Force," led by the President and comprised of cross-departmental members, reviews the survey results, proposes improvement suggesstions that will be conducted by each responsible unit, and ensures that the service quality meets customer expectations. Additionally, an internal satisfaction survey is conducted by the project manager to assess each engineering department. The internal survey results are then compared with customer satisfaction results to further understand and satisfy the needs of each project from the inside out, in order to improve service quality.

Customer satisfaction survey process flow chart

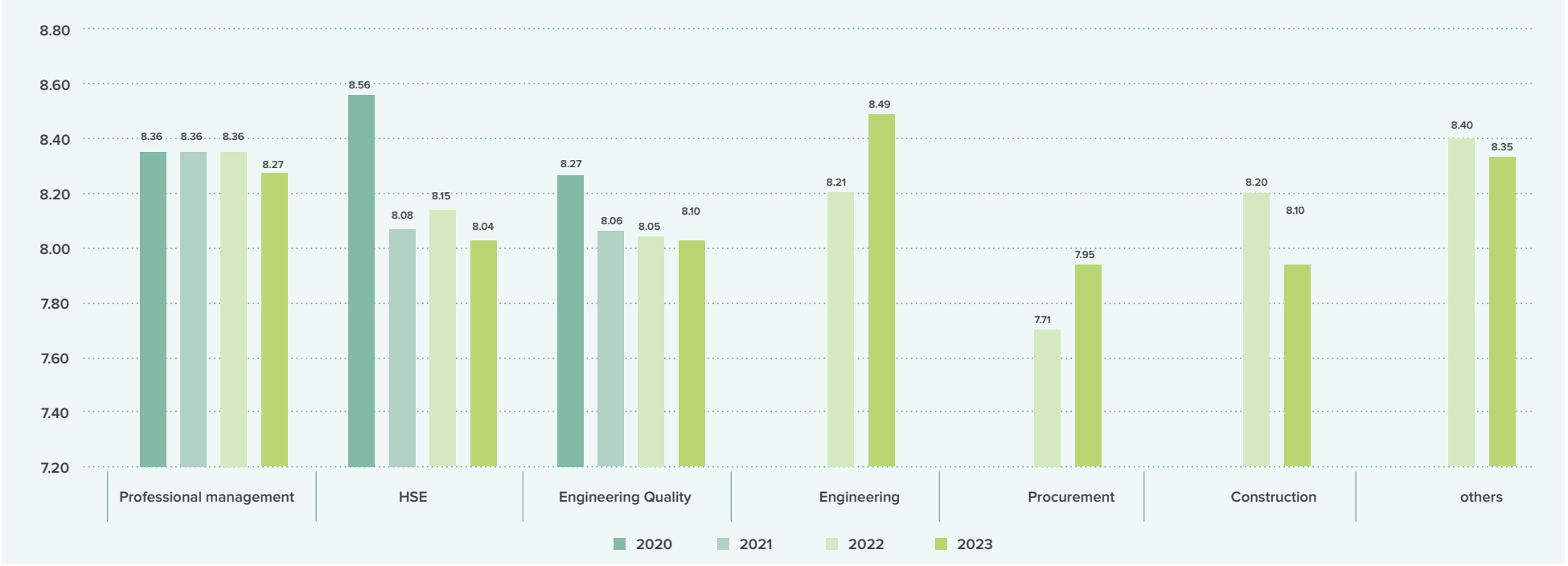


To enhance customer service operations, starting in 2022, CTCI adjusted the structure of the satisfaction survey questionnaire, adding sections of "Engineering Design," "Engineering Procurement," "Engineering Construction," as well as the "Others" secton covering electronic document management and information technology application, intellectual property protection and management, and performance in sustainability (ESG) with the annual target of 8 points. In 2023, CTCI conducted customer satisfaction surveys for 24 projects, achieving a 100% response rate. Customers gave an average score of 8.20 on a scale of 1 to 10. Among them, the satisfaction rating of "ESG performance" in the "Others" group acehieved an overall score of 8.50. Moreover, projects classified as green engineering have a satisfaction rating of 8.26, showing that customers are not only concerned about CTCI's ESG performance, but gave high recognition to it. All customer ratings and feedbacks of the year have been reviewed in detail and improvement measures have been formulated.

Results of external customers satisfaction survey from 2020 to 2023

	Professional management	HSE	Engineering Quality	Engineering	Procurement	Construction	others	Average score
2020	8.36	8.56	8.27	-	-	-	-	8.29
2021	8.36	8.08	8.06	-	-	-	-	8.17
2022	8.36	8.15	8.05	8.21	7.71	8.20	8.41	8.16
2023	8.27	8.04	8.10	8.49	7.95	8.10	8.33	8.20

Others: Electronic management of documents and application of information technologies, protection and control of intellectual property (IP), and ESG performance



In addition to the aforementioned survey scores, further analysis was conducted on projects with safisfaction scores over 7.5, totalling 18 projects in 2023 that accounted for 75% of the 24 projects surveyed. Moreover, these 24 projects generated 36.05% of the total revenue. The decrease in this proportion compared to the previous year is primarily due to several long-term surveyed projects being in the final stages, while new projects are mostly in the early design phase and have not yet entered the procurement and construction stages. Consequently, these new projects were not qualified for survey and were excluded from the survey list, resulting in a lower coverage rate of revenue compared to the previous year.

Customer Satisfaction Survey	2020	2021	2022	2023	Satisfaction Target of 2023
Percentage of customers with satisfaction over 7.5 points (%)	82.61%	68.18%	80.00%	75.00%	80.00%
Total Itemized Revenue Coverage (%)	61.70%	66.32%	45.73%	36.05%	

Satisfaction: Number of satisfied (≥ 7.5) projects / Total number of projects responding to the survey. Coverage: Revenue of project being surveyed / CTCI revenue of the year

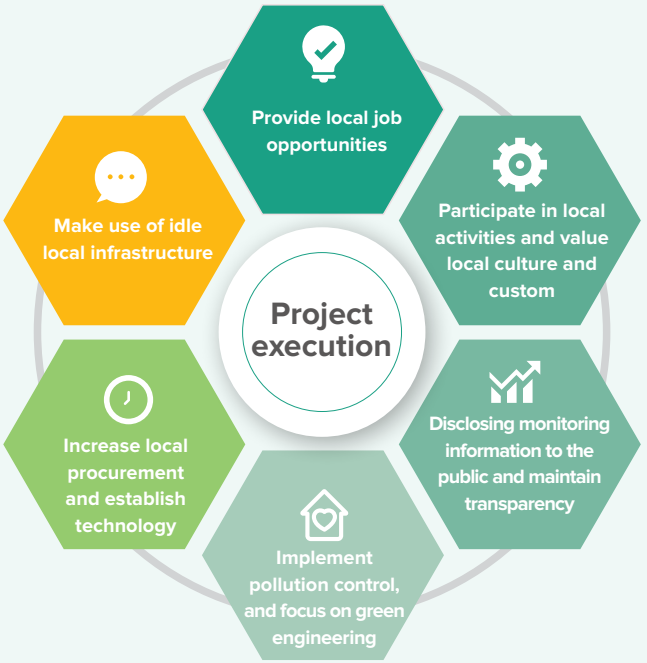
Project Evaluation

CTCI executes various projects with the philosophy of "Professionalism, Integrity, Teamwork, and Innovation" and the vision of being "the most reliable global engineering services team." The project team evaluates project risks in accordance with the Company's project risk management procedures and the project risk management flow chart (as below), which includes reviewing the tender documents to understand the responsibilities and obligations involved in contract performance, identifying risk events that may have a positive or negative impact on personnel, environment, assets, society and culture, project cost and schedule, analyzing and evaluating their impact and establishing countermeasures. The project risk impact assessment and countermeasures are reported to the Company's management team at the price review meeting, which includes public attitudes towards the project and its possible concerns and doubts, countermeasures to be taken and its impact on the competitiveness to ensure that the project can be implemented.

In terms of various local risk response planning strategies for various projects, CTCI has been proactively communicating and interacting with the public on relevant mitigation measures for potential impacts. In this way, CTCI can clear up their doubts, build a close relationship with the local community, and continue to engage in community discussions and impact evaluations. For example, if nearby residents and stakeholder groups have compliants about the execution of the project, they can immediately contact the site manager, full-time construction personnel, or occupational safety and health personnel. The responsible personnel will repond to those compliants in a timely manner or work with other departments to address their concerns in an effectively way, ensuring the smoothiness and effiency of the grievance procedure during project execution.

Referring to the strategy diagram shown aside, during project execution, it is important to coordinate public meetings, prioritize the local ecological environment, respect the cultural and religious customs of different regions, and address potential impacts through appropriate communication with professional, innovative technical capabilities and integrity. Along with information utilized, relevant environmental monitoring should also be conducted and be offered to the public for them to understand and supervise. Additionally, job opportunities should be provided, local procurement increased, and local resources utilized to avoid potential risks and promote harmonious coexistence and mutual development between the project and the local community.

Diagram of Risk Response Strategies and Plans for All Project Locations



Taking the EPCC project of CPC third LNG receiving terminal tank contracted to CTCI for example, the project plays a crucial role in ensuring the stability of the country's power supply, reducing air pollution, and achieving energy saving and carbon reduction goals. It also contributes to ecological conservation and is one of the key projects for the government's national energy transition. During the project execution peiod, CTCI had to overcome challenges including the super strong northeast monsoon near the sea, COVID-19 pandemic and severe labor shortages throughout Taiwan. CTCI adheres to the mission of "To Satisfy Our Customers with Optimized Engineering services", the engineering project execution capability to actively realize the vision, and the efforts and dedication of the engineering team to overcome multiple challenges, to complete the project successfully step by step. This project also won the honor and recognition of the 23rd Public Construction Golden Quality Award in 2023.

This project focuses on energy saving and environmental protection by using high-efficiency lighting and energy-saving equipment to reduce energy consumption. It also uses concrete with adjusted proportions that comply with regulations and environmental requirements, significantly reducing carbon emissions. The project also utilizes nitrogen piston flow technology for tank drying and nitrogen sealing, which not only saves a considerable amount of liquid nitrogen but also reduces carbon emissions from the electricity consumption associated with liquid nitrogen production. Through the effective use of various energy-saving and environmental protection measures and technologies in each stage of engineering, procurement, and construction, the amount of carbon emissions has been effectively reduced, which is equivalent to the annual carbon absorption capacity of approximately 28 Daan Forest Parks.

The ecological protection of algae reefs, which is of great concern to the public, is also the priority of the execution of this project. During the construction period, the runoff wastewater was recycled without discharge to maintain the ecology of the algae reef waters; the breeding base of Little Tern was also set up to improve the success rate of breeding Little Tern. During the period of project execution, the quarterly environmental monitoring and the ecological survey report from Taiwan CPC Corporation showed that the population of Polycyathus Chaishanensis had increased significantly, and the natural breeding rate of Tern had also greatly increased. The relevant environmental protection measures and various conservation actions adopted for this project have gradually demonstrated effectiveness as the construction project progresses.

In addition, CTCI maintained a positive attitude and kept interacting and communicating with the local and the public during the period of project execution. CTCI explained the possible impacts and corresponding mitigation measures on issues of public concern, so as to relieve the public's doubts, build closer relationships with the local community and the public. For example, during project execution, CTCI worked with social welfare groups and participated in charity sales to continuously help the local community. CTCI also took part in local events, donated supplies, hired local workers, and integrated into local life. Furthermore, school and group visits have been organized, during which the senior professionals shared their insights and interacted with visitors to bridge the gap between the project team and the local community and students, demonstrating the project's role and CTCI's corporate characteristics in order to maximize social impacts.

By replacing coal-fired power generation with natural gas during the promotion and execution of this project, it not only greatly improved the air quality, but reduced carbon emissions, serving as a necessary key engineering project for the nation’s energy transition and for moving towards net-zero.

CTCI Group has been working in various engineering fields at home and abroad for more than 40 years, providing professional and reliable engineering services for various industries, covering oil refining, petrochemical, liquefied natural gas, power, general industry, environmental resources, advanced technology facilities, transportation and other professional services. In the future, we will continue to practice the concept of sustainability and fulfill the spirit of corporate social responsibility through various engineering professional services.

Brand Management

Building the Most Reliable Global Engineering Brand

CTCI strives to create the most reliable global engineering brand with its "Most Reliable" brand spirit. The Group's Brand Management Department is dedicated to enhancing CTCI's communication capabilities with global markets, while bringing together nearly 50 subsidiaries to polish the CTCI brand and contribute to the company's sustainable growth.

Following the brand development strategy blueprint, CTCI has actively launched a series of brand marketing plans and activities. With everyone's efforts, the results have been remarkable. For example, CTCI received coverage from prestigious media such as The New York Times, ENR Engineering Magazine, CommonWealth Magazine, Global Views Monthly, Harvard Business Review, Business Weekly, Manager Today, Economic Daily News, Industrial and Commercial Times, and CommonWealth Sustainable Future Podcasts, showcasing CTCI's unique selling points and operational achievements. Additionally, CTCI has earned numerous domestic and international recognitions and awards, including the authoritative REBRAND 100® Global Awards, In 2023, the Company was ranked 21st in the list of “Best Taiwan Global Brands” by Interbrand, an international authoritative brand value survey organization, with a brand value of US$95 million; CTCI also secured the "Distinguished Project Award" and the "Outstanding Project Leader Award" at the Project Management Institute's (PMI) awards, as well as HBR's “Digital Transformation Breakthrough Award” and the "Digital Transformation Leadership Award" for two consecutive years. These accolades have significantly enhanced CTCI's global recognition and brand awareness.

Furthermore, in the prestigious international engineering magazine ENR's rankings, CTCI has ranked among the top 100 in "International Contractors" and "International Design Firms" for eight consecutive years. In 2023, CTCI ranked 55th among international engineering contractors, breaking its previous record and demonstrating its successful expansion in the international market. Domestically, CTCI ranked first in the engineering contracting category in CommonWealth Magazine's 2023 Top 2000 Enterprises Survey, and among the top 5% in the overall ranking of the 650 largest service companies. In addition, CTCI continued to be named one of the top 100 companies in the 2023 edition of "Enterprise Study of Taiwan’s Large Groups” by China Credit Information Service, a CRIF company, solidifying CTCI’s position as the EPC leader in Taiwan and among the top 100 worldwide.

In terms of ESG sustainability, CTCI has been selected as a component of the Dow Jones Sustainability Emerging Markets Index for nine consecutive years, with the overall performance ranking first in the global construction and engineering sector. CTCI also ranked in the top 1% by S&P Global in its Sustainability Yearbook, and is selected as a component of the Taiwan Sustainability Index (TWSI). In addition, CTCI has received the “Excellence in Corporate Social Responsibility Award” by CommonWealth Magazine, and secured the highest honor “Top 10 Domestic Companies Sustainability Model Award” in Taiwan Corporate Sustainability Awards (TCSA) selections. When competing for the first time, CTCI won the National Sustainable Development Award from the National Council for Sustainable Development of the Executive Yuan, the nation’s highest honor in sustainability. In 2023, CTCI further won the "Parenting- Friendly Workplace Award" by CommonWealth Magazine, successfully shaping a brand image of being the sustainability model in the engineering industry.

Distinctive Brand Image and Media Communication

As the media environment becomes increasingly complex due to digitalization, actively building corporate reputation and brand image has become a necessary response for international enterprises. In 2022, CTCI launched the "CTCI Distinctive Brand Image and Media Communication Project," establishing "Guardians of Earth's Sustainability" and "Green Engineering" as the main communication themes, formulating marketing strategies and objectives, and strengthening digital marketing and self-media operations to enhance stakeholders' perception and recognition of the CTCI brand. In 2023, CTCI's official social media accounts demonstrated impressive growth. On LinkedIn, CTCI posted 85 updates, with a 44.8% increase in followers, an 839% increase in impressions, a 2,281% increase in unique visitors, and an average monthly growth in organic engagement rate of 15% compared to 2022. On Facebook, CTCI posted 87 updates in 2023, with a 235.5% increase in followers, a 501.6% increase in reach, a 274.8% increase in visitors, and a 4,000% increase in engagement compared to 2022. Additionally, CTCI continues to establish long-term and smooth two-way communication with external media, strengthening marketing channels, such as creating domestic and international media databases and setting up CTCI news release Line groups, inviting industry-related media to join. CTCI hopes to actively release press releases and regularly plan news stories or interviews on brand, leadership, industry trends, and ESG topics, effectively combining internal and external media resources to successfully shape CTCI's professional brand image and good reputation.

Furthermore, to support global business expansion, CTCI actively seeks international media exposure opportunities, continuously promoting submissions to international engineering journals, brand image advertising, international exhibitions, and forum participation, among other brand marketing activities, to enhance CTCI's international visibility and recognition. Taking 2023 for example, the total exposure rate of domestic and foreign media grew 126% compared to 2022.

i-Branding through Digital Innovation

Increase video/audio marketing

Publish video posts about CTCI's profile, major events, executive interviews/talks or

in-house video programs such as "Engineering Fun" on social media (LinkedIn/Facebook/YouTube) to increase brand awareness.

Collaborate with digital media

Leverage the power of digital media by collaborating with CommonWealth Podcast or famous KOLs to design program series, as a way of polishing CTCI's professional image.

Plan online exhibitions

Extend the marketing shelf life of offline exhibitions that CTCI participates in, such as SDGs Asia and SEMICON Taiwan, by bringing them online through showcasing exhibition materials on Group website or social media.

Implementing Corporate Culture to Reflect Brand Spirit

CTCI understands that to successfully establish an internationally renowned brand image, it cannot solely rely on slogans or external changes. Instead, it requires the collective effort and dedication of the entire Group. To instill CTCI's corporate culture of "Professionalism, Integrity, Teamwork, Innovation" into the DNA of over 8,000 colleagues worldwide and ultimately reflect the "Most Reliable" brand spirit, the Company continuously plans and organizes corporate culture-related activities, promoting brand acceptance from brand awareness among all employees, and adds special activites of experiencing the corporate culture during new employee training courses. As for talent recruitment, hiring standards of each department have been established based on the corporate culture, combined with career aptitude tests and structured interviews, ensuring that applicants possess the personality that suits the corporate culture. Additionally, by integrating the corporate culture into the performance appraisal, the former is further amplified among employees.

Corporate culture-related activities in 2023

(October 2017 ~ Ongoing

The Journey of Reliability

- Digital Course: Supervisor Class /Staff Class
- Inrenal Lecturer Training
- The Journey of Reliability Workshop

April ~ May, 2023

CTCI & ME Culture Special Search Team

Capture the CTCI Corporate Culture through your photo.

Take photos base on the our corporate culture.

Nov. ~Dec., 2023

Team Appreciation Week

As the year comes to a close, a token of gratitude, a thousand-fold return!
Join our Employee Appreciation Week event together and Let's together spread love and gratitude to every colleague in the Group

Through the implementation of the corporate culture, CTCI hopes to shape the “Most Reliable” brand image in the market, further strengthening the overall competitiveness of the Group and expanding the global business. Looking into the future, CTCI will continue polishing its brand for sustainable development in an increasingly competitive global market.

Sustainable Supply Chain Management

CTCI's Value Chain

The operation core of CTCI is EPC turnkey engineering service. Its customers include high-tech, petroleum refining, petrochemical, chemical, natural gas, electricity, transportation, steel, environmental engineering and other industries. In the process of providing services, we need to understand the needs of customers, and at the same time have a high level of professionalism in all materials, equipment supplies, construction standards and specifications, etc., and meet the goals in terms of quality and construction progress, so that projects can be completed on schedule and in quality. We combine the needs of customers in the upstream of the value chain, the professional services of CTCI, and the third parties in the downstream of the value chain to form a complete value chain and provide customers with comprehensive and comprehensive services.

Supply Chain Overview

The Company's customers are located all over the world, and the industry difference of customers is great, so the source of suppliers is relatively complicated. In order to efficiently oversee our extensive and intricate supply chain, we classify suppliers into the following six categories: service providers, equipment, instrumentation, piping, electrical, and others. An additional classification is established according to transaction amounts, whereby the tier 1 suppliers are defined as the top 95% by cumulative annual transaction amounts. Moreover, suppliers whose annual transaction volumes surpass $3 million USD or who are deemed high-risk [Note1] are categorized as significant suppliers in tier 1, thereby requiring heightened managerial scrutiny. To mitigate risks in the overall supply chain [Note2], we also manage suppliers who are not classified as significant suppliers in tier 1. We utilize the significant suppliers in tier 1 to autonomously manage the sustainability risks of their suppliers. If a high-risk is identified, we initiate on-site assessment for significant suppliers in non tier 1.

[1] Suppliers that have passed the Self-Assessment Questionnaire (SAQ) and identified one of the economic, environmental, or social risk factors and have not obtained the ISO 14001 and ISO 45001 system verification certificates.
[2] Suppliers of significant suppliers in tier 1, among which are the top five suppliers by transaction amount.

Regions where suppliers are distributed in 2023

	Number of suppliers	% of procurement amount
Asia	493	98
America	1	1
Europe	10	1
Total	504	100

Classification of Tier 1 suppliers in 2023

		Number of suppliers	% of procurement amount
Suppliers of Material / Equipment	Equipment	19	5.2
	Instrumentation & Control	3	0.6
	Pipeline	11	2.7
	Others	13	6.6
	Electrical engineering	10	9.6
Subcontractors		84	75.3
Total		**140**	**100**

Supplier Level in 2023

	Number of suppliers	% of procurement amount
Tier 1 suppliers	140	95%
Significant suppliers in Tier 1	44	76%
High-risk suppliers	3	-
Significant suppliers in non Tier 1	81	-

Note: Significant suppliers in tier 1 are included in tier 1 suppliers.

Supply Chain Governance

CTCI is well aware that it is critical to establish a stable cooperative relationship with suppliers. Therefore, we are actively involved in the Supply Chain Sustainability Management, and continue to refine related practices with systematic systems and processes. To implement Supply Chain Sustainability Management, we have formulated the supply chain sustainability policy as the guiding principle. It is also up to the Board of Directors to decide the direction of the supply chain to ensure that the supply chain's implementation direction and practices are aligned with the Company's sustainability efforts.

Our Commitment

Supply Chain Sustainable Development Policy

CTCI attaches great importance to the partnership with suppliers, and expects suppliers to gradually move towards sustainable development. Therefore, we have formulated a supply chain sustainable development policy as a direction for suppliers to follow, not only to cover basic construction safety, but also integrity management, employee rights, climate, and ecological actions, etc., and encourage the supply chain to move toward the goal of sustainability.

CTCI Supply Chain Sustainable Development Policy

Construction safety	● All construction site contractors must comply with safety, health, and environmental regulations, and the Company's safety, health, and environmental policies are promoted with the contractors in order to implement the safety, health, and environmental requirements and jointly create a safe and healthy workplace; A safety briefing meeting is held daily before work starts.
Business integrity	● Legal compliance: The Company shall submit a suspended supplier list (based on the list of denied suppliers published on the Public Construction Commission's e-procurement website) of suppliers on a quarterly basis. Suppliers on this suspended list shall not be used. ● Reporting website of third-party impartiality unit: Suppliers will be notified at the quotation stage. If there is any potential unfairness or violation of laws and regulations, they may be reported directly.
Employee rights	● For the contractors accessing the construction site, it is required that their employees have labor and health insurance before they can enter the site for construction. CTCI also insures the construction works undertaken with accident liability insurance to protect the rights and interests of employees and those of the contractors.
Climate and ecological action	● Net zero emissions: CTCI is organizing the "Net Zero Supplier Alliance" to drive the overall supplier to reduce carbon emissions and build a low-carbon value chain. The Company will become a pioneer in the domestic turnkey engineering industry carbon reduction alliance. ● Local procurement: For goods and vendors, if they can be purchased locally, the Company will never purchase externally, to increase local employment rate and reduce the carbon footprint of transportation. ● Biodiversity: CTCI requires suppliers to commit to, assess, and disclose their reliance on and impacts on local and global biodiversity. In addition to committing to zero deforestation, CTCI also uses the "Supply Chain Biodiversity and Natural Environment Significance Survey Questionnaire" to understand the current status of suppliers and potential risks.

Governance Framework

To ensure that sustainable supply chain management aligns with the company's direction for sustainable development, significant supply chain matters are decided by the Board of Directors. This includes formulating the supply chain sustainable development policy, setting medium and long-term goals, and action plans. The execution and progress of supply chain-related activities are supervised by the board's functional committee - ESG and Net Zero Team.

Supply Chain Management Organization

Supply Chain Sustainability Management Mechanism

CTCI has formulated a complete Supply Chain Sustainability Management mechanism as the basis for implementation. We have established four major steps, from requiring suppliers to follow sustainability regulations, conducting risk assessments and audits, and assisting suppliers in improvement and capacity building. We aim to improve our suppliers' sustainability performance and capabilities and build a responsible and resilient supply chain.

CTCI has developed a comprehensive Supply Chain Sustainability Management Mechanism. As a basis for driving this initiative, we have established four major steps to ensure alignment of our suppliers with procurement practices and supplier behavior guidelines, while also avoiding potential conflicts with ESG requirements. This is aimed at continuously enhancing supplier sustainability performance and capabilities, thus build a responsible and resilient supply chain.

Supply Chain Sustainability Management Mechanism

Sustainability standards

- **Vendor Code of Conduct:** The content includes labor, the environment, business ethics, safety and health, and management systems, etc., and all suppliers are required to abide by and sign
- **Vendor's Commitments to Corporate Sustainable Management and Net Zero:** All vendors are required to comply and sign

Sustainability risk evaluation

- **Suppliers screening:** Conduct investigations on all suppliers based on environmental, social, governance, business relevance, country/region, industry, product and other aspects to understand potential risks
- **Suppliers assessment:** Supplier risk assessment with self-assessment questionnaire to identify suppliers with higher sustainability risk
- **On-site evaluation:** On-site factory visits are conducted to evaluate suppliers. In addition to the seven major supplier evaluation factors, the evaluation factors also include price, delivery date, country of origin, export port, and integrity management status. Among them, the sustainability factor accounts for 15%

Sustainability assessments

- **Desk assessment：** Through self-assessment questionnaires, relevant supporting information is collected simultaneously to conduct supplier written risk assessment
- **On-site assessment:** High-risk suppliers are audited using a combination of the two or the three methods. On-site audits are conducted with reference to the RBA (Responsible Business Alliance) code of conduct to ensure risk status

Coaching for improvement/ Capacity building

- **Defect improvement and counseling:** Suppliers are required to rectify deficiencies after auditing. Suppliers are also provided with counseling and improvement suggestions. The CAP contents are also reviewed to ensure rectification has been completed
- **Elimination mechanism:** On-site assessment and counseling are conducted for high-risk suppliers in the following year to ensure that their risks can be effectively controlled and reduced. If a supplier fails to improve and remains classified as high-risk for three consecutive years, procurement quotas may be reduced, price inquiries suspended, and reinstatement granted upon submission of evidence
- **Capacity building:** In order to more effectively and substantially enhance the sustainability and net zero capabilities of suppliers (including equipment suppliers and third parties), CTCI Supplier has joined the government counseling program or through on-site counseling and other collaborative models building suppliers' carbon management capabilities

Sustainability Standards

Vendor Code of Conduct

In order for suppliers to align with the CTCI in the pursuit of sustainable development, the Group has established the " CTCI Vendor Code of Conduct " and the " Vendor's Commitments to Corporate Sustainable Management and Net Zero " with reference to the international sustainability trends and related initiatives and requirements. The standards and the commitments apply to all suppliers (including new suppliers) and their subsidiaries, affiliates and contractors, as well as suppliers of goods or services to the CTCI, with respect to labor, environment, business ethics, safety and health, and management systems All aspects are regulated. Through the Code, we hope that our suppliers will be able to convey the relevant requirements of sustainability to their suppliers, keep track of their compliance status, and work together to promote the sustainable development of the industry chain. By the end of 2023, all suppliers of CTCI have signed the agreement.

In 2022, in response to global climate issues, responding to biodiversity and achieving the net zero target, the "Corporate Sustainable Operation Commitment" was revised as the "Corporate Sustainability and Net Zero Commitment." Greenhouse gas emissions, and assess the impact on biodiversity to reduce related risks. By the end of 2023, 3,042 new suppliers have signed the commitment, with a signing rate of 100%.

"Vendor Code of Conduct " and " Vendor's Commitments to Corporate Sustainable Management and Net Zero "

1. Labor and Human Rights	2. Safety and Health	3. ENVIRONMENTAL	4. ETHICS	5. MANAGEMENT
☐1.1 Freely Chosen Employment	☐2.1 Life Saving Rules	☐3.1 Environmental Permits and Reporting	☐4.1 Business Integrity	☐5.1 Management Accountability and Responsibility
☐1.2 Child Labor Avoidance	☐2.2 Occupational Safety	☐3.2 Pollution Prevention and Resource Reduction	☐4.2 No Improper Advantage	☐5.2 Legal and Customer Requirements
☐1.3 Working Hours	☐2.3 Occupational Health	☐3.3 Hazardous Substances	☐4.3 Disclosure of Information	☐5.3 pisk nsetsment and Risk Management
☐1.4 Wages and Benefits	☐2.4 Behavior-Based Safety	☐3.5 Exhaust Emissions	☐4.4 Intellectual Property	☐5.4 Improvement Objectives
☐1.5 Humane Treatment	☐2.5 Emergency Preparedness	☐3.6 Net Zero	☐4.5 Fair Business, Advertising and Competition	☐5.5 Training
☐1.6 Discrimination	☐2.6 Occupational injury and Iliness	☐3.7 Biodiversity and zero deforestation	☐4.6 Privacy	☐5.6 Audits and Assessments
☐1.7 Freedom of Association			☐4.7 Responsible Sourcing of Minerals	☐5.7 Corrective Action Process
			☐4.8 Conflict of intereste	☐5.8 Documentation and Records

Sustainability Risk Investigation

After all supplier registration information, we proactively review the basic information and assess the risk status, including business license, tax payment certificate, company profile, project performance, quality and safety, health and environmental certification, and sustainability factors (human rights, environment, and business governance, etc.) , we first visit factories in specific regions (such as China and India) based on the geographical location and procurement category to understand and grasp the potential risks of each supplier.

To assess the sustainability risk situation of suppliers and the implementation of their sustainability practices, CTCI has established a two-stage supplier risk assessment. By actively conducting investigations and distributing sustainability risk self-assessment questionnaires, CTCI identifies potential risks among suppliers. Further audits and guidance for improvement are then carried out to reduce supplier risks and enhance their ability to respond to risks.

Suppliers Screening

CTCI conducts proactive investigations using various screening dimensions and methods. The screening dimensions include business relevance and potential negative impacts on environmental, social, and governance aspects. The screening methods assess country-specific risks, industry-specific risks, and product-specific risks. By evaluating these dimensions, CTCI aims to implement preliminary risk control at the earliest stage.

Aspects of proactive investigation	Evaluation Content
Environment	• Records of violations against environmental-related laws. • Potential negative environmental impacts, such as the lack of environmental certifications such as ISO 14001, absence of relevant environmental permits; unreported or unapproved processes/materials/pollutants.
Society	• Records of violations against social-related laws. • Potential negative social impacts, such as investments involving human rights controversies, employment of child labor, and forced or compulsory labor.
Governance	• Records of violations against governance-related laws • The use of raw materials sourced from conflict regions.
Business relevance	• Supplier procurement amount and quantity. • Whether the products or services provided by the supplier are unique, making them the exclusive supplier and irreplaceable. • Whether the supplier has relevant track records in refining & petrochemicals, infrastructure, and high-tech industries.
Country/Region	Based on the supplier's location, include identification and control of high-risk factors (including but not limited to political, conflict, crime, health, and natural disaster factors), enhance pre-delivery inspections, and conduct site survey as necessary to mitigate risks. Depending on the procurement category, conduct site survey in specific regions (such as China, India, etc.).
Industry	• For suppliers of material/equipment and subcontractors, different evaluation criteria are established to identify specific risks in different industries. For example, energy-intensive manufacturers that have not developed energy management and greenhouse gas reduction plans, or subcontractors providing manpower services that violate labor laws, resulting in damage to workers' rights.
Product Type	• Screening of bulk raw materials that may pose a risk, such as using conflict minerals as raw materials, wood without FSC/PEFC/SFI/CSA certification, or hazardous substances. • Vendors that meet the specific product certification requirements, if they do not have the TS certification for explosion-proof electrical equipment in Taiwan.

As the sustainability benchmark of the industry chain, CTCI not only requires basic quality, cost, delivery, service, and technology, but also incorporates sustainability factors included into the scope of qualification assessment. For key equipment manufacturers, before placing an order, on-site factory evaluations are conducted. In addition to the proactive investigation aspects mentioned earlier, evaluation factors also include price, delivery time, country of origin, port of export, and company integrity. Among these factors, sustainability (including social, environmental, and governance aspects) accounts for 15%, aiming to enhance the sustainability competitiveness of suppliers through relevant requirements.

Suppliers Assessment

To further understand the sustainability risks within the supply chain, CTCI distribute Sustainability Risk Assessment Self-Assessment Questionnaires (SAQs) to our Tier 1 suppliers. The content includes eight major sustainability dimensions, which are also aligned with international trends, incorporating content related to carbon reduction and biodiversity. Suppliers are required to provide corresponding supporting documentation to further confirm their specific sustainability actions.

Aspects of the Self-Assessment Questionnaire

A Environmental considerations
- Exhaust gas emission
- Effluent discharge
- Hazardous industrial waste (waste liquid) Poisonous
- compound Environmental
- Management System Environmental
- Protection Unit/ Personnel Environmental
- Protection Permit Work suspension or
- penalty

B Environmental management
- Materials
- Water resources
- Effluents and waste
- Environmental performance of the next tier suppliers

C Management system for occupational health and safety
- Statutory
- Dangerous and Hazardous Substances
- Dangerous machinery and equipment
- Occupational disaster
- Safety performance
- Management plan for occupational health and safety
- Safety and Health Work Principles
- Management system for occupational health and safety

D Working conditions
- Hiring employees
- Employee salaries
- Working hours
- Working hour management
- Labor/ management relations
- Forced Labor
- Legal compliance Healthy Workplace Promotion
- Labor Grievance Mechanism
- Evaluation of the working conditions of the next supplier

E Human Rights
- Investment
- Non-discrimination
- Employees' Freedom of Association
- Employees' right to collective bargaining
- Child Labor
- Forced and Compulsory Labor
- Safety Practices
- Rights of local residents
- Human Rights Grievance Mechanism
- Human rights assessment of next-tier suppliers

F Social impact
- Anti-bribery
- Anti-competitive Behavior
- Social Impact Grievance Mechanism
- Social impact assessment of next-tier suppliers

G Business governance
- Corporate governance
- Compliance with laws and regulations
- Risk Management
- Debt ratio
- Business continuity plan
- Information Security
- Management and control of business governance by the next tier suppliers

H Greenhouse gas reduction
- CTCI Supplier Net Zero Alliance
- Greenhouse Gas Inventory
- Natural ecology

Self-Evaluation Questionnaire

	Number of suppliers replied	Reply rate (%)
Tier 1 suppliers	128	91
Significant suppliers in Tier 1	44	100
Significant suppliers in non Tier 1	81	100

Note: Significant suppliers in tier 1 are included in tier 1 suppliers.

Results of Supplier Assessment

Through SAQ surveys, suppliers with potential economic, environmental, or social risk factors who have not obtained ISO 14001 and ISO 45001 management system certifications are identified as high-risk suppliers. In 2023, a total of three high-risk suppliers were identified. On-site assessments and counseling were conducted for these high-risk suppliers during the current year to ensure that risks are effectively controlled and mitigated. For these high-risk suppliers, CTCI has proposed the following response measures to assist them in making improvements.

Aspect	Risk factor	Number of suppliers	Countermeasures
Economic risk	No risk-control units, no response and program.	6	Make sure the suppliers understand the importance of such risk and provide improvement suggestions, such as establishing a part-time or full-time risk management unit.
Environ-mental risk	The Company does not have an environmental management system and does not record and control energy, water, sewage, and waste	1	Make sure the suppliers understand the importance of such risk and provide improvement suggestions, such as establishing environmental management related procedures, and record and control energy and resource use; strengthen occupational safety promotion and formulate occupational safety and health principles
Social risk	• Previous history of occupational incidents, failing to provide safety performance, and failing to create occupational helath and safety rules. • High percentage of contracted employees; forced labor; failing to promote a healthy and non-discriminative workplace; employees lack freedom of association and the right to negotiate with their company collectively	10	Make sure the suppliers understand the importance of such risk and provide improvement suggestions, such as strengthening work safety communication and creating occupational helath and safety rules; reducing the percentage of contracted employees, allowing more freedom of association for employees, and convene a labor-management meeting to provide clear channels for employees to voice grievances.

Supplier Performance Evaluation

To ensure that the equipment supplied by CTCI's suppliers and subcontractors, as well as the design, construction, and fabrication work undertaken by them, meet client requirements in terms of quality, safety, environmental protection, price, and delivery time, evaluations will be conducted after project completion on equipment suppliers and subcontractors in accordance with the "Project Supplier and Partner Performance Evaluation Procedure." In 2023, CTCI conducted a total of 315 evaluations, including 201 for suppliers and 114 for subcontractors. Scoring includes quality, delivery, problem-solving, and document submission status. The full score is 10, with less than 6 points as a failure. To encourage suppliers and establish good cooperative relationships, suppliers with an overall evaluation score and an environmental, health, and safety score of 8 or above are eligible for recognition at the supplier meeting. Suppliers who fail the evaluation are listed in the supplier penalty report, and in severe cases, they are suspended. Reinstatement requires a review and approval from the relevant business unit supervisors.

Sustainability assessments

To ensure the sustainability of suppliers' implementation, CTCI conducts various types of assessments, including desk assessment, 2nd party assessments, 3rd party assessments, and industry standard assessments. The annual and long-term goals have been set to ensure the effectiveness of sustainability assessments. Through assessments, CTCI not only monitor suppliers' performance but also provide counseling to address assessment deficiencies and assist in making improvements. This gradually enhances the sustainability of the supply chain and strengthens its ability to respond to risks.

Format of Sustainability Assessments	Method of execution	Target suppliers	Number of suppliers	Performance for 2023	Target for 2023	Long-term goal (Target for 2030)
Desk assessment	with self-assessment questionnaire	Tier 1 suppliers and significant suppliers in non tier 1	221	95% completion rate for Tier 1 suppliers and significant suppliers in non-Tier 1 (total of 209 companies).	90% completion rate for Tier 1 suppliers and significant suppliers in non-Tier 1	100% completion rate for Tier 1 suppliers and significant suppliers in non-Tier 1
2nd party supplier on-site assessment	On-site assessment by CTCI personnel	Domestic high-risk suppliers	3	100% completion for high-risk domestic suppliers.	100% completion for high-risk domestic suppliers.	100% completion for high-risk domestic suppliers.
3rd party supplier on-site assessment	Arrange consultants for on-site assessments	Foreign high-risk suppliers; or domestic suppliers that have been identified as high-risk for two consecutive years	0	No assessments high-risk suppliers have been conducted as there are no foreign high-risk suppliers or no domestic suppliers identified as high-risk for two consecutive years	100% completion of assessments for foreign high-risk suppliers or domestic suppliers classified as high-risk for two consecutive years.	100% completion of assessments for foreign high-risk suppliers or domestic suppliers classified as high-risk for two consecutive years.
Assessment standards for the industry	Prepare self-assessment questionnaires for desk assessment in accordance with CTCI Vendor Code of Conduct (Reference to the Responsible Business Alliance (RBA) Code of Conduct)	Tier 1 suppliers	221	91% completion rate for Tier 1 suppliers	90% completion rate for Tier 1 suppliers	100% completion rate for Tier 1 suppliers

Corrective Action Plan Support

In response to assessment deficiencies, CTCI assisted suppliers in proposing improvement plans through on-site surveys and remote assistance, and completed the improvements within the specified timeframe. In 2023, a total of three on-site surveys were conducted, and after conseling, all deficiencies were successfully rectified.

Reward and Elimination Mechanism

To ensure the stability and reliability of the supply chain, CTCI has established a reward mechanism, which includes preferential selection of suppliers, public recognition, and disclosure. During the bidding stage, when there are two or more suppliers with similar prices, we prioritize those with outstanding sustainability performance through discussions. Suppliers with excellent sustainability performance are also publicly recognized at supplier conferences as role models.

Regarding the elimination mechanism, we suspend suppliers who have engaged in bribery, ab 和 oned bids, colluded, or made threats, and cease transactions with them. High-risk suppliers undergo on-site assessments and counseling to ensure that their risks are effectively controlled and reduced. If a supplier fails to rectify deficiencies and remains high-risk for three consecutive years, we reduce procurement amounts and suspend inquiries until they provide evidence of improvement. In 2023, no suppliers were eliminated.

Capacity Building

Training for procurement staff

To ensure that procurement staff have a thorough understanding of their roles in the supply chain sustainability management process, we organize sustainability-related courses to reinforce their awareness of Supply Chain Sustainability Management. This is done to effectively implement CTCI's supply chain sustainability development policy. In 2023, a total of 301 individuals received training, totaling 596 hours.

The sustainability training courses for procurement staff in 2023

Name of the sustainability training courses	Number of participants	Course hours
Trends in Net Zero Emissions: Impact and Opportunities for Businesses (CTCI Leadership Forum on Net Zero and Sustainability)	143	215
Energy-Saving Measures and Renewable Energy Management (CTCI Seminar on Net Zero and Sustainability Actions)	130	195
Introduction of Greenhouse Gas Inventory Standards and Trends	3	6
Global Trends and Actions in Net Zero Emissions	7	14
Net Zero Emissions in Buildings: Practical Cases and Reflections (CTCI Seminar on Net Zero and Sustainability Actions)	10	10
ESG Engagement of All Members Lead EPC Contractors to Achieve Net Zero Target - CTCI's road to sustainable strategy	4	4
Enterprise Sustainable Management Certificate Training Course	1	80
ISO 14064-1:2018 Training Courses for Chief Inspector on Greenhouse Gases	3	72
	Total	596

CTCI Supplier Meeting and Benchmark Suppliers Sharing

CTCI holds a supplier conference every two years and invites domestic and foreign suppliers to participate. The most recent one was held in March 2023 with a total of 125 participants from 8 countries and 76 suppliers (63 domestic and 13 foreign), which recognized 31 outstanding vendors based on their work types and category rankings. In response to CTCI's SBTi net zero goal, the theme of this year's supplier conference was "Net Zero cooperation, Win-win hand in hand". During the conference, the sustainable supply chain management policies were promoted and the "Supplier Alliance for Net Zero Emission" was established, suppliers are invited to join the alliance and sign the declaration to work together for the reduction target. By the end of 2023, 172 suppliers have responded.

The conference also invited benchmark suppliers to share their plans and experiences in sustainability and achieving net zero. Through the Supplier Meeting, we aim to expand ESG benefits and starting from 2024, we plan to categorize suppliers based on their scale and phase, requiring them to reduce greenhouse gas emissions. We hope to collaboratively create a brighter future of sustainable business operations.

Sustainable Engineering Forum and Environmental Action

By collaborating with the value chain to generate sustainable influence and address the sustainability trend, CTCI organized a Sustainable Engineering Forum in December 2023. The forum featured practical insights shared by Group Chairman John T. Yu, along with scholars and experts in engineering-related fields, covering topics such as COP 28 trends and ESG lectures.

Breakout discussions were held on three subtopics: "Net Zero EPC, Resource Circularity, and Social Impact." Participants from CTCI, clients, and suppliers shared practical experiences and engaged in discussions to enhance communication and future cooperation. A total of 17 individuals from 12 suppliers were in attendance. In addition, the online live broadcast was accessible to a greater number of supply chain partners, enabling an approximate attendance of 400 individuals in the exchange.

Sustainable Engineering Forum Group Photo

CHIA PENG Plastics Co., Ltd.Sharing of Sustainability Promotion Cases

TA YA ELECTRIC WIRE & CABLE CO., LTD.Carbon reduction practices and response strategies

CTCI organized the environmental education campaign "Protect Wetland Biodiversity and Create a Sustainable New Future" in December 2023, in addition to the Sustainable Engineering Forum, with the aim of promoting a green lifestyle. 7 suppliers were extended invitations to partake in the campaign. They spent their weekends at the Guandu Nature Park, where they entered the Wetland with the purpose of eliminating the mile-a-minute weed, an exotic plant that hindered the park's ability to function as a wetland.

Environmental Action "Protect Wetland Biodiversity for a Sustainable New Future"

TCI has communicated with suppliers through various media, such as the CTCI ESG e-newsletter, the CTCI Learning, ESG promotional videos, and seminars, etc., to communicate with suppliers, and continue to promote the Company's sustainability and net zero concepts to the supply chain.

Capacity building programs

To enhance suppliers' performance on ESG issues, we have engaged suppliers, invested resources and planned projects for more than six months to continuously improve the sustainability of suppliers; in addition to the domestic supply chain, CTCI's subsidiaries are required to promote the sustainability of the global supply chain in accordance with the Group's Supply Chain Sustainability Management policy, and then realize and expand the influence of the supply chain.

Name of programs	Project Content	Target suppliers	Number of suppliers	Qualitative benefits	Quantitative benefits
A **Supplier carbon management capacity building**	• Suppliers of Material/Equipment: Through the government counseling program, the Company works with external consultants to assist suppliers in greenhouse gas inspections and provide energy-saving and carbon-reduction improvement suggestions. • Subcontactors: CTCI personnel assist suppliers to conduct greenhouse gas inventory and provide improvement suggestions for energy conservation and carbon reduction	The Tier 1 suppliers of 2023 and members of the Supplier Alliance for Net Zero Emission*	There are 56 Suppliers of material/equipment and 54 sucontacotrs, totaling **110** suppliers	Suppliers are capable of conducting greenhouse gas inventories and implementing energy-saving, carbon-reducing improvements.	• Train 110 suppliers to complete a simple carbon inventory and obtain their carbon emissions • Provide suppliers with suggestions for improving energy conservation and carbon reduction; the annual carbon reduction is expected to reach 475.1 tons of CO_2e
B **Leveraging the Large to Lead the Manufacturing Industry - Subsidy Program for Low-Carbon and Smart Upgrade and Transformation**	• With CTCI Machinery, a subsidiary of CTCI, as the core plant, we work with the suppliers of the Group to achieve sustainable development of net zero process: • Replace high energy consumption and high carbon emission equipment with low energy consumption equipment • Incorporation of intelligent energy consumption monitoring system • Improvement of temperature control or automatic frequency conversion mechanism • Establishment of relevant carbon management procedures	Members of Supplier Alliance for Net Zero Emission*	**10**	Work with suppliers to optimize processes, promote energy conservation, carbon reduction, and drive Taiwan's economic development	• Promoted investment amounted to NTD 98 million • Estimated annual carbon reduction: 441.2 tons CO_2e • Estimated annual power savings of 10,936 kWh
C **Sustainability Insights**	• By regularly sending out e-newsletters covering diverse topics, we communicate global sustainable development trends to enhance suppliers' soft power. • Invite suppliers to participate in sustainability-related events such as engineering forums and environmental education activities to strengthen supplier sustainability literacy	Tier-1 suppliers and members of Supplier Alliance for Net Zero Emission	**396**	Raise suppliers' awareness of sustainability	• Completed information sharing for the 5th issue of the sustainability e-newsletter • Hosted 1 sustainable engineering forum and invited 12 suppliers to participate, of which 2 suppliers shared their sustainability promotion practices • Organized 1 environmental education event, and worked with 7 suppliers to take action for the environment, implement environmental protection, and cultivate green lifestyles

*: Including regularly cooperating suppliers / suppliers willing to collaborate with CTCI on carbon reduction / long-term contracted suppliers of CTCI

KPIs for Sustainable Supply Chain Management

1 Supplier Assessment（Coverage and progress of our supplier assessment program）

	KPI	Performance for 2023	Target for 2023	Target for 2030
1.1	Total number of suppliers assessed via desk assessments/ on-site assessments	Completed **221** suppliers	Completed 199 suppliers, or 90% of the total number of tier 1 suppliers and significant suppliers in non tier 1 monitored suppliers.	100% of the total number of tier 1 suppliers and significant suppliers in non tier 1 monitored suppliers.
1.2	% of unique significant suppliers assessed	**100**%	**100**%	The significant suppliers in tier 1 have achieved 100% compliance.
1.3	Number of suppliers assessed with substantial actual/ potential negative impacts	**3**	**3**	Number of high-risk suppliers in the current year.
1.4	of suppliers with substantial actual/potential negative impacts with agreed corrective action/improvement plan	**100**%	**100**%	**100**%
1.5	Number of suppliers with substantial actual/potential negative impacts that were terminated	**0**	**0**	**0**

2 Corrective action plan support （ Coverage and progress of suppliers with corrective action plans）

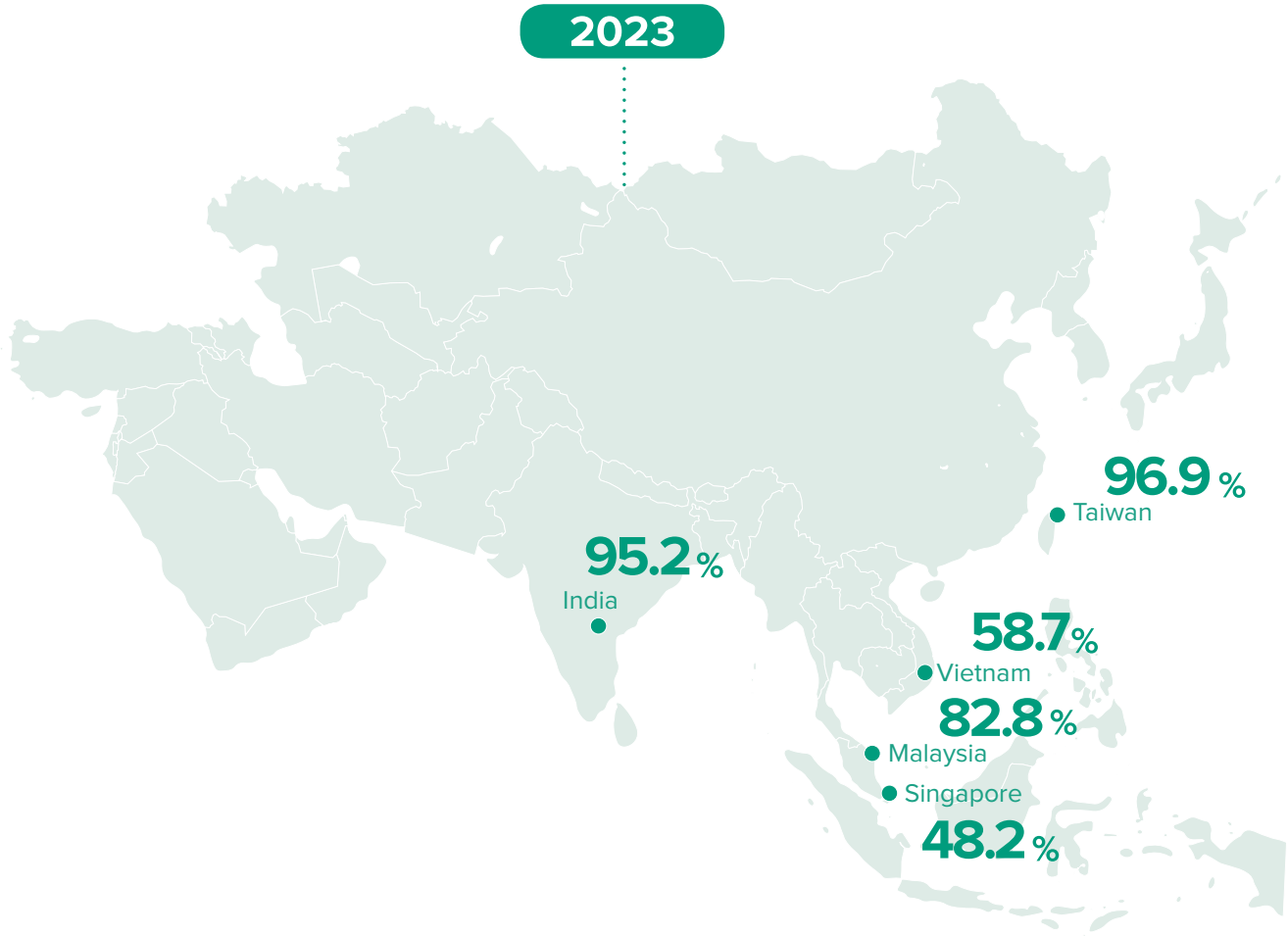
2.1	Total number of suppliers supported in corrective action plan implementation	**3**	Suppliers with deficiencies in the year 2023 (a total of 3 suppliers).	Number of suppliers with defects in the current year.
2.2	% of suppliers assessed with substantial actual/ potential negative impacts supported in corrective action plan implementation	**100**%	**100**%	**100**%

3 Capacity building programs （Coverage and progress of suppliers in capacity building programs）

3.1	Total number of suppliers in capacity building programs	**110**	Completed capacity building for **100** suppliers	Accumulated capacity building with **500** suppliers
3.2	of unique significant suppliers in capacity building programs	**88**%		

Local Procurement

CTCI is committed to contributing to the economic development of the regions where it operates and reducing carbon emissions from transportation, consequently, CTCI gives priority to local procurement in each project. The ratio of procurement as well as outsourcing fluctuates because CTCI's projects are carried out at different regions each year, and the procurement needs of each project vary at different stages. In 2023, CTCI's main projects were concentrated in Taiwan, India, and Malaysia, with procurement percentages of 79.4%, 18.8%, and 0.01%, respectively. Taiwan's local procurement proportion as high as 96.9% in 2023.



CH2

CTCI's Sustainable Role

CTCI's Sustainable Role II —
Guardian of Sustainable Earth

CTCI's Sustainable Role II — A Guardian of Sustainable Earth

CTCI takes green design as the principle, considers the environmental impact of each life cycle stage, and provides customers with the best environmental protection solutions, showing the positive benefits of energy saving and water saving; at the same time reducing air pollution, noise and waste of resources. We are also actively deploying clean energy and environmental protection business opportunities, contracting renewable energy, reclaimed water plants, waste water treatment, air pollution improvement and public transportation projects, using our expertise to make the environment sustainable.

58%

The Headquarters buildings started using green electricity in 2022. In 2023, the green electricity usage in the headquarters buildings reached 58%, equivalent to reducing 1,485 tons of CO_2e.

760
million kWh

From 2021 to 2023, green engineering has saved a total of 760 million kWh of electricity, which is equivalent to approximately 2.18 days of Taiwan Power Company's total thermal power generation, or the annual electricity consumption of 205,205 households.

18.9
million metric tons

From 2021 to 2023, the cumulative CO2e reduction thanks to green engineering is equivalent to 48,810 Taipei's Daan Forest Park's annual carbon absorption amount.

152.55
million metric tons

Thanks to green engineering, the amount of water saved from 2021 to 2023 is equivalent to 182 days of Taipei City's total water consumption.

6,259
metric tons

Cumulative emission reduction of volatile organic substances from 2021 to 2023 thanks to green engineering.

A Trailblazer of Application of Environmentally-Friendly Technologies

Green Technologies

At CTCI, we work hand in hand with our clients to adopt advanced eco and energy-saving technologies for the manufacturing process and incorporate green designs into the plants' central control centers to reduce the impact of operations on land, air, water, and natural ecosystems. CTCI has long been a global leader in green-engineering technology. By incoporating the United Nations Sustainable Development Goals into the development of green technology, we can ensure that CTCI maintains its competitive advantage in the future. With expertise and experience, we seek to create a better future for our clients through the application and R&D of engineering technologies.

Our leading technologies in the process, supply chains, construction, and plant commissioning allow us to play an important role in the global Engineering-Procurement-Construction (EPC) market. From the full lifecycle perspective of engineering design, procurement, construction, commissioning, operation, and decommissioning, we are committed to reducing the risk of environmental impact, providing customers with various green technological services that meet environmental protection requirements. We also continue to strengthen our environmental protection capabilities and implement an environmental management usystem. We strive for economical and feasible environmental protection and energy-conservation solutions and seize innovative opportunities when developing engineering projects that utilize these techniques.

Using green technologies to cope with environmental risks at various stages

	Design (Engineering) Stage		Procurement Stage	Construction Stage	Commissioning and Operation Stage	Decomissioning Stage
	Design	Material	Transportation	Construction	Utilization	Dismantling
Environmental risks	Various methods of design may lead to different types of environmental impact. Aspects include geotechnical engineering, construction, electrical machinery, piping, system control, and equipment.	Mining of natural resources, energy consumption, and production of building materials.	Greenhouse gases emissions during transportation	Greenhouse gases emissions, air pollutants, water, waste and toxins, and treatment of pollutants.	Greenhouse gases emissions, duration of utilization, and maintenance.	Waste classification, temporary waste storage, and follow-up disposal of waste.
Mitigation measures	• Standardized design • Modular design • Intelligentization of turnkey projects	• Multifunction • High efficiency • Low pollution • Low carbon emissions	• Localized procurement to reduce transportation costs • Consolidated transportation of cargo	• Automation to reduce on-site workload • Improve wastewater recycling and reuse efficiency to minimize environmental impact • Semi-automatic pipeline welding machine • In-pipe cleaning robot • Develop automatic bolting technology for industrial pipeline flange bolts • Reuse of water resources in temporary sand settling pit on construction sites • Promote site construction machinery to obtain the independent management label of the Environmental Protection Agency • Electric Forklifts are used in site warehouses	• Application of high-performance equipment • Application of organic materials	• Resource recycling and reuse
Examples or improved performance	• Reduction of 15,786 tones CO2e in 2023 as a result of electricity or water reduction in the design stage, thanks to the application of green technologies.	• Reduction of 26,520 tons CO_2e in 2023 as a result of utilizing green substitute material in the design stage.	• In 2023, 96.9% localized procurement in Taiwan; 95.2% in India ; and 82.8% in Malaysia	• Reduction of 20,242 man-hours in 2023 thanks to the application of semi-automatic pipeline welding machine. • Reuse 120,100 M^3 water through temporary sand settling pit at sites in 2023.	• Expected reduction of 31,274 MWh in electricity during operations thanks to the application of green technologies of energy-saving HVAC system and equipment in 2023.	• 635 tons of scrap iron recovered from global construction sites in 2023. • 22.6 tons of discarded wood recovered from global construction sites in 2023. • The ratio of regenerated / recycled materials used in global construction sites in 2023 (%): steel pipes 11.15%, concrete 6%, and cement 23.73%. • The recycled and reused of surplus materials generating carbon reduction benefits of 151 metric tons CO_2e.

Name of the green technology

Developing automatic bolting technology for industrial pipeline flange bolts

Reason for development

Engineering negligence at the joints of industrial pipelines often results in leakage of liquid or gas in the pipes, resulting in numerous accidents, often resulting in serious casualties and property losses; therefore, the construction progress and bolting quality required for industrial pipeline flange bolt locking are very important. If the locking is incomplete, or the tightening method and poundage are insufficient, the reliability of the pipeline will often be reduced, resulting in the risk of leakage when the pipeline is transporting fluid at high pressure. In many construction contracts, pipeline pressure test inspection before commissioning is included, as well as the flange bolting inspection records and reports. During the inspection, water or air will be used directly for pressure test. If leakage is found during the test, Pressure relief, blowing, and step-by-step verification and inspection of joint locking, repair, reassembly, etc., and then re-testing must be carried out, not only waste a lot of manpower, but also lengthen the construction completion time. In this regard, the technology can reduce construction and inspection personnel and time.

Over the past 40 years, CTCI has adopted the most advanced technologies to minimize environmental pollutant emissions, reduce energy and resource consumption, and minimize the environmental impact and cost. Currently, all of our engineering projects adopt the latest environmental protection processes as much as possible. One of the biggest technological challenges engineering companies face when it comes to sustainable management is to apply various green technologies in engineering, keep doing research, and develop momentum. As a forerunner in green engineering, CTCI has incorporated the idea of environmental protection into the company's sustainable operations. We have a long history of commitment to the application, research, and development of green techniques. This includes improving energy efficiency, saving water, protecting the ecosystem, and creating a safe working environment. Given that many countries' authorities have been setting low-carbon emissions targets for their economies, we have developed various types of highly efficient environmental protection facilities and energy management technologies, which have been proven effective in real construction applications. We would proactively propose optimal options that are eco-friendly and energy-saving to our project owners, so that we all can cope with climate change and achieve peaceful coexistence with the environment together. In order to continue to break through the innovation bottlenecks of green engineering we currently face, we continue to look for green solutions, and at the same time expand the focus from basic technologies to research and development, so that we gradually lead the future development of the engineering sector. In line with the international trend, we aggressively respond to climate change, reduce greenhouse gases emissions, and move towards sustainable management of natural resources.

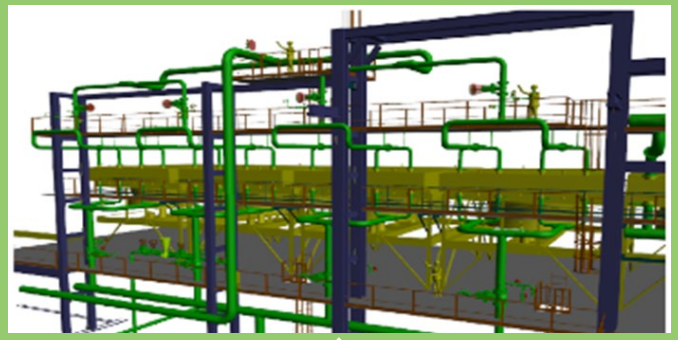
Green technology applications and results

Technologies	Measures	Applications or results	EU Taxonomy
Energy-saving and water-saving technologies for processes	• Update process technologies or adopt optimal process designs. • Recycle waste heat generated during the process to produce steam for reuse.	• We applied energy-saving technology related to the heat recovery boiler system to the natural gas power plant, resulting in reduction of 462,383 metric tons of CO_2e per year.	• 4.25 Production of Heat/ Cool using Waste Heat
Energy-saving technologies for the rotary machinery	• Optimize rotary machinery systems to improve transmission efficiency.	• Use inverters: Achieve better control over process systems, with lower machinery maintenance cost, lower noise output, and increased adaptability to system changes.	• 3.1 Manufacture of low carbon technologies
Energy-saving technologies for electrical engineerin	• High-efficiency transformer: Use high-efficiency silicon steel sheet transformers to reduce no-load loss (iron loss) and on-load loss (copper loss). • High-efficiency lighting: Use energy-saving LED lights with an intelligent on/off switch function to improve energy efficiency. • Renewable energy: Utilize solar energy and wind energy to transform natural energy into energy.	• Transformers: Increase performance while extending service life and reduce greenhouse gas emissions. Substantial energy consumption can be minimized in production processes, and materials can be reused. • Lighting: Minimize ambient light pollution and reduce greenhouse gas emissions. • Renewable energy: Make full use of natural forces to reduce dependence on traditional non-renewable energy power, and effectively reduce carbon emissions.	• 3.1 Manufacture of low carbon technologies
Equipment design specification/ selection of material specification	• Optimized design based on pressure vessel specification. • Modification of the structure & material for the cooling tower. • Optimized design of floating roof tank • Optimized selection of the type of the fans.	• Inclusion of design specification with ASME Sec VIII Div.2 for big size pressure vessel or tower to reduce the thickness resulting in less material quantity and CO2 emission. A prime example is the GCGV MEG project for ExxonMobil in the US. • Replacing RC with FRP for the structure material of cooling tower, resulting in less material quantity/construction schedule & manpower and CO_2e mission. A prime example is the LPIC EPC 1 project in Oman. • Dramatically reduce the weight of the roofing material and shorten the construction time. Practical application in Malaysia RAPID P28 project. • Using a new rotor design to improve the fan efficiency and reduce the fan horsepower to achieve the benefits of saving energy and carbon reduction. Practical application in Chimei 101LA project.	• 3.1 Manufacture of low carbon technologies

Technologies	Measures	Applications or results	EU Taxonomy
Air pollution prevention	• Hydro-desulfurization and selective catalytic reduction (SCR). ① • Using elements of denitrification, desulfurization, and dust removal to comprehensively treat all pollutants between the exhaust emission port and the chimney	• Reduce emissions of various air pollutants, including particulate matters (PM2.5). • The concentration of exhaust gas (SO_2, NO_X and particles) can become lower than that from the traditional exhaust gas treatment methods. • Achieve the standard for best available control techniques. • Reduce annual NO_X emissions by more than 246,000 metric tons.	• N/A
Wastewater treatment	• Advanced dual-layer gas gathering up-flow anaerobic sludge blanket method. • Process technologies and membrane bioreactor (MBR). ② • Electro Dialysis Reversal (EDR) technology in industrial wastewater recovery. ③	• Over 70% COD removal rate; 60% of the methane contained in the biomass gas is sent to the boiler in the plant as fuel. • Improve wastewater treatment performance. • Reduce risks during water shortages.	• 5.2 Centralized wastewater treatment
Vibration control	• Set up a vibration group based on task orientation that include process, iequipment, piping, and civil engineering experts to help project team and customers to deal with various vibration phenomena.	• Ensure that the equipment, pipelines, and structures conform to vibration specifications.	• N/A
Equipment noise control	• Use mufflers, sound-proof shields, acoustic barriers, and soundproof coverings for equipment and pipeline. • Low-noise fan design. • Equipment suppliers are required to conduct noise tests and provide test reports. • Analyze the plant area with engineering software and visualize the noise distribution. • Screening of facilities with discontinuous high-noise based on API principles.	• The overall noise of the factory is within the allowable level, effectively reducing the adverse impact of the working environment on operators and complying with OSHA standards.. • The entire plant perimeter complies with environmental noise standards. • Achieve optimal noise control design. • Evaluate feasible noise prevention measures and remove unnecessary prevention equipment. Practical application in Indian LNG project.	• N/A
Application of low-emission valves	• Use low-emission valves with 100 ppm leakage specification instead of the general valves above 1,000 ppm.	• Effectively lowers the fugitive emission of valve operations, minimizing the impact of VOCs ④ to the staff and the environment.	• N/A
Green building ⑤	• Green design, permeable pavement, and green vegetation cover design, and utilization of green building materials.	• The CTCI Group Second Headquarters Building is one of CTCI's green engineering projects, which has won the top national prize "National Architecture Gold Award" (Planning and Design Category and Construction Quality Category) after receiving three major certifications: the Gold level "LEED Green Building"(United States), the Diamond-level "IGB Smart Building" (Taiwan), and the Diamond level "EEWH Green Building" (Taiwan). This building has a green building design, with a 266.15% green cover ratio, and an energy saving rate of about 24% (generally, smart buildings can save about 16% of energy). With new technologies such as cloud, IoT, big data, and artificial intelligence, we have developed smart monitoring and applications, including smart air conditioning, lighting, security, energy management, and maintenance, making it a green headquarters building that is energy-saving, sustainable, and environmentally friendly.	• 8.1 Construction of new buildings
Value engineering (VE) applications for plant arrangement ⑥	• Optimize equipment, structure, piping, and other object arrangement. • Minimize the distance between each equipment.	• Effectively save the amount of steel structure and concrete used, reduce the consumption of energy and greenhouse gas emissions.	• 3.1 Manufacture of low carbon technologies
Life cycle cost analysis	• Use life-cycle cost analysis software (EEA). ⑦	• Make proposals more scientifically grounded and connective to sustainable concepts.	• N/A
Real-time project information dashboard	• Establish a shared information platform system.	• Real-time and synchronous inspection of the execution status of project engineering, procurement, construction, and commissioning. This makes project execution information more transparent and easier to manage.	• N/A
Integration and application of engineering equipment information	• Formulate standardized equipment control operation process and powerful equipment control systems.	• In-time and quality delivery of appropriate equipment to construction sites to meet scheduling needs.	• N/A
Application of building information and modeling (BIM) technologies ⑩	• According to project requirements, integrate the models of various professional projects and related building material data in platform software such as Navisworks, SP3D, BIM360, etc., and develop interface programs.	• Complete on-site collision elimination during the design stage to avoid on-site engineering removal and correction and reduce waste generation. • Improve the quality of engineering design, provide accurate drawings, work, and materials, and extend it to construction management. Improve the accuracy of the supply chain, avoid repeated changes in material quantities, and effectively control the construction period.	• 3.1 Manufacture of low carbon technologies

Technologies	Measures	Applications or results	EU Taxonomy
Automated piping arrangement and electrical wiring design	• Develop automated design systems for planning and design of system control wiring path.	• Improve work efficiency, minimize human design errors, shorten processing time, improve the quality of prints, and save labor costs.	• N/A
3D laser scan applications	• Construct point cloud in digital models to reconstruct physical objects or environments into accurate 3D models.	• Applied to a oil refinery expansion project in Thailand and a petrochemical plant expansion project in Saudi Arabia.	• N/A
Application of mobile devices at construction sites	• Incorporate engineering management into mobile construction site operations.	• Accelerate the operation process of construction management review, input, query and so on. • Applied to sulfur plants, power plants, flare gas recovery system plants, and EVA plants. ⑧	• N/A
Precast concrete technique	• Reinforced concrete bars are cast first under stringently controlled environment in the factory.	• Advantages include high durability, low repairs and maintenance requirements, short installation time, high cost-effectiveness, quieter and cleaner construction sites, and high fire-resistance grading.	• N/A
Modular construction applications	• Modular designs for detailed construction; dynamic simulation of the hoisting process for modular construction by using CTCI's innovative 4D software.	• Implement a safe and viable installation sequence to shorten the installation time, increase construction quality, minimize work aloft, prevent occupational hazards, and reduce the need for labor in welding. • Applied to naphtha crackers and sulfur plants.	• N/A
Prefabricated piping and installation applications	• Formulate construction plans with piping section prefabrication system, add barcode label function to retrieve information related to production, warehouse management, and installation data.	• Share design drawings and discussions with remote project teams in real-time, increase the efficiency of construction site management, reduce construction errors, and save on-site construction cost.	• N/A
Technical application of wireless instruments	• Replace traditional wired instruments with wireless instruments.	• Reduce plant construction cost by minimizing the use of materials, as well as minimizing GHG emissions during construction. • Successfully incorporate wireless corrosion detection instruments in overseas RFCC plants ⑨ • Use wireless temperature measurement instruments in foreign LNG plants and for offshore Trestle Pipeline applications.	• 3.1 Manufacture of low carbon technologies

①:SCR = Selective Catalytic Reduction ②:MBR = Membrane Bioreactor ③:EDR = Electrodialysis Reversal ④:VOCs = Volatile Organic Compounds ⑤:The data is calculated according to the "Technical Code for Design of Green Buildings"
⑥:VE = Value Engineering ⑦:EEA = Carrier Engineering Economic Analysis ⑧:EVA = Ethylene Vinyl Acetate ⑨:RFCC = Residue Fluid Catalytic Cracker ⑩:CTCI passed the verification of BIM (Building Information Modeling, Building Information Modeling) international quality management standard ISO 19650-2 and ISO 19650-5.

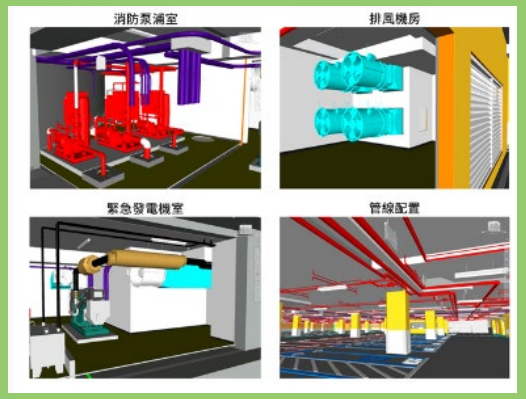


Parametric 3D automatic piping

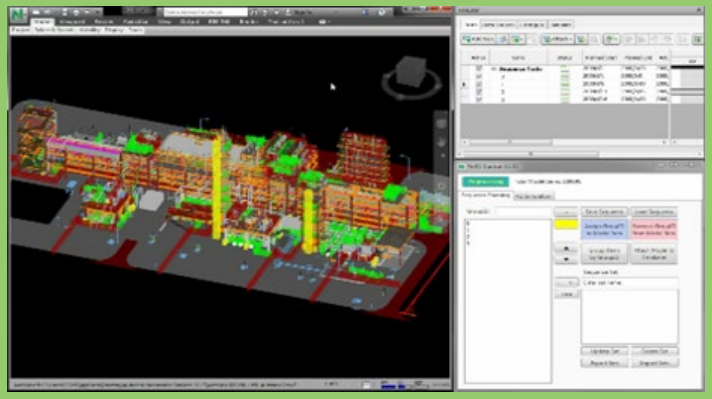
Modular construction applications

3D laser scanning applications

MRT Railway



Building Information Modeling (BIM)



Construction process simulation

Performance and Potential Benefits of CTCI's Key Green Engineering Measures in 2023

Avoided Emission

Green engineering technologies	Type of energy/resource and type of emissions reduced	Lithium battery factory in Taiwan	Data center in Taiwan	Thermal power plant in central Taiwan	Smelting Plant in Indoniasia
Improve the energy efficiency and energy saving of HVAC equipment in green buildings ①	Electricity (MWh/year)	1,379			
	CO_2 e redution (Ton- CO_2e/year)	683			
HVAC system uses windmill array to save energy ①	Electricity (MWh/year)		28,853		
	CO_2 e redution (Ton- CO_2e/year)		14,282		
Control system for graphics/ documents management optimization ②	Sheets / year				401,500
	CO_2 e redution (Ton- CO_2e/year)				2.9
power factor improvement ③	Electricity (MWh/year)				1,042
	CO_2 e redution (Ton- CO_2e/year)				818

①: Annual electricity saved is calculated based on 24-hour operation for 365 days per year. The annual CO_2e emission factor in 2022 was 0.495 kg/kWh in Taiwan according to the Bureau of Energy, Ministry of Economic Affairs.
②: Carbon footprint of virgin wood pulp photocopying paper: 3.6 kgCO_2e/pack, declared unit 1 pack is 500 sheets of A4 paper.
③: The annual CO_2e emission factor was 0.7848 kg/kWh in Indonisia，referring to 2022《Indonesia Climate Transparency Report》

Low Carbon Products

Green engineering technologies	Type of energy/resource and type of emissions reduced	Lithium battery factory in Taiwan	Data center in Taiwan	Thermal power plant in central Taiwan	Smelting Plant in Indoniasia
Fly ash or slag used for cement in concrete ②	Cement reduction，Ton			311,94	
	Ton- CO_2e			26,434	
Use recycled pellets to replace some natural pellets in CLSM (Controlled Low Strength Material) ③	Natural pellets reduction，Ton			15,143	
	Ton- CO_2e			86	
Rainwater/waste water recycling and reuse ①	Water reduction，thousand Tons			9	
	Ton- CO_2e			1	

①：The potential water-saving benefit that comes from the application of green technologies in the design stage, such as WWT or recovery, and being implemented in the operation stage. According to Taiwan Water Corporation announced in 2022, the CO_2e released for each M^3 of city water was 0.156 kg- CO_2e/ M^3.
②："Taiwan Railway Engineering" Volume 44 Issue 9-442. Cement: 880 kg·CO_2e/T, blast furnace slag powder 68.3 kg·CO_2e/T, fly ash 0 kg·CO_2e/T.
③："Basic-oxygen-furnace (BOF) slag application website of CHC Resources Co., Ltd.", Natural granular material 7.24 kg·CO_2e/1,000Kg

Regarding the Performance and Potential Benefits of CTCI's Key Green Engineering Measures in 2023, the expected carbon reduction benefit of avoiding emissions during the design phase is 15,786 mtCO_2e, accounting for 5.5% of the total revenue in 2023; the carbon reduction benefit of low-carbon products is 26,521 mtCO_2e, representing 12.5% of the total revenue in 2023. The combined carbon reduction benefits of avoiding emissions and low-carbon products are expected to be 353,774 mtC_2O_2e by taking each life cycle stage from design, procurement, construction, commissioning to operation into account.

Performance and Benefits of CTCI's Green Engineering Technologies and Operations Management in 2023

Green engineering technologies and operations management	Type of energy/resource saved	Other General Projects
Email electronic invoice operation ②	Ton- CO_2e	2
Using electric folklift in warehourse ③	Ton- CO_2e	19
Use energy-saving electrical equipment in construction site offices ③	electricity (MWh)	339
	Ton- CO_2e	168
Engineering surplus material resale	Ton- CO_2e	151
Waste concrete blocks crushed and used as graded paving	Ton- CO_2e	187
Landscape fence ④	Ton- CO_2e	4
The water in the sand settling pit is used as water for dust prevention and planting in the construction site ⑥	water (thousand tons)	120.1
	Ton- CO_2e	19
Virtual integrated bid opening room ①	Ton- CO_2e	386
Use straw mats to lay on bare ground ⑤	Ton- CO_2e	2,347

The total emission reduction benefits of Performance and Benefits of CTCI's Green Engineering Technologies and Operations Management in 2023 was 3283 Ton- CO_2e.

①: The emission reduction benefit that comes from the virtual integrated bid opening room, which minimizes the need for overseas vendors to make physical trips during the procurement stage.
②: The emission reduction benefit that comes from electronical operation in lieu of paper work in the procurement stage.
③: The emission reduction benefit that comes from using energy-saving appliances in place of fuel-based construction machine during the construction stage.
④: The emission reduction benefit that comes from the application of construction site fence with vegetation, with the benefits of beautifying the environment and absorbing carbon dioxide during the construction stage.
⑤:During the construction phase, dust-proof nets were laid with straw mats instead of plastic dust-proof cloths to reduce the amount of plastic used.
⑥:During the construction stage, the initial rainfall and wastewater collected by the temporary sand settling pit is reused to minimize the consumption of water resources.

Transition to Low-Carbon Engineering

Green engineering projects play an important role in effectively mitigating climate change and environmental impacts. Global warming and climate change have forced the energy-intensive petrochemical industry to face stricter requirements on environmental protection, sustainability, and net zero emissions. The future development of the petrochemical industry will be seriously impacted. As such, the petrochemical industry will be forced to improving energy efficiency and reducing energy consumption. The demand for overhaul, upgrade, and improving the efficiency of existing plants will thus likely increase. CTCI prioritizes low-energy design in construction projects and actively helps clients design and construct green infrastructures and buildings. CTCI has transformed from its traditional business model, where most projects come from the oil refining and petrochemical industry, to a new model that includes environmental and green engineering projects. In doing so, CTCI has gradually expanded its service scope.

Among the various projects undertaken by CTCI Group, green projects include natural gas power plants, LNG receiving terminals, wind power projects, solar power projects, renewable fuel projects (such as renewable diesel oil), battery plant projects, waste treatment projects (such as EfW plants), water reclamation plants, waste water treatment projects, air pollution improvement projects, public transport projects, and green building projects. As customers pay more and more attention, the proportion or green projects will increase year by year.

CTCI's performance in 2023

9 completed low-carbon engineering projects, or equivalent to 81.8% of all projects.

4 buildings have acquired green building certificates, or equivalent to 5% of all buildings

Green Building Projects (EEWH certificate)

Acquired：

Silver Leve*2 : Pingtung Park Zhongzheng Victory Park parking lot turnkey project, Xinzhuang Sports Park underground parking lot new turnkey project
Copper Level*1 : New construction of the collection warehouse of the Taipei Fine Arts Museum and upgrading project of the south entrance.

On-going ：

Diamond Level *1 : New construction project of TCC Daka Recycling Resource Utilization Center
Gold Level*7 : Molie Quantum Kaohsiung Li-Battery Plant (5 Buildings - FAB+CUP 、Guard Room 、 Parking Building 、 GIS Building * Public hazardous materials warehouse) 、 FOXCONN Li-ion Battery Plant 、 Microsoft TPE05 Data Center
Silver Level*4 : Taoyuan Biomass Center (2 Buildings-Control building, guard room) 、 CGTDC Petrochemical Tank farm 、Turnkey project for the renovation of the old school building of Guangrong Primary School
Qualified Level*2 :Taichung Power Station 、 Hsinta Power Station

Number of various types, including low-carbon engineering services, of completed projects in 2023

Category	2020	2021	2022	2023
Refineries and petrochemical plants	5	1	4	0
LNG receiving terminals	-	-	0	2
Thermal power plants	3	0	0	0
Steam and power co-generation plants	1	0	0	0
LNG power plants	-	-	0	0
Energy-from-waste plants	0	0	0	0②
Industrial	11	5	2	2
Renewable energy	2	0	0	0
Water reclamation plants	1	0	0	0
Wastewater treatment	0	2	0	3
Air pollution improvement	1	1	1	0
Public transportation	0	1	0	1
Green buildings	-	1	3	3
Total	24	11	10	11
Percentage of low-carbon and environmental-friendly projects (%) ①	4 (16.7%)	5 (45.4%)	4 (40.0%)	9 (81.8%)

Note ① Includes LNG terminals, LNG power plants, renewable energy (wind power, solar power, renewable fuel (biodiesel)), batteries, water reclamation plants, waste treatment (such as EfW plants), wastewater treatment, air pollution improvement, public transportation, and green building projects.
Note ② There is one EfW plant project with green building in 2023. To avoid double-counting, it is categorized as green buildings

The North Taiwan sewage system project contracted by CTCI Group has a total carbon emission of 106,921 metric tons during the entire plant operation life cycle. In the design stage, green technologies such as wastewater reprocessing/recycling are used. In the operation stage, after the implementation of the treatment/recycling system, the estimated life cycle water saving benefit is 21.46 million tons and the carbon reduction is 3,455 metric tons of carbon equivalent.

The total backlog of CTCI's fossil fuel and renewable energy projects is NT$142.7 billion. No canceled fossil fuel-related projects. The backlog of the non-energy projects related to mitigating climate change is NT$ 115.3 billion, detailed as follows:

Projects	Backlog (in billion NTD)
Water reclamation plants	51.9
Air pollution improvement	0.064
Incineration plants (EfW plants)	36.1
Wastewater treatment	0.027
Batteries	4.4
Public transportation	22.8
Total	115.3

Given that considerable energy is consumed across the lifecycle of engineering projects, it is environmentally significant to reduce energy consumption during plant operations because it can help clients save operation costs, help achieve effective energy distribution, and reduce greenhouse gas emissions. CTCI has established a cross-department ESG task force, which is responsible for promoting and enhancing energy-saving and environmental protection management at construction sites as well as delivering energy-saving and carbon emissions-reducing services to customers. These technological services can help minimize the environmental impact of products and become a driving force for corporate growth once they become commercialized.

Strengthen Climate Resilience

Climate-Related Financial Disclosures

CTCI introduces the TCFD and TNFD frameworks to assess the physical and transition risks related to climate change, measure and calculate the climate change impacts faced by itself, its suppliers and value chain partners, and promote climate-related financial disclosure and communication among stakeholders (For TNFD related assessment, please refer to **Biodiversity**).

CTCI recognizes the importance of climate issues and proactively engages in climate risk and opportunity assessment. CTCI officially signed up as a TCFD supporter as early as October 2022 and uses the TCFD framework to examine potential climate risks and opportunities for management to reduce risks and seize development opportunities.

Govern-ance

- Organize a dedicated unit for sustainability: the Sustainability & Net Zero Office. Under the chief sustainability officer, the Sustainability & Net Zero Office is working with the ESG and Net Zero Team to promote sustainability affairs in all departments, and is managed by the chief supervisor (served by chairman) of the ESG and Net Zero Team.
- The chief supervisor and the chief sustainability officer regularly report to the ESG & Net Zero Committee (composed entirely of board members) under the Board of Directors on how they evulate and respond to risks and opportunities from climate change, and their disclosure schedule and implementation progress on Greenhouse Gas Emission Investigation, and mitigation pathway reports, etc. After completing committee discussions, report to the board at least once a year
- The board is the highest level of the climate issue management organization at CTCI, with regular reports on the overall development strategy and implementation results of sustainable development by the chief supervisor and the chief sustainability officer. After listening to the report (held on December 20, 2022), the Board will provide necessary guidance and suggestions to ensure the company complies with its sustainable development strategy.
- For sustainable organizational structure, please refer to **"Policy and Organization"**

Strategy

- Based on the likelihood and impact level of various climate issues, 6 major climate risks and 6 major climate opportunities were identified.
- Evaluate the impact of business orientation and operational orientation from the perspective of the value chain (organization, suppliers, clients), and conduct qualitative and quantitative evaluations on the financial impact.
- Physical risks are analyzed by using RCP 8.5, while the transition risks are analyzed by using scenarios such as NDC, NZE, and SSPs to evaluate the impact on the Company's operating costs and develop carbon reduction paths and strategies.

Risk Management

- Climate and nature risk is one of the risks evaluated by CTCI's "Risk Management Regulations", which is regularly managed by the Risk Control and Management Office every year to comprehensively examine potential risks in the Company. Please refer to **"Risk Management"**
- We have established measures specifically for climate risk issues - the "Climate and Nature Risk Management Regulations", and developed an identification and evaluation process based on the TCFD and TNFD framework, which will be tracked and reviewed annually. (TNFD-related assessments, please refer to the **Biodiversity**)
- Assess the impact of the major risks and opportunities identified through the matrix, and formulate response measures for management.

Metrics and Targets

- CTCI and benchmark companies jointly launched the Taiwan Alliance for Net Zero Emission with the promise to achieve net zero emission for offices by 2030 and for production sites by 2050. CTCI's net zero target has passed the Science Based Targets initiative (SBTi) review in 2024, committed to achieving net zero in 2050 aligned with the 1.5°C timeline.
- Complete the greenhouse gas inventory (including scopes 1, 2, and 3) of the previous year every year and obtain external verification from a third party. Scope 1 and 2 further evaluate the impact of possible carbon fees on operating costs; Scope 3 considers the impact of carbon fees imposed on suppliers on procurement costs. Please refer to the **transition risk**.
- Establish management metrics related to climate change, such as greenhouse gas reduction metrics and targets, and green power usage targets. Please refer to **"Greenhouse Gas Management"**.

CTCI Climate & Nature-Related Financial Disclosures Report

Implementation Process

CTCI made the "Climate and Nature Risk Management Regulations" as the highest standard for managing climate change issues for the company. By continuously identifying climate change issues and examining the potential impact of climate change factors on the Company, members of the ESG and Net Zero Team are actively looking for ways to manage and mitigate such risks in order to improve internal identification and response to relevant risks and opportunities.

Build TCFD awareness

Enhance employees' understanding of TCFD through training.

Determine climate related risk and opportunity issues

Collect 36 climate risk issues and 22 opportunity issues, examine the degree of correlation with CTCI, and categorize them into 15 risk issues and 13 opportunity issues.

Identify major climate risks and opportunities

Provide each unit with a questionnaire to identify 6 major climate risks and 6 major climate opportunities based on a matrix made up of probability of occurrence and the level of impact.

Evaluate climate related risk and opportunity impacts

Develop different scenarios to evaluate and quantify the impact on all operational aspects from the perspective of the value chain (organization, suppliers, clients).

Take management actions to address climate related risks and opportunities

Further propose management actions and response plans for the identified major risks and opportunities.

Build TCFD awareness

Through training courses with project, business, administrative, research and development units, employees can reflect on potential risks and development opportunities from their work, evaluate potential impacts, and propose necessary management actions.

Date	Course Subject	Course Description
2022.12.01	Identification of climate related risks and opportunities	Complete the matrix by filling out the questionnaire to identify major risks and opportunities.
2023.02.10	Description of Physical Risk Assessment	Evaluate the impact level of flooding, water resource shortage, and rising sea level on the headquarters, domestic and foreign subsidiaries, and construction sites.
2023.02.10	Description of Transition Risk Quantitative	Consider the climate risks and opportunities faced by the core business, and set quantifiable indicators for evaluation.
2024.02.22	Communicate quantification of climate-related risks and opportunities	Review climate risks and opportunities impact assessments and corresponding action measures.

Establish a compensation plan for good performance on climate change

CTCI will link its sustainability goal to the KPIs of each supervisor (including senior executives such as CEO) and department, as one of the evaluation factors for performance bonus distribution. In the "Performance and Development Management System", specify each department's "green project contract achievement rate", "greenhouse gas emission intensity target achievement status", and "net zero EPC achievement rate". The supervisors should notify the employees of all the KPI requirements of the above departments, and ask them to set their own KPIs to ensure they promote ESG effectively.

Set ESG behavior evaluation goals for the employees, including: 1. participating in ESG courses or competitions organized by the Group for all employees; 2. conducting a meeting with more than 5 people to share their ESG Moments. By doing this, the employees will pay more attention to sustainibility and apply it to their daily life and work.

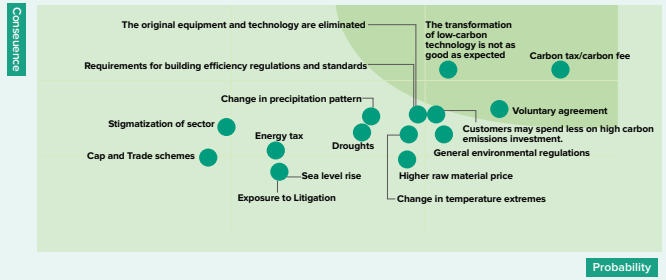
In addition, energy management performance is included in the annual best project measurement indicators, and scores are given based on the degree to which the project's emission intensity exceeds the annual target. Those who win the best project award will receive a project bonus for their effort.

KPI Items		%	Corresponding to ESG material issues
Financial Goal 65%	Gross Profit Achievement Rate	50%	
	Contract Amount Achievement Rate	10%	
	Green Engineering Contract Amount Achievement Rate	10%	Net Zero EPC and Green Engineering
	Revenue Achievement Rate	20%	
	Operation (Proposal) Expense Saving	10%	
Non-Financial Goal 35%	Occupational Safety and Health/ Quality Work	25%	Safety and Health in Workplace
	Environmental Protection(Incl. Net Zero Results)	15%	Climate Strategy and Net Zero Implementation
	Project Key Position Readiness	20%	Career Development and Train
	External Customer Satisfaction	10%	Brand Management Customer Service and Management Social Influence Enhancement
	Talent Turnover Rate	10%	Talent Recruitment and Retention
	Net Zero EPC Achievement Rate	10%	Innovative Technology and Services Supply Chain Sustainable Management
	Risk Control and Management Rate	10%	

Identify major climate risks and opportunities

CTCI designs a survey based on the types of TCFD physical risks (acute, chronic) and transition risks (policy and legal, technology, market, and reputation), evaluates the impact of business orientation and operational orientation from the perspective of the value chain (organization, suppliers, and clients), and establishes a climate risk opportunity matrix to identify major climate risks and opportunity projects in the short term (10 years), medium term (20 years), and long term (30 years).

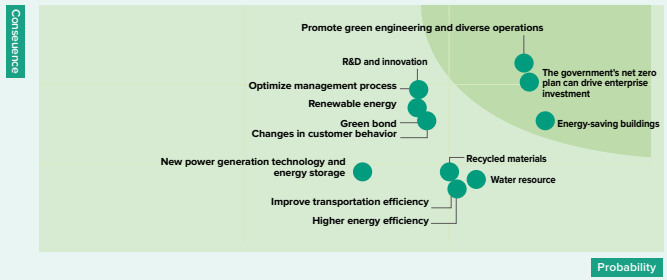
CTCI-Climate Risk Matrix



The top three risks

- Carbon tax/carbon fee
- The transformation of low-carbon technology is not as good as expected
- Voluntary agreement

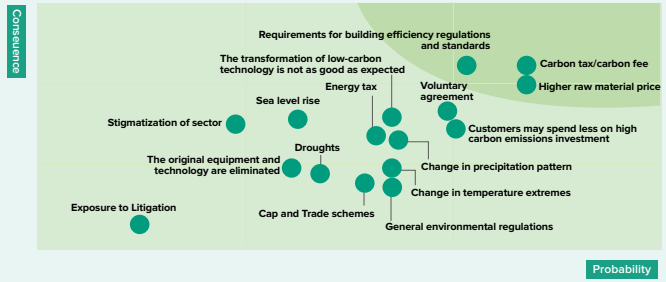
CTCI-Climate Opportunity Matrix



The top three opportunities

- Promote green engineering and diverse operations
- The government's net zero plan can drive enterprise investment
- Energy-saving buildings

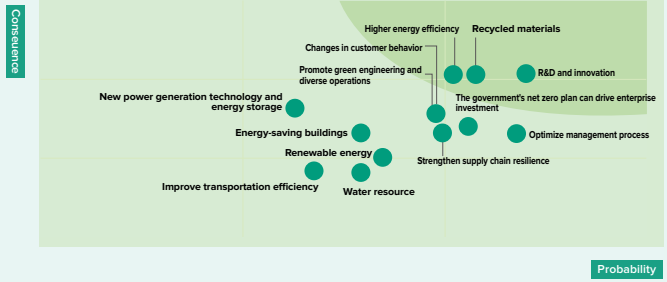
Suppliers and Subcontractors - Climate Risk Matrix



The top three risks

- Carbon tax/carbon fee
- Higher raw material price
- Requirements for building efficiency regulations and standards

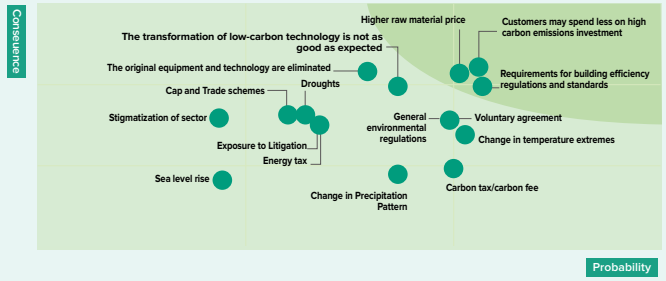
Suppliers and Subcontractors - Climate Opportunity Matrix



The top three opportunities

- R&D and innovation
- Recycled materials
- Higher energy efficiency

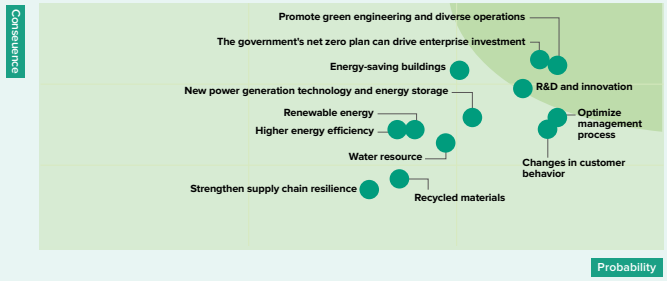
Clients - Climate Risk Matrix



The top three risks

- Customers may spend less on high carbon emissions investment.
- Higher raw material price
- Requirements for building efficiency regulations and standards

Clients -Climate Opportunity Matrix



The top three opportunities

- Promote green engineering and diverse operations
- The government's net zero plan can drive enterprise investment
- R&D and innovation

Description of application scenarios

Risk Types	Scenarios	Scenario Description
Physical Risks	RCP 2.6 RCP 4.5 RCP 6.0 RCP 8.5	he Representative Concentration Pathways (RCP) were proposed in the sixth scientific assessment report of the United Nations Intergovernmental Panel on Climate Change in 2021. The RCP8.5 scenario stands for an impact pathway where radiation forcing has increased by 8.5 W/m2 at the end of the century compared to 1750 and delivers global warming of approximately 4.4 °C temperature increase without reducing any carbon emission.
Transition Risks	NDC	Taiwan has proposed National Determined Contribution (NDC), a net zero target by 2050, a reduction of 24% by 2030, and 12 goals.
	NZE	“The Net Zero by 2050 A Roadmap” aims to maximize technological feasibility, cost-effectiveness, and social acceptance without relying heavily on negative emission technologies, while ensuring economic growth and stable energy supply.
	SSP1-1.9、SSP1-2.6 SSP3-4.5 SSP5-8.5	Shared Socioeconomic Pathway, SSP SSP1: Best scenario: the world moves towards sustainable development, low energy consumption, and the popularization of renewable energy. SSP3: Different countries are competing against each other without cooperation, so the technological development is slow and there are almost no reduction measures or adaptation plans. SSP5: Heavy use of fossil fuels, low investment in alternative energy sources, but fair distribution of resources to adapt to climate impacts.

Physical Risk Assessment

	Extreme Rainfall - Flooding Risk	Water resource shortage	Rising sea level	High temperature
Climate scenario	RCP 4.5 RCP 8.5	RCP 4.5 RCP 8.5	Global: SSP5-8.5 with an average increase of 0.63~1.01 meters [1] Taiwan: SSP5-8.5 with an average increase of 1.2 meters [2]	RCP 2.6 RCP 4.5 RCP 6.0 RCP 8.5
Tools to use	Dr. A Climate Change Disaster Risk Adaptation Platform	Aquaduct, a water risk tool developed by the World Resources Institute (WRI)	Coastal Risk Screening Tool developed by Climate Central in the United States	The Taiwan Climate Change Projection Information and Adaptation Knowledge Platform (TCCIP)
Evaluation results				
Headquarters Office Building	The second headquarters is at high risk. The risk was taken into consideration during the design phase, so the impact is not significant.	No impact	No impact	Higher air conditioning electricity expenses, which is a mild risk
Construction sites	Three construction sites are at mild risk, and one site is at high risk The construction plans of both the existing and newly established factory areas come with adaptation plans such as drainage and disaster prevention training to respond to flooding, so the impact is not significant.	Some construction sites are classified as mild to moderate risks. However, considering the industrial nature, secondary water can be used to clean vehicles or reduce dust emission, etc., and it can be reused. Therefore, the impact is not significant.	No impact	High temperatures can cause heat stroke, heat exhaustion, and pose a threat to labor health. Therefore, corresponding standards are in place at construction sites around the world, such as the "Overall Occupational Safety and Health Management Plan" to monitor external temperatures, arrange appropriate working hours, and provide ventilation facilities (such as electric fans), shade facilities (rest areas), drinking water, and appropriate amounts of salt (sour plums, etc.) for workers, so the impact is not significant.

Note 1.IPCC AR6 WG1- Physical Science Basis Report Note 2.The National Science and Technology Center for Disaster Reduction (NCDR) further evaluates the situation in Taiwan using the IPCC AR6 WG1 Physical Science Basis Report.

Physical Risk

Extreme Rainfall - Flooding Risk - High Risk at Second Headquarters

The area where the second headquarters is located is adjacent to the Keelung River, with a relatively low terrain. Since the government established the Beitou Shilin Technology Park here, multiple flood control plans have been carried out.

The risk of flooding was taken into consideration for the second headquarters during the construction phase and multiple adaptation plans have carried out to address this risk. The assessment shows the threat of flooding can be effectively mitigated.

1. Firstly, we conducted a measurement on the current state of the land. The results report confirms the elevation of the three roads and adjacent land around the base, as well as the flow direction of the ditches around the base, and determines that the base is located at a relatively high point.
2. To respond to the expansion of the drainage system of the Zhoumei Pumping Station and Beitou Shilin Technology Park next to the base, and connect them to the nearby Wufengang Creek, large-scale flood control policies and design have been carried out.
3. The height difference between the head and tail of the north-south road on the west side of the base is close to two meters, ensuring that the base is located at a relatively high point, so that flood water can flow downstream along the road surface without entering the building.
4. The building should be equipped with multiple layers of foundations and raised layer by layer, and must be higher than the road surface elevation layer by layer.
5. Giant waterproof gates and multiple intercepting ditches are set up at the entrance of the vehicle/motorcycle parking lot below the base to ensure that there will be no water inflow during little or heavy rainfall.
6. The base is built with front and rear squares and buffered by the surrounding green spaces, so that the water can be drained into the surrounding ditches to prevent water accumulation and floods.
7. There are emergency response sandbags around the building to meet emergency needs.

Physical Risk

Extreme rainfall - flooding risk -3 sites are at mild risk and 1 site is at high risk

To manage the risk of flooding on the construction site, the owner is responbible for workign with CTCI and other contractors to provide relevant protective measures. To fulfil our responsibility and ensure that no flooding occurs during the construction period, CTCI specifies the construction method of the "drainage system in the construction area" in its construction plans for both the existing and newly construction sites globely, regularly clean up accumulated sediment, and adhere to the principle of "disaster prevention" over "disaster relief". During the flood season (from May to December each year), the "Self inspection form for disaster prevention and reduction at the construction site during the flood season" is checked at least once a month. When a typhoon strikes, we will have a typhoon prevention plan according to the "Checklist for Typhoon Prevention Work", such as inspecting the drainage system and ditches to ensure no cloggage, fastening the tower crane firmly with ropes, leveling the suspension rods, and examining the strength of the typhoon. If the typhoon reaches a strong level (wind speed ≥ 51.0m/s, wind speed above level 16), the fence will be removed to ensure safety. The above adaptation plan, along with training on disaster prevention can enhance our employees' ability to respond to disasters in the future. Therefore, evaluation can effectively mitigate the threat of flooding and ensure the safety of our customers and CTCI's own property and personnel.

Physical Risk

High temperature - higher air conditioning electricity expenses, which is a mild risk

According to NCDR research, under the RCP8.5 scenario, the average annual temperature rise in northern Taiwan between 2021 and 2040 can reach a maximum of 2.2 degrees Celsius, which will increase the electricity load for air conditioning. Taking the company headquarters as an example, compared to 2023, the electricity consumption for air conditioning will increase by about 400,000 degrees Celsius every year and the electricity bill will increase by about NT$2.2 million.

We provide the best performing air conditioning at the headquarters and encourage our employees to use it wisely, such as by increasing the indoor air conditioning temperature, turning off the air conditioning system 1 hour in advance at 5PM, and adjusting the time to close the electric roller blinds. The personnel managment cost is approximately NT$550,000.

Transition risks assessment

Risk Types	Operational and Financial Impact			Response Action Plan
	Suppliers	Organization	Customers	
Carbon tax/carbon fee	Higher procurement costs	Higher operational costs	—	• Search for low-carbon emission suppliers and purchase locally • Establish the CTCI Supplier Net Zero Alliance to encourage suppliers to reduce carbon emissions. • Moderately Pass on the increase in costs to customers • Implement carbon reduction goals and meet SBTi audit passing standards • Promote multiple reduction measures, such as by using high-efficiency equipment, installing electric stakes, and replacing gasoline vehicles with electric vehicles • Switch to green power
Voluntary agreement	—	Lower amount in new contracts(lower competitiveness and more customer churn) Reputation impact	—	
The transformation of low-carbon technology is not as good as expected	—	Lower amount in new contracts(lower competitiveness and more customer churn)	—	• Continue to develop green engineering technology and providing net zero EPC value services to enhance our market competitiveness • Continine to develop intelligent technology capabilities such as "iEPC, Digital Twin" • Strengthen promotion to customers, visit owners with sales representatives to explain the benefits of "Digital Twin", and apply iEPC, Digital Twin and other technologies to projects • Collect user feedback and experience to optimize the system and make the system more complete
Requirements for building efficiency regulations and standards	Higher procurement costs	—	Lower amount in new contracts (lower competitiveness and more customer churn because customer needs are not met)	• Search for low-carbon emission suppliers and purchase locally • Establish CTCI Supplier Net Zero Alliance to encourage suppliers to reduce carbon emissions.
Higher raw material price	Higher procurement costs	—	Lower amount in new contracts(customers are not likely to invest)	• Establish long-term relationshiop with suppliers (based on quantity pricing) • Sign long-term supply contracts for bulk engineering raw materials • Take hedging measures for major metal purchases • Establish inventory mechanism • Shorten the design timeline and keep track of procurement quantities more precisely
Customers may spend less on reducing high carbon emissions.	—	—	Lower amount in new contracts (high carbon emission enterprises may invest less in net zero, so CTCI may miss opportunities in low-carbon green energy industry)	• Continue to develop green engineering technology and providing net zero EPC value services to enhance our market competitiveness • Continine to develop intelligent technology capabilities such as "iEPC, Digital Twin" Provide engineering and technical services for introducing CCUS into gas power plants

Climate Opportunity Assessment

Opportunity Type	Financial impact			Response Action Plan
	Suppliers	Organization	Customers	
The government's net zero plan can drives enterprise investment	—	Higher amount in new contracts (in line with the government's development goals and the Company's strategic development)	Higher amount in new contracts (CTCI meets the ESG requirements for bids and improves its competitiveness in winning bids)	• Continue to develop green engineering technology and providing net zero EPC value services to enhance our market competitiveness • Continine to develop intelligent technology capabilities such as "iEPC, Digital Twin" • Establish partnerships and strengthen cooperation with government engineering execution units and investment enterprises • Signed a cooperation agreement with the Industrial Technology Research Institute, signed up as the convener of the carbon capture team in the Taiwan-US CCUS alliance, and established a high-tech development committee to seize business opportunities and gain technological competitiveness.
Promote green engineering and diverse operations	—	Higher amount in new contracts (in line with the global trend of net zero and the Company's strategic development)	—	
Energy saving buildings	—	Lower operating costs Higheramount in new contracts	—	• The first headquarters of CTCI has earned the Green Building Label, while the second headquarters has earned the Smart Green Building Label. • Introduce green engineering to Customer's projects
Higher energy efficiency	Lower operating costs	—	—	• Replace with high-efficiency and energy-saving equipment • Strengthen energy usage behavior management
R&D Innovation	Lower operating costs (introducing in the design phase to achieve a win-win situation for CTCI and our suppliers)	—	Higher amount in new contracts (we can gain more competitiveness for winning bids)	• Continue to develop green engineering technology and providing net zero EPC value services to enhance our market competitiveness • Continine to develop intelligent technology capabilities such as "iEPC, Digital Twin" • Strengthen promotion to customers, visit owners with sales representatives to explain the benefits of "Digital Twin", and apply iEPC, Digital Twin and other technologies to projects • Collect user feedback and experience to optimize the system and make the system more complete • Establish partnerships and strengthen cooperation with government engineering execution units and investment enterprises
Recycled materials	Lower operating costs (more competitiveness)	—	—	• Track the supply of recycled material suppliers more precisely

Risk Cases	CTCI was levied carbon tax/carbon fee	Suppliers was levied carbon tax/carbon fee and passed on to CTCI	Customers may spend less on reducing high carbon emissions.
Risk Description	• The Ministry of Environment is expected to levy carbon fee starting from 2025. Although CTCI is not subject to fee collection as required by regulations, considering the future net-zero trend, the Ministry of Environment is expected to expand the fee collection range and increase rate. Once CTCI is included, operating costs will increase. Taking the greenhouse gas emissions of the headquarters buildings as the assessment scope, the fee is set to start from the Ministry of Environment's fee collection year (2025). • CTCI is reduced year by year in accordance with SBTi standards, and needs to be reduced by 45% by 2030. Under this scenario, a carbon fee is estimated based on emissions, and the fee is set at NT$300~1,500 per ton.	• The European Union will collect CBAM certificates in 2026, and the United States plans to implement the Clean Competition Act (CCA). It is expected that other countries may follow suit. If our company has local project cases or suppliers are subject to levies and pass them on, we will Increase the company's procurement costs. • To understand the maximum risk to CTCI, we will make several assumptions for evaluation: firstly, all countries will follow suit, so there is no exception for all suppliers; 2. To simplify the evaluation, no carbon offset will be considered; 3. All fees paid by the supplier will be transferred to CTCI.	• In the global trend of net zero, there will be a significant reduction in fossil fuel use and a shift towards investing in renewable energy. The investment amount in renewable energy in 2023 is already equivalent to fossil fuels, and it is expected to exceed fossil fuels in the near future. The International Energy Agency also stated that with global commitment to achieve net zero, oil demand will decline after 2024, which will have a strong impact on the company's original refining and petrochemical business.
Climate scenario	NDC、NZE	SSP1-1.9、SSP3-4.5	SSP1-1.9、SSP3-4.5
Financial impact	2025~2030 The annual carbon fee expenditure is approximately NT$0.48~3.17 million (considering the mitigation pathway, our emissions has been less every year)	2030 compared to 2023 Domestic procurement costs increased by 0.10%~0.80% Foreign procurement costs increased by 0.30%~2.02%	The new contract value for refining and petrochemicals in 2030 is estimated to decrease by approximately 3.35% to 28.56% compared to the average from 2021 to 2023.
Response Action Plan	• Implement carbon reduction goals and meet SBTi audit passing standards • Promote multiple reduction measures, such as by using high-efficiency equipment, installing electric stakes, and replacing gasoline vehicles with electric vehicles • Switch to green power	• Search for low-carbon emission suppliers and purchase locally • Assist suppliers to reduce carbon emissions through the CTCI Supplier Net Zero Alliance • Moderately Pass on the increase in costs to customers	• Set up an energy transition strategy team to search for transition opportunities, such as green hydrogen/ammonia and carbon capture and reuse (CCUS) business opportunities. • Continue to develop green engineering technology and providing net zero EPC value services to enhance our market competitiveness Continue to develop intelligent technologies such • as iEPC and Digital Twin
Response plan costs	About NT **$10.35** million invested in 2024	About NT **$13.92** million/year	About NT **$ 173** million

Opportunity Cases	The government's net zero plan can drives enterprise investment	Promote green engineering and diverse operations	R&D Innovation
Opportunity Description	• The government is pushing for the "12 Key Strategic Action Plans for Net Zero Transformation" by taking a examplary step to engage more enterprises to create market demand through policies, and support industrial development through incentive and support measures. There are potential development opportunities for CTCI: • Renewable energy and hydrogen energy: The government plans to achieve a total installed capacity of 13.1GW, 31GW, and 891MW repectively for offshore wind, solar, and hydrogen power generation by 2030. • Low carbon and negative carbon technologies: The government plans to promote geothermal, biomass, and marine energy, and has set a carbon capture, utilization, and storage target of 1.76-4.6 million tons by 2030.	• Circular economy (incineration plants, biomass energy centers): With the increase of population, existing incinerators are old and low in processing capacity and have to be added, renovated or expanded. • Recycled water plants and desalination plants: As Taiwan is constantly facing water resource shortage such as drought, CTCI has the ability to treat and reuse wastewater in a way to meet electronic standards. Currently, the government and serverl high-tech parks already have plans to build more factories. • Track construction: Taiwan plans to build 12 railway tracks from 2028, with an electromechanical budget of about NT$180 billion. The company has experience in electromechanical system integration and independent design capability of power supply system, which are our competitive advantages in winning future bids.	• CTCI is devoting to iEPC and Digital Twin with emphasis on digitization, collaboration, automation, visualization, and intelligence to optimize the efficiency and quality of each stage of EPC and has seen significant improvement in work safety and cost savings. • Through long-term promotion of green technology, we are committed to bringing customers sustainable benefits throughout the building lifecycle to win their trust and cooperation opportunities by reducing energy and resource consumption, and cutting pollutant emissions for less environmental impact and cost expenditures.
Climate scenario	NDC	NDC	—
Financial benefits	• Renewable energy and hydrogen energy: The government expects to allocate a budget of approximately NT$210.7 billion by 2030 • Low carbon and negative carbon technologies: The government expects to allocate a budget of approximately NT$41.5 billion by 2030	• Circular economy (incineration plants, biomass energy centers): with potential business opportunities of approximately NT$140 billion • Renewable water plants and desalination plants: with potential business opportunities of approximately NT$150 billion • Railway transportation: The budget for the electromechanical system of 12 railway tracks is approximately NT$180 billion	IEPC, Digital Twin, and green technology can all be applied to all kinds of projects, and their benefits can be demonstrated by the "Government Net Zero Plan" and “Promoting Green Engineering and Diverse Operations".
Response Action Plan	• Set up an energy transition strategy team to search for transition opportunities, such as green hydrogen/ammonia and carbon capture and reuse (CCUS) business opportunities. • Continue to develop green engineering technology and providing net zero EPC value services to enhance our market competitiveness • Continue to develop intelligent technologies such as iEPC and Digital Twin • Establish partnerships and strengthen cooperation with government engineering execution units and investment enterprises	• Continue to develop green engineering technology and providing net zero EPC value services to enhance our market competitiveness • Continue to develop intelligent technologies such as iEPC and Digital Twin • Establish partnerships and strengthen cooperation with government engineering execution units and investment enterprises • Signed a cooperation agreement with the Industrial Technology Research Institute, signed up as the convener of the carbon capture team in the Taiwan-US CCUS alliance, and established a high-tech development committee to seize business opportunities and gain technological competitiveness.	• R&D and maintenance of technologies such as iEPC and Digital Twin • Strengthen promotion to customers, visit owners with sales representatives to explain the benefits of "Digital Twin", and apply iEPC, Digital Twin and other technologies to projects • Collect user feedback and experience to optimize the system and make the system more complete
Response plan costs	About NT$ 173 million	About NT$ 167 million	About NT$ 167 million

Greenhouse Gas Management

In 2023, the scope 1 and scope 2 emissions of the CTCI headquarters building are 22 and 1,070 ton-CO2e, respectively, while scope 1 and scope 2 emissions of all CTCI construction sites worldwide are 4,226 and 4,176 ton-CO2e, respectively. Compared to the 2022 base year, CTCI has reduced GHG emissions by 13.6%, exceeding the 2023 carbon reduction target set by SBTi.

Furthermore, we have been requested by international investors to fill out CDP (Carbon Disclosure Project) questionnaire and got A- (leadership) score for carbon disclosure and A- (leadership) score for supply chain engagement in 2023. In terms of DJSI performance, the Company has achieved repeated success, being selected as a component of the Dow Jones Sustainability Emerging Markets Index for 9 consecutive years, and ranking in the top 1% by S&P Global in its Sustainability Yearbook, outperforming its global peers.

Each year, we continue to check if there are rooms for improvement in terms of climate change management by filling out such questionnaire, examining the change in questions, as well as benchmark learning.

Moreover, our responses to climate change risks and opportunities extend beyond ourselves by working with our upartners upstream and downstream. We encourage them to work with us in terms of identification, analysis, calculation, and reduction of the greenhouse effect and emissions reduction, so we can disclose our indirect carbon emissions.

To show further commitment to carbon emissions reduction, CTCI's carbon reduction targets based on SBTi's 1.5°C scenario with baseline year 2022 approved by SBTi. Our short-term goal is to achieve an absolute reduction of 21% in greenhouse gases (Scope 1 and Scope 2) by 2025. The mid-term goal is to achieve an absolute reduction of 45% in greenhouse gases (Scope 1 and Scope 2) by 2030. The long-term goal is to achieve net zero by 2050. We will also build our mitigation pathway to achieve net zero by 2050.

COMPANY/FINANCIAL INSTITUTION	TARGETS: NEAR TERM	TARGETS: LONG TERM	TARGETS: NET-ZERO	ORGANIZATION TYPE	
CTCI Corporation ★ Taiwan	1.5°C	1.5°C	2050	Company	View less

Date published/updated
2024

Sector
Construction and Engineering

Target summary
Near term: 1.5°C by 2030
Long term: 1.5°C by 2050
Net zero: Committed by 2050
★ Business Ambition for 1.5°C campaign member

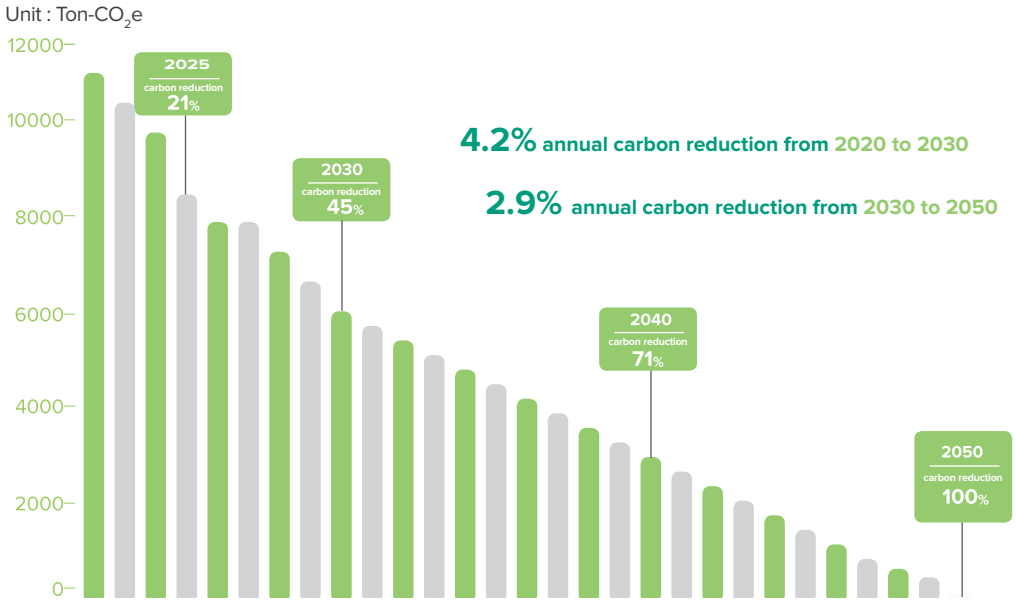
Target
Overall Net-Zero Target: CTCI Corporation commits to reach net-zero greenhouse gas emissions across the value chain by 2050. Near-Term Targets: CTCI Corporation commits to reduce absolute scope 1 and 2 GHG emissions 42% by 2030 from a 2022 base year.* CTCI Corporation also commits that 71.00% of its suppliers by emissions covering purchased goods and services, will have science-based targets by 2028. * The target boundary includes biogenic land-related emissions from bioenergy feedstocks. Long-Term Targets: CTCI Corporation commits to reduce absolute scope 1 and 2 GHG emissions 90% by 2050 from a 2022 base year.* CTCI Corporation commits to reduce absolute scope 3 GHG emissions covering purchased goods and services 90% within the same timeframe * The target boundary includes biogenic land-related emissions from bioenergy feedstocks.

A.Short-Term Carbon Emissions Reduction Strategy (2022-2030)

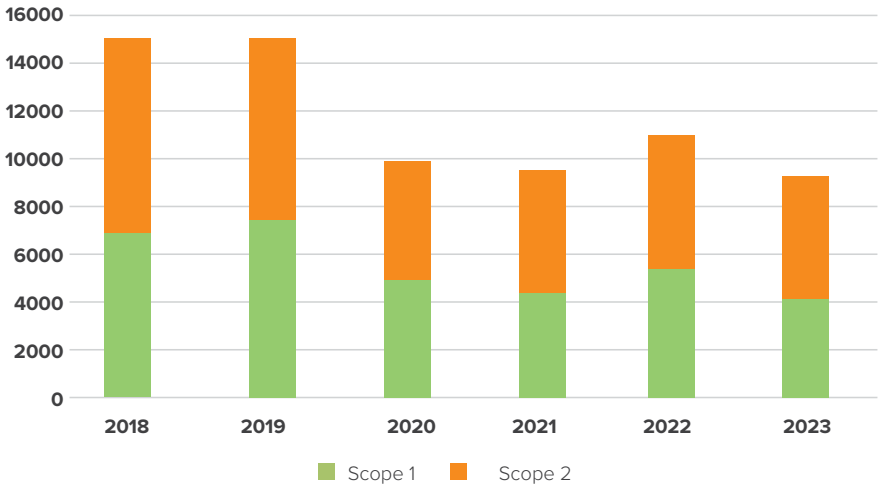
Research and develop green technologies, digitalization, CCUS technologies, as well as increase the utilization of renewable energy.

B.Long-Term Carbon Emissions Reduction Strategy (2030-2050)

Adopt energy storage technologies, utilize decarbonized energy sources, and apply CCUS technologies. Once various reduction efforts and carbon removal have been implemented, if there are still carbon emissions that cannot be reduced due to current technological limitations, moderate carbon offset (less than 10% of GHG emissions in the base year) purchases will be carried out to help us achieve the net-zero target.



2022-2050 CTCI Net Zero Roadmap



CTCI GHG (Ton-CO_2e)

2023 Goal

Greenhouse gas emissions(Ton-CO_2e)

9,602 (**12.6%**↓ compared with the base year)

2023 Achieved

9,494 (**13.6%**↓ compared with the base year)

Achieve 2023 goals

2024 Goal

9,141 (**16.8%**↓ compared with the base year)

Scope 1 & Scope 2 Greenhouse Gas Emissions (Unit：Ton-CO_2e)

Location	Scope	Annual Performance[Noto7] (CO_2e)			
		2020	2021	2022	2023
Headquarters Building	Scope 1	142	159	34	22
	Scope 2 (Location Baseline)	2,557	2,445	2,509	2,555
	Scope 2 (Market Baseline)	2,557	2,445	2,458	1,070
Subtotal	Scope 1+2 (Location Baseline)	2,699	2,604	2,543	2,577
	Scope 1+2 (Market Baseline)	2,699	2,604	2,492	1,092
Global Construction Sites	Scope 1	4,835	4,318	5,467	4,226
	Scope 2 (Location Baseline)	2,408	2,677	3,028	4,176
	Scope 2 (Market Baseline)	2,408	2,677	3,028	4,176
Subtotal	Scope 1+2 (Location Baseline)	7,243	6,995	8,495	8,402
	Scope 1+2 (Market Baseline)	7,243	6,995	8,495	8,402
Headquarters Building + Global Construction Sites Total	Scope 1	4,977	4,477	5,501	4,248
	Scope 2 (Location Baseline)	4,965	5,122	5,537	6,731
	Scope 2 (Market Baseline)	4,965	5,122	5,486	5,246
	Scope 1+2 (Location Baseline)	9,942	9,599	11,038	10,979
	Scope 1+2 (Market Baseline)	9,942	9,599	10,987	9,494

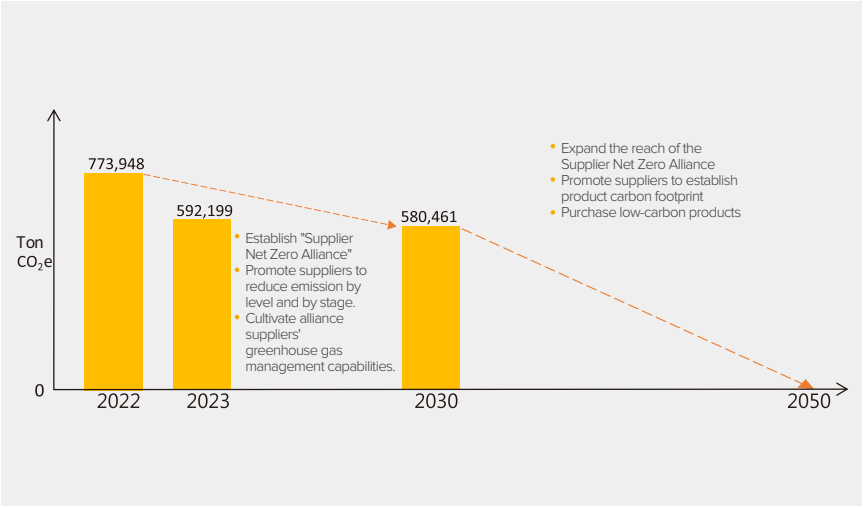
Note1.Baseline year: 2022.
Note2.Based on the SBTi 1.5° C scenario, our goal is to reduce carbon emissions by 4.2% every year from the baseline year, which will be an estimated carbon emmissions reduction of 16.8% in 2024.
Note3.Inventory methods include ISO 14064-1:2018, the GHG Protocol - An Enterprise Accounting and Reporting Standard, GHG Inventory Registry Operation Guidelines. GWP values are based on 2021 IPCC AR6. Emissions factors are based on Environmental Protection Administration's GHG Emission Factor Management Table v. 6.0.4.
Note4.Carbon emissions were added second headquarters in 2022
Note5. The GHG emissions have been verified by an independent third party (SGS Taiwan Ltd.).
Note6. Scope 1 & 2 are named Category 1 & 2 in ISO14064-1:2018.
Note7. Greenhouse gas include CO_2、CH_4、N_2O、HFCs、PFCs、SF_6 and NF_3

Since 2022, CTCI carried out an inventory on its Scope 3 greenhouse gas emissions. Scope 3 emissions reduction is done with 2022 as the baseline year. The near-term supply chain engagement target will be set based on the SBTi's "well below 2°C" scenario and achieved within five years from 2023. The participating suppliers will cut their carbon emissions at least by 2.5% per year. In the long-term, the goal is to lead our suppliers towards net zero. If there are residual carbon emissions that cannot be eliminated by new technologies and new machines

(less than 10% GHG emissions of baseline year), we will encourage the suppliers to purchase carbon credits as offset and reach the net zero goal by 2050. In 2023, there was a 23.5% decrease in scope 3 GHG emissions compared to the base year, and CTCI will continue to march towards the net zero goal.

Moreover, CTCI has established the "Supplier Net Zero Alliance" to nurture the greenhouse gas management capabilities of suppliers that have participated in the Net Zero Alliance. In the future, we will encourage our suppliers to reduce their greenhouse gas emissions in stages and establish a reward system to achieve the goal of the setting near-term supply chain engagement within 5 years. It is expected that by 2030, the Scope 3 carbon emission intensity of CTCI per million in revenue will not exceed the base year (2022). For the long term goal, CTCI will purchase low-carbon products, make the Supplier Net Zero Alliance more influential, and encourage our suppliers to calculate their product carbon footprints, reduce carbon emissions by 4.5% by year, and lead our suppliers towards net zero in 2050, the long-term

target. For residual carbon emissions that cannot be eliminated by new technologies and new equipment (less than 10% GHG emissions of baseline year), encourages the suppliers to purchase carbon credits as offset to achieve the net zero goal. Please refer to the "Capacity Building Projects" section of Sustainable Supply Chain Management for the effectiveness of Net Zero Alliance.



Scope 3 Greenhouse Gas Emissions (Unit：Ton-CO_2e)

Categories	Corresponding to ISO14064-1:2018	Emissions				Remark
		2020	2021	2022	2023	
Category 1. Purchased goods and services	Category 4	527,448	603,057	737,700	540,851	• EEIO method • Industry-specific total amount x Industry-specific carbon emission coefficient
Category 2. Capital goods	Category 4	887	586	343	2,223	• EEIO method • Industry-specific total amount x industry-specific carbon emission coefficient
Category 3. Fuel- and energy-related	Category 4	1,970	2,182	2,430	2,078	• Emission factor method • Oil consumption and electricity consumption x carbon emission
Category 4. Upstream transport	Category 3	-	-	25,624	37,012	• EEIO method • Industry-specific total amount x Industry-specific carbon emission coefficient
Category 5. Waste	Category 4	22	35	965	1,394	• Emission factor method • Weight of each waste x carbon emission coefficient

Categories	Corresponding to ISO14064-1:2018	Emissions				Remark
		2020	2021	2022	2023	
Category 6 Business travel	Category3	36	825	230	547	• Emission factor method • Total mileage x carbon emission coefficient
Category 7 Employee commuting	Category3	1,025	1,025	1,112	1,102	• Emission factor method • Total mileage x carbon emission coefficient
Category 8 Upstream leased assets	Category4	-	180	622	1,885	• Emission factor method • Total mileage of rental vehicles x carbon emission coefficient
Category 9 Downstream transport	Category3	-	-	0	0	• Not relevant, since there are no such activities within our boundary.
Category 10 Processing of sold products	Category5	-	-	0	0	• Not relevant, since there are no such activities within our boundary.
Category 11 Use of sold products	Category5	-	-	0	0	• We basically follow the specifications in the ITB (Invitation to Bid) in our EPC (Engineering, Procurement, Construction) projects. We do not have decisive impact on the end-of-life treatment of sold products.
Category 12 End-of-life treatment of sold products	Category5	-	-	0	0	• We basically follow the specifications in the ITB (Invitation to Bid) in our EPC (Engineering, Procurement, Construction) projects. We do not have decisive impact on the end-of-life treatment of sold products.
Category 13 Downstream leased assets	Category5	-	-	0	0	• Not relevant, since there are no such activities within our boundary.
Category 14 Franchises	Category5	-	-	0	0	• Not relevant, since there are no such activities within our boundary.
Category 15 Investment	Category5	-	-	4,922	5,107	• Includes our subsidiaries' Scope 1 & 2 emissions based on the inventory carried out in 2023.
Total		531,388	606,882	773,948	592,199	

Note：1. Scope 3 emissions inventory is done based on the "Corporate Value Chain (Scope 3) Accounting and Reporting Standard," developed by WRI & WBCSD in 2011, with 2022 as the baseline year.
2. Beginning from 2022, CTCI will carry out Scope 3 GHG inventory. The emissions data from 2020 to 2021 is based on Scope 3 screening results.
3. The foreign carbon emission coefficients used in EEIO are sourced from international databases https://www.exiobase.eu/. 4. Partial data for the year 2022 has been updated according to SBTi review feedback.
5. According to ISO 14064-1:2018, indirect greenhouse gas emissions require significant identification. Categories 1, 5, and 8 have been verified based on the identification results, and the data has been verified by the third party.

Carbon Footprint Promotion Plan

As a non-manufacturing engineering service company, CTCI does not have a fixed single product and cannot directly introduce the carbon footprint of products. However, in the face of the current urgent issue of carbon reduction, CTCI also actively participates and provides customers with carbon footprint management project services, such as the "Solid State Battery Product Life Cycle Assessment Consulting Service Project" in 2022 that assists customers in assessing the product life cycle carbon footprint so as to propose carbon reduction strategies and improvement suggestions. This is a demonstration of CTCI's support and contribution to customers' sustainable development.

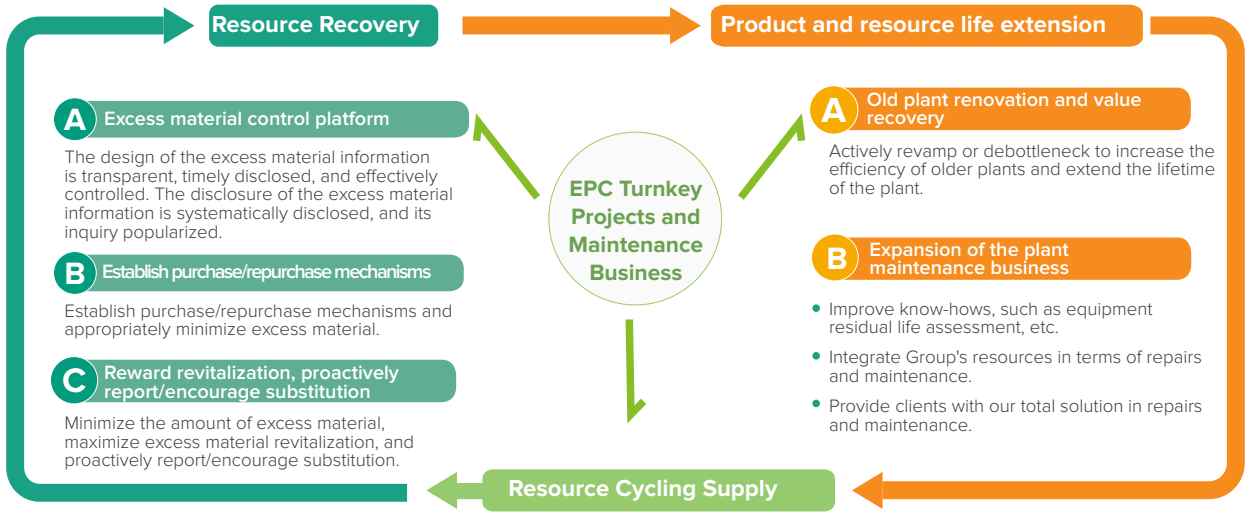
In addition to project services, CTCI plans to actively develop the carbon footprint management to reduce the differences in the scale and nature of projects, and to add comparability and reproducibility. Product Category Rules (PCR) for EPC engineering services will be completed in 2024, and the carbon footprint assessment and management will be carried out in accordance with this rule, as well as obtaining ISO 14067 carbon footprint verification and carbon label.

Carbon Pricing Promotion Plan

CTCI continues to pay attention to the development trend of carbon pricing domestically and internationally. For the entire company's scope 1 and 2 emissions, plans are already in place to introduce mechanisms, including the implementation of a shadow price mechanism. This includes a potential carbon fee of NT$300 from Taiwan's Ministry of Environment or adopting the EU ETS trading price. The collected fees are planned to be used as managing funds in site energy efficiency improvement measures, employee/department incentives, green power usage, and R&D funds. It is hoped that the pricing mechanism can contribute to influence the daily behavior of colleagues, optimize the company's management mechanism, review the effectiveness of project implementation, and develop related business opportunities.

Circular Economy

CTCI Group actively uses its core engineering capabilities to pave the way towards a circular economy model in engineering for its peers. There are three main aspects, which are resource cycling supply, resource recovery, and product and asset life extension. These also match three other aspects, namely strategy formulation, management and execution, and business development. In terms of resource cycling supply, CTCI proactively provides renewable, recyclable, and biodegradable resources, and changes product design thinking appropriately. In terms of resource recovery, when carrying out EPC maintenance work, CTCI would make every possible effort to convert waste materials into resources instead of downgrading them for recycling. In terms of extending the life of products and assets, CTCI tries to maintain their economic value through professional repairing, upgrading and remanufacturing. In addition, thanks to the fact that circular economy and waste reuse concepts have been gradually adopted by the industry, the total power generation capacity of the EfW plants in Taiwan, operated by our subsidiary ECOVE, has reached approximately 1,129 GWh a year.



A Value engineering/ Constructability assessment

Come up with application strategies for formed steel and concrete at quoting stage and at the beginning of a project to save unnecessary applications of materials in the design stage.

B Application strategy of formed steel and concrete

(Note: Steel is a recyclable material)
Formed steel are prioritized for pipe structures
Formed steel are prioritized, unless:
(1) A significant discrepancy in the project schedule, labor costs, or cost obligation may jeopardize the project. In that case, we will consider using reinforced concrete to build structures.
(2) Environmental factors are involved and local precast concrete vendors are available. In that case, we would consider using precast concrete to build structures.

C Renting instead of buying; use recyclable products

- Office equipment in the headquarters building that we rent instead of buying: company cars, photocopy machines, office supplies, and 3C product.
- The temporary office on the construction site uses modular containers for the reuse and reduce of the waste.
- Temporary rental of construction site office equipment.
- Rental of construction site equipment and vehicles.

Circular Economy Model	Strategies	Action Plans
Resource recovery	Application strategy of formed steel and concrete (Note: Steel is a recyclable material)	• Come up with application strategies for formed steel and concrete at quoting stage and at the beginning of a project to save unnecessary applications of materials in the design stage.
	Application strategy of formed steel and concrete (Note: Steel is a recyclable material)	• Formed steel are prioritized for pipe structures Formed steel are prioritized, unless: (1) A significant discrepancy in the project schedule, labor costs, or cost obligation may jeopardize the project. In that case, we will consider using reinforced concrete to build structures. (2) Environmental factors are involved and local precast concrete vendors are available. In that case, we would consider using precast concrete to build structures.
	Renting instead of buying; use recyclable products	• Office-related goods at the headquarters that we rent instead of buying include: company cars, photocopy machines, office supplies, and IT products. • The temporary office on the construction site uses modular containersfor the reuse and reduce of the waste. • Temporary rental of construction site office equipment. • Rental of construction site equipment and vehicles.
Resource recovery	Excess material control platform	The design of the excess material information is transparent, timely disclosed, and effectively controlled. The disclosure of the excess material information is systematically disclosed, and its inquiry becomes more accessible.
	Establish purchase/ repurchase mechanisms	Establish purchase/repurchase mechanisms and appropriately minimize excess material.
Product and resource life extension	Reward revitalization, proactively report/ encourage substitution	Minimize the amount of excess material, maximize excess material revitalization, and proactively report/encourage substitution.
	Old plant renovation and value recovery	Actively revamp or debottleneck to increase the efficiency of older plants and extend the lifetime of the plant.
	Expansion of the plant maintenance business	• Improve know-hows, such as equipment residual life assessment, etc. • Integrate Group's resources in terms of repairs and maintenance. • Provide clients with our total solution in repairs and maintenance.

Environmental and Resource Management

Environmental Management System

To stay close to the broader and macro environmental trends, CTCI has taken into account multi-faceted environmental aspects within its business objectives by introducing the ISO 14001:2015 Environmental Management System. To facilitate its effectiveness and help us identify risks comprehensively, we take an integrated approach by combining it with the ISO 45001:2018 Occupational Health and Safety Management System into one HSE management system. This scope of HSE system spans across engineering, procurement, construction and commissioning, as well as any controllable and affected activities, products, and service at the construction sites; in other words, those that cover 100% of our revenue scope. Moreover, the system has been validated by a third-party validation company. To ensure the effectiveness of our environmental management system, not only do we carry out regular and nonregular internal auditing, we also invite third-party validators to conduct external audits on the CTCI headquarters and randomly-selected construction sites. In addition, CTCI follows the ISO 14001 Environmental Management System to conduct the compliance obligation of environmental protection-related laws and regulations, including the air, water, poison, waste, and other related regulations. Over the past five years, CTCI has no record of heavy fines for major environmental pollution. Our environmental policy is in accordance with the management system, and has been integrated with occupational safety and health policy statement into the HSE policy statement. We commit ourselves to environmental protection and sustainable development in the HSE policy statement and request our vendors to share the same commitment. We also communicate with our suppliers and partners on our commitment, looking forward to influencing them, so that we can together head towards sustainable development.

Statistics on Environmental Incident Penalty from 2020 to 2023

Year	Violation Incident	Number of Violation/ Fines	Non-Monetary Penalties
2023	General violation	1 case[Note 2]/ TWD 6,000	0 case
	Major violation [Note 1]	0 case	0 case
2022	General violation	1 case[Note 3]/ TWD 6,000	0 case
	Major violation	0 case	0 case
2021	General violation	3 cases[Note 3]/ TWD 18,000	0 case
	Major violation	0 case	0 case
2020	General violation	1 case[Note 4]/ TWD 6,000	0 case
	Major violation	0 case	0 case

Note 1：Major violations are defined as fines that exceed USD 10,000.
Note 2：In 2023, a fine was issued by the Department of Health, Kaohsiung City Government after a water-filled container breeding dengue fever mosquitoes in a warehouse outside the construction site was discovered. Subsequent measures were taken in accordance with regulations to address the issue.
Note 3：In 2022, one fine was issued, and in 2021, three fines were issued, all due to construction sites commencing new projects without their industrial waste management plans being reviewed and approved by the relevant authorities. Subsequent actions were taken to review and file these plans in accordance with regulations.
Note 4：In 2020, a fine was issued because a construction site failed to report changes to its waste management plan in accordance with the altered site conditions. Subsequent reporting and documentation were completed as required by regulations.

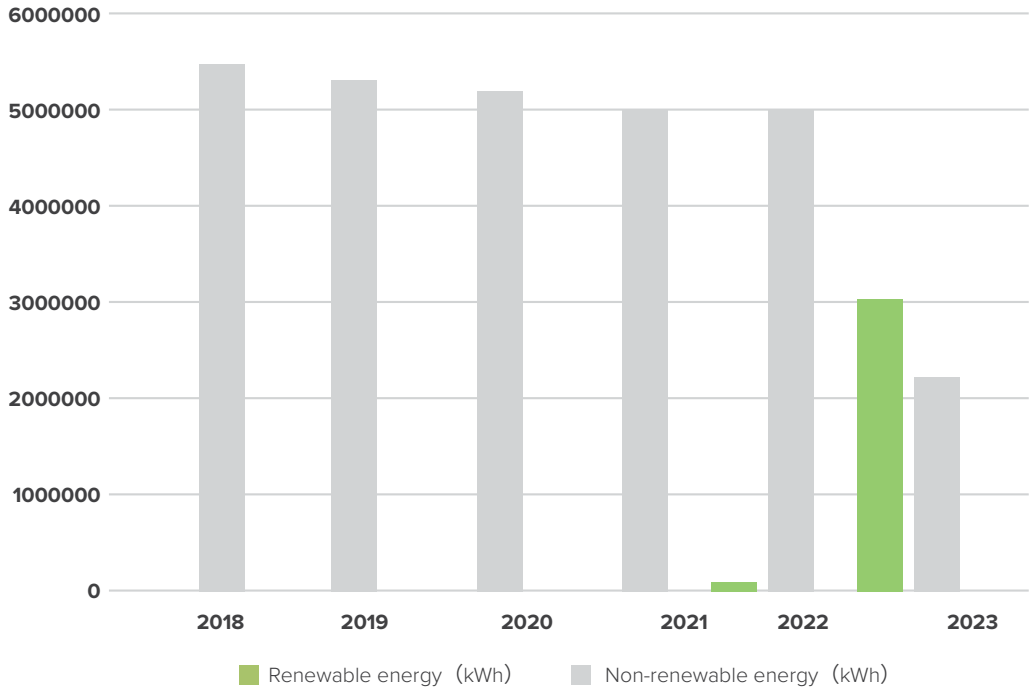
Energy

The largest amount of energy consumed at the headquarters building is purchased electricity, while gasoline and diesel are the primary sources of energy consumption during the construction processes. These comprise CTCI's main sources of greenhouse gas emissions. In 2023, the total non-renewable electricity consumption of the headquarters building and the construction sites combined was 10,598,244 kWh, while total consumption of gasoline and diesel combined was 1,539,534 liters. The total energy consumption of the headquarters building and the construction sites reached 1.02×10^8 MJ. The EUI value of the headquarters was 113.1 kWh /m^2 and the site energy intensity was 1,179,944 kWh/ million man-hours. The green power utilization rate of the headquarters has been increasing year by year, from 2% in 2022 to 58% in 2023. The combined energy consumption in the headquarters and construction sites dropped by 8% in 2023 compared to 2022. Moreover, we continuously monitor various energy consumption levels and energy audit, compiling performance statistics annually, and reports the results to the chairman. The aim is to analyze the energy efficiency of operations by observing the changes and trends over the years. We then use the results to formulate and implement relevant policies, and use them as reference when setting carbon emissions reduction and energy-saving targets in the future. That way, we can gradually fulfill the vision of low-carbon development.

Milestones and Target **Use of renewable energy**

- **2022** — **100** MWh of green electricity (100 TRECs)
- **2023** — **2,999** MWh of green electricity (2,999 TRECs)
- **2030** — **100%** use of green electricity in the headquarters building (45% use of green electricity across CTCI)
- **2050** — **100%** use of green electricity in the headquarters building, plus domestic and foreign construction sites (100% use of green electricity across CTCI)

Electricity usage of headquarters



Energy Consumption

Location	Energy Type	Unit	Annual Performance				Goal[Note7]		
			2020	2021	2022	2023	2023	Achieved or not	2024
1st, 2nd Headquarters buildings	Renewable electricity	kWh	-	-	100,000	2,999,018	1,303,703	O[Note8]	2,064,493
		MJ	-	-	$3.60x10^5$	$1.08x10^7$	$4.69x10^6$	O	$7.43x10^6$
1st, 2nd Headquarters buildings	Non-renewable electricity	kWh	5,022,983	4,869,793	4,828,530	2,162,214	4,989,033	O	4,866,409
		MJ	$1.81x10^7$	$1.75x10^7$	$1.74x10^7$	$7.78x10^6$	$1.80x10^7$	O	$1.75x10^7$
Company cars	Gasoline	Liter	16,533	14,803	14,580	9,270	21,196	O	20,672
		kWh	$1.50x10^5$	$1.34x10^5$	$1.32x10^5$	$8.40x10^4$	$1.92x10^5$	O	$1.87x10^5$
		MJ	$5.40x10^5$	$4.83x10^5$	$4.76x10^5$	$3.03x10^5$	$6.92x10^5$	O	$6.75x10^5$

Location	Energy Type	Unit	Annual Performance				Goal[Note7]		
			2020	2021	2022	2023	2023	Achieved or not	2024
Global construction sites	Electricity	kWh	4,193,434	5,134,454	5,913,183	8,436,030	7,965,589		6,743,443
		MJ	$1.51x10^7$	$1.85x10^7$	$2.13x10^7$	$3.04x10^7$	$2.87x10^7$		$2.43x10^7$
Global construction sites	Gasoline	Liter	143,789	175,221	207,979	266,857	178,066		150,745
		kWh	$1.30x10^6$	$1.59x10^6$	$1.89x10^6$	$2.42x10^6$	$1.57x10^6$		$1.37x10^6$
		MJ	$4.69x10^6$	$5.72x10^6$	$6.79x10^6$	$8.71x10^6$	$5.64x10^6$	O	$4.92x10^6$
Global construction sites	Diesel	Liter	883,021	1,004,079	1,829,948	1,263,40[8]	1,923,847		1,628,675
		kWh	$8.61x10^6$	$9.81x10^6$	$1.79x10^7$	$1.23x10^7$	$1.88x10^7$		$1.59x10^7$
		MJ	$3.10x10^7$	$3.53x10^7$	$6.43x10^7$	$4.44x10^7$	$6.76x10^7$		$5.72x10^7$
1st, 2nd Headquarters buildings + global construction sites	Non-renewable electricity + fuels	kWh	$1.93x10^7$	$2.15x10^7$	$3.06x10^7$	$2.54x10^7$	$3.35x10^7$	O	$2.91x10^7$
		MJ	$6.94x10^7$	$7.75x10^7$	$1.10x10^8$	$9.46x10^7$	$1.21x10^8$	O	$1.05x10^8$
1st, 2nd Headquarters buildings + global construction sites	Renewable and non-renewable electricity + fuels	kWh	$1.93x10^7$	$2.15x10^7$	$3.07x10^7$	$2.84x10^7$	$3.48x10^7$	O	$3.11x10^7$
		MJ	$6.94x10^7$	$7.75x10^7$	$1.11x10^8$	$1.02x10^8$	$1.25x10^8$	O	$1.12x10^8$

Note1: 1 kWh=3.6 MJ Note2: 1 kcal=4,184 J Note3: Vehicle heating value=7,800 kcal/liter. Sources: website of the Bureau of Energy, MOEA: "Energy Product Unit Heating Value Table " ≒ 32.6352 megajoules/liter Note4: Diesel heating value = 8,400 kcal/liter. Sources:website of the Bureau of Energy, MOEA: "Energy Product Unit Heathing Value Table" ≒ 35.1456 megajoules/liter Note5: Since our 2022 target for the energy usage per person at the first headquarters building and the energy usage per million working hours at construction sites is part of our materiality management, the energy usage needs to be reduced by 11.0% between 2018 and 2023 (2.2% reduction per year). As the second headquarters building was completed in 2022, the energy usage needs to be reduced by 2.2% between 2022 and 2023. Note6: The energy utilization rate of the first and second headquarters buildings is 58%. Note7: Both renewable and non-renewable electricity are included in our electricity target. Note8: Target is achieved when the adoption of renewable electricity exceeds the set target.

Energy Management Performance Indicators

Location	Indicator	Unit	Annual Performance				Goal		
			2020	2021	2022	2023	2023	Achieved or not	2024
1st, Headquarters building	EUI	kWh/ square meters	120.0	116.4	111.1	113.1	112.7	X[Note6]	109.9
Global construction sites	Energy Intensity[Note5]	kWh/ million working hours	571,876	781,831	1,058,736	1,179,944	1,440,705	O	1,038,000
1st, 2nd Headquarters buildings + global construction sites	Emission intensity	Tons of CO_2e/million NTD in revenue	0.38	0.31	0.35	0.21	0.48	O	0.47

Note1: Our target is based on 2022 energy management performance indicators and estimated working hours. Note2: The carbon emissions of each indicator are calculated based on the sum of Scope 1 and Scope 2 emissions.
Note3: Million turnover refers to the individual turnover for each year. Note4: As the second headquarters is not in routine use, the annual EUI cannot be calculated and is thus excluded.
Note5: The global construction site energy intensity should be calculated based on the total energy used, and the calculation method will be revised in 2023.
Note6: In 2023, the number of employees in the headquarters building has increased by 206, resulting in the failure of achieving EUI target in the first headquarters building. In 2024, the use of energy management system will be increased to monitor energy consumption.

In 2023, the headquarters building will implement relevant energy-saving measures for air-conditioning, lighting, sockets and elevators, and regularly review the performance. CTCI University provides energy-related courses to enhance employees' training in energy-saving measures and energy management. Company announcements are made from time to time to train the staff to develop energy-saving habits, establish an energy-saving corporate culture, and always regard energy conservation and carbon reduction as a major focus of daily work.

In 2023, a number of measures are implemented, which includes replacing business vehicles with electric vehicles, installing 55.08kW solar photovoltaic facilities at the 1st headquarters, and installing charging stations at the 1st headquarters' basement parking lot. Also, 43.56kW solar power generated from the 2nd headquarters' solar facilities became for self-use. The use of energy management system will be increased in the headquarters buildings in 2024 to analyze hot spots of power consumption and improve energy management.

Major energy conservation measures at global construction sites in 2023 include installing solar panels, small wind power generation fans, temperature and time control in air-con, adding green features to buildings, natural lighting, and using home appliances that have eco and energy-saving labels.

Major Energy Conservation Measures

Location	Item	Measures	Energy saved (kWh)	CO_2e reduced (kWh)
Headquarters building	Solar photovoltaic modules	1. Installation of solar photovoltaic modules in the first headquarters building 2. The second headquarters building's solar modules changed from wholesale to self-use	31,000	15.35
	Electric vehicles	1. Replacing business vehicles with EVs gradually based on their lifespan 2. Electric bollards installed in the headquarters building	48,141	12.52
Global construction sites	Electrical appliances	Energy-saving electrical appliances are used in the construction offices.	285,819	141.48
	Electrification of construction equipment	Electric stacker used in the warehouse at construction sites	39,360	19.48

We also care about the energy usage of our suppliers. CTCI requests its Tier 1 suppliers to fill out sustainability risk survey questionnaires, which include questions related to energy management. We require them to make record and control their energy consumption to achieve annual energy reduction. For those that have been identified as high-risk suppliers, CTCI's procurement department will conduct on-site audits to see if the audited items have been improved, and offer improvement recommendations.

Green energy equipment or green energy industry investment and benefits

CTCI is actively involved in expanding into the green energy industry. In 2023, the solar panel installation at the first headquarters cost approximately NTD4,990 thousand with the expected annual power generation of 50MWh. In the field of renewable energy, 2999MWh (2,999 renewable energy certificates) was consumed in 2023, cosing approximately NTD130,203 thousand and reducing 1,485mtCO_2e of carbon emissions. In terms of investment in green energy industry and equipment, the amount of new investment in green industry in 2023 was approximately NTD130,203 thousand; CTCI MAC, the 100%-owned subsidiary of CTCI, increased investment in the Dalin Plant (manufacturing of wind power underwater foundation equipment for various wind farms) for its machinery and equipment with a cost of roughly NTD10,916 thousand; ECOVE Solar Energy Corp., another subsidiary of CTCI, invested about NTD306,960 thousand in solar machinery and equipment, with an estimated 5,100 MWh annual power generation from solar energy.

Materials

All resources on Earth are limited. In every project carried out by CTCI, we always make precise calculations to understand the minimum amount of resources required and their cost, so as to prevent waste and unnecessary use of materials. That way, our resource management becomes highly effective. During the material selection stage, we would carry out assessment to check whether the material is environmentally friendly. By procuring renewable materials, we can reduce consumption of resources and minimize environmental pollution. For the same reason, we support suppliers who carry out their own environmental management and encourage them to develop and produce renewable materials. In determining which kind of building materials we should use, CTCI takes into account factors such as durability, maintainability, VOCs, hazardous substances, and radiation hazard. Furthermore, through newly-introduced life cycle cost analysis software (EEA), we can calculate the energy consumed and the costs incurred within the entire life cycle. Factors that we take into account in the analysis include: economic factors, such as loans, cash flow, and recovery period; internal and external energy consumption and costs, s uch as costs incurred from operation, maintenance, decommissioning, and demolition. Each project is analyzed based on a 20-year life cycle. Under the promise of never using natural resources from the rainforest, primary forest, and genetically modified trees, we now require, according to our engineering standards, that projects should use wood products that have been certified by the Forest Stewardship Council (FSC). In terms of managing office supplies that are related to forest resource consumption, we continue to encourage minimizing unnecessary printing by promoting electronic documents. In the case where printing is necessary, the employees' computers have been preset to double-sided printing mode to minimize paper use. Moreover, we have gradually installed card identification devices on all multi-functional printers since 2012. Employees are required to authenticate their identities with their employee ID cards before they can access their printed documents, a daily measure to conserve forestry resources. The papers we currently use for printing are eco-friendly Double A papers, which are made from farmed trees. No natural forest is being destroyed, ensuring environmental sustainability.

Location	Raw materials	Unit	Annual Consumption			
			2020	2021	2022	2023
Headquarters Building	Paper	kg	28,174	23,384	26,355	36,129
Global Construction Sites	Paper	kg	20,534	8,272	24,825	22,618
Global Construction Sites	Wood Note1	ton	0	0	0	0
	Steel pipe	ton	7,634	11,890	11,728	6,250
	Concrete	ton	1,019,670	939,184	807,326	1,323,615
Global Construction Sites	Aggregate	ton	815,736	713,080	599,752	978,736
Global Construction Sites	Asphalt	ton	1,036	1,446	548	573
	Cement	ton	101,967	93,918	80,733	132,362

Note1: CTCI does not use wood for construction, therefore the amount consumed is 0

Percentage of regenerated/recycled materials used (%)

Location	Raw materials	Unit	Annual Percentage			
			2020	2021	2022	2023
Global Construction Sites	Wood	ton	0	0	0	0
	Steel pipe	ton	10.80%	10.88%	10.29%	11.15%
	Concrete	ton	6.0%	6.0%	6.0%	6.0%
	Aggregate	ton	0	0	0	0
	Asphalt	ton	0	0	0	0
	Cement	ton	22.54%	20.06%	22.00%	23.73%

Note1: CTCI does not use wood for construction. Note2: The percentage is estimated with reference to the sustainability reports from China Steel Corporation (2019-P71、2020-P71、2021-P79、2022-P90) and Taiwan Cement Corporation (2019-P98、2020-P70、2021-P39、2022-P109), respectively.
Note3: The percentage of steel pipes denotes the percentage of scrap steel applied. The percentage of concrete, aggregate, asphalt and cement denotes the percentage of recycled raw materials applied.
Note4: The recycled raw materials of concrete, aggregate, asphalt and cement include clay, iron slag, fly ash, bottom ash, desulfurized gypsum, water purification plant sludge, reduced slag, calcium fluoride sludge, recycled aggregates, inorganic sludge, molded rubber; recycled materials for steel pipes include scrap steel.

Reward Subcontractors that Conserve Building Materials

CTCI encourages its subcontractors that work at construction sites to brainstorm measures to conserve and reuse building materials. They will be required to provide proof of their actual implementation results during the project period. After evaluation by the site review committee, subcontractors who have achieved significant results will be given bonus. This initiative aims to encourage subcontractors to utilize conservation building materials and reduce waste. This measure applies to all subcontractors involved in CTCI's global construction projects.

Green Office Examples

CTCI spares no effort in promoting "green offices." In addition to using high efficiency equipment, we also take management measures such as consistently reminding our employees to save energy at all times and raise their energy-saving awareness (please refer to the Energy Section). We also encourage other things such as plastic and waste reduction, source reduction, green procurement, environmental greening, and advocacy initiatives. We will continue to build a corporate culture of "ESG Engagement of All Members" by making sustainability part of our lives.

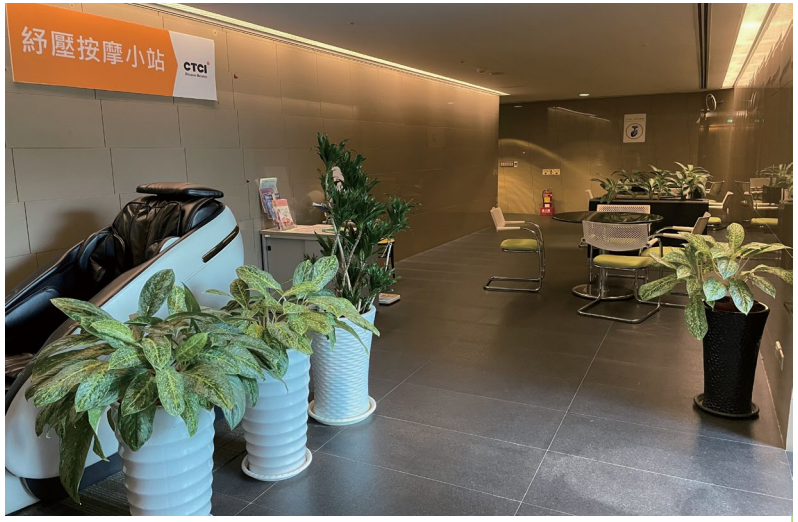
In support of the Environmental Protection Administration (EPA)'s "Green Office" campaign, we became one of its "Green Office Partner" in 2022, after passing review. On February 10, 2023, CTCI was invited by the EPA to speak about green office promotion and achievement, so that more businesses can support the green office campaign to help achieve net zero emissions.

"Green Office Announcement Press Conference and Seminar," organized by the Environmental Protection Administration.

Advocacy initiative: Low carbon campaign. CTCI Group Strategic Team Building

Event Furnishing	Friendly materials Reuse	● Use furnishing materials that can be reused and recycled
Traffic & Transportation	Low carbon transportation Electric first	● Electric bus ● E-bus shuttle service for less carbon emissions
Lunch Refreshments	Local food Good for Health	● Use reusable lunch boxes ● Prepare reusable cups

Lunch is served in eco-friendly lunch boxes at Children Sustainable Study Event, held by CTCI.



A green relaxation area and massage area at the CTCI headquarters.

Green Procurement

For many years, CTCI has been promoting green procurement. In 2023, we reported NT$36.82 million in green procurement to the Environmental Protection Administration, which mostly cover IT products such as laptops, servers, and desktops in our offices. When purchasing office supplies such as photocopy paper and toner cartridges, we give priority to products with green labels. We also encourage our employees to travel by high-speed rail instead of cars in business trips.

Green Product Label/ Type of Label	Energy Star	FSC	Green Mark	Carbon Footprint Reduction Label
Products that CTCI Procures	• Desktop computers • Notebooks • Servers	• Copy paper • Paper towels • Toilet paper	• Toner cartridges • Garbage bags • Detergent	High speed rail transportation services

Water Resources

In terms of the use of water resources, the water for the headquarters building is directly supplied by public tap water, and there is no additional water taken from other water bodies. All wastewater is discharged to the sewerage. The water consumption of the headquarters building is lower than the target in 2023. Many automatic sensor faucets will be in place to reduce the consumption of water resources, and water will be saved by controlling the water output and water output time. Many water-saving signs are also in place to remind colleagues to save water. Both the top floor of the building and the work sites are equipped with rainwater recycling systems, which can be used for irrigation of open space vegetation or for construction. With the increasing number of employees in 2023 compared to 2022, the headquarters building failed to reach the target of reduced water consumption. However, the average water consumption per person did not exceed that in the previous year. Water-saving measures will continue to be enhanced in the headquarters building, with the help of experts assessing the water-cooling air-conditioning system and identifying potential enhancements that can reduce water consumption and increase efficiency. In addition, we will employ professionals to conduct data analysis on the sprinkler irrigation rainwater recycling system to enhance the rainwater recycling process for irrigation purposes in an effort to reduce the proportion of tap water consumption.

Apart from setting targets to increase the efficiency of the headquarters' water consumption, we have also come up with measures to reduce water consumption during construction. We record the amount of water recycled and saved, which includes rainwater and surface runoff water recycled from the current sediment basin, leaked water from barrels and troughs, and water used in pressure tests. The water intensity of the headquarters building is 11.50 m^3 per person, and 20,822 m^3 per million man-hours at global construction sites in 2023.

Water Consumption (m^3)

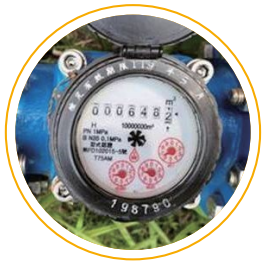
Location (water source)	Annual Performance				Goal[Note 2]		
	2020	2021	2022	2023	2023	Achieved or not	2024
Headquarters building (tap water)	19,272	16,439	19,788	23,489	-	-	-
Global construction sites (tap water)	198,929	176,103	163,910	409,223[Note 1]	-	-	-
Headquarters building + global construction sites(Total)	218,201	192,542	183,698	432,712	534,551	O	469,207
Recycled water (rainwater)	-	Note 5	Note 5	Note 5	-	-	-
Recycled water percentage	-	Note 5	Note 5	Note5	-	-	-
Drain water	-	192,542	183,698	432,712	534,551	O	469,207
Water consumption	-	0	0	0	-	-	-

Note1: The water amount of 2023 was higher than that of 2022 because of the pile foundations for several sites.
Note2: The targets are set based on the estimated number of staff in the headquarters and the estimated working hours at the sites.
Note3: Water intake = water consumption + discharge. We do not use water excessively at the headquarters, so our water discharge is equal to water intake. If water is carried away or used in the construction sites without returning to the natural environment, that amount is water consumption, otherwise it is water discharge.
Note4.: Starting from 2022, the water consumption in the headquarters building includes the water consumption from the first and second headquarters buildings.
Note5: Rainwater is collected at the headquarters building and construction sites. However, since no quantitative data is available, we only disclose tap water.

We have installed water meters at our domestic construction site offices (such as Hsinta Power Plant, Taichung Power Plant, etc.) and started using water-saving devices, such as water-saving faucets, water-saving toilets, sprinkler timers, and rain checkers.

Water-saving faucets

Site water meters



Sprinkler timers and rain checkers

Air Pollution

Before commencement of construction work, all CTCI staff need to go through trainings on the requirements of the Air Pollution Control Act. They need to be fully aware that the air pollutants emitted must meet standards. In the case of inevitable polluting operations within the legal boundaries, such as temporary emissions during construction or commissioning, which may affect the quality of life of neighboring communities and impact the environment, we would always notify the residents in advance on the time and details of emissions to avoid misunderstanding and panic. No open burning, materials transportation, or other operations that would produce granular pollutants detrimental to human health and natural ecology are allowed at construction sites. In the event of a contingency that sees leakage of large amounts of air pollutants or toxic gases, the site manager would carry out emergency response measures and notify local authorities within the timeframe as prescribed by law.

Preventive Measures against Air Pollution at Construction Sites

Type	Measures	Purpose and Outcome
Site preparation and excavation operations	• Have good work plans in advance to minimize land exposures; fill back swiftly after excavation, followed by paving work, plant vegetation, and cleanning dirt on the ground. Take • other pollution prevention measures as necessary. • Daily watering by sprinkler. • Sprinkle water with an automatic sprinkler system that is deployed temporarily, or sprinkle regularly or manually. • Avoid overdose when sprinkling water to avoid secondary pollution caused by muddy water. • Water supply and cost are taken into consideration for the sprinkling plan. Covering soil mounds with dust gauzes.	Prevent flying dust and maintain air quality.
Materials stacking and soil	• Sprinkle water to maintain moisture or cover with canvas when stacking on open ground or during windy conditions. • Waste soil is shipped to qualified disposal grounds, landfills, or processing grounds.	Prevent flying dust and maintain air quality
Sandblasting operation	• In principle, the operation shall be carried out indoors with prevention and control facilities. • The sand on the sandblasting yard must be cleaned or sprinkled with water. • Protective equipment includes sprinklers, ventilation, and particulate matter control equipment. Install bagging dust collectors when necessary.	Prevent air pollution and health impact.
Spray paint, paint, and solvents	• Operate in indoor environments with control equipment. • Not allowed to operate under unstable weather conditions. • Install ventilation and washing (or other methods) equipment at operation sites' downwind area.	Prevent effusion of VOCs and health impact.
Vehicular transportation and cleaning	• Vehicles carrying construction materials or particulate-size wastes are covered with canvas or non-permeable covers. • All vehicles and machinery must be hosed down in the washing pool before leaving construction sites to ensure cleanliness. • After loading, truck beds must be covered with tarpaulin, and the tarpaulin must be fastened. • When driving through a construction site, vehicles must follow construction site rules and the instructions of construction site supervisors.	Preventing flying dust and dust falling.
Open burning	• Open burning is prohibited.	Prevent air pollution and health impact.

Soil and Groundwater

Before a construction work begins, we would draw up water usage and sewage plans. The water for construction use is supplied by the city water system. Since we do not use a lot of water, the impact from the suspension of water supply is low. Stringent environmental monitoring is in place during construction to control the quality of effluent released from the construction sites. No waste materials or pollutants are allowed to be disposed of into water bodies or into areas within the designated distances from water bodies. When it comes to storage of major materials as announced by the authority, we would install facilities to prevent groundwater pollution, followed by ongoing monitoring and recording. In the case where wastewater is emitted in emergent circumstances or by accident, and poses severe hazard to drinking water safety or the environment, we would take emergency response measures and notify the local environmental authorities within three hours.

Common types of wastewater that are found at our construction sites include domestic sewage, car washing wastewater, construction process wastewater, commissioning process wastewater, pollutant spills, and surface storm runoff. Domestic wastewater is discharged into the sewage systems or the septic tanks of nearby business or municipality, or is entrusted to the qualified and legal treatment contractors for collection, transportation, and treatment. In terms of handling the wastewater generated during construction process, besides installing settling basins at appropriate places, some water are collected and reused after precipitation to reduce freshwater consumption, but only when the water does not contain harmful ingredients and is not dirty. If the water contains harmful ingredients or is dirty, it is either treated at the construction sites after collection, or is emitted by our contractor after going through treatment and meeting discharge standards. As for the wastewater generated during the commissioning process, it is collected and treated, then emitted or recycled depending on the amount and quality of the wastewater. Precaution measures are taken to prevent ground pollution or mixing with regular wastewater when handling the disposal of environmentally and biologically hazardous liquids. Wastewater from cleaning containers that contain chemical liquid or oil is recovered by the original suppliers or entrusted to qualified and legal contractors for treatment. We have never, and will never dispose the water at construction sites.

CTCI requests its Tier 1 suppliers to fill out sustainability risk survey questionnaires, which include questions related to the management of water resources and wastewater discharge. For those that have been identified as high-risk suppliers, CTCI's procurement department will conduct on-site audits to see if the audited items have been improved, and offer improvement recommendations.

CTCI provides a utility list to our clients during the project design phase, which shows the quantity and quality of various types of water used, so as to better make plans on future water intake system. We also provide our clients with a rainwater and sewage discharge system plan, which serves as the basis for future rainwater and sewage discharge system designs.

Also, CTCI does not consume a significant amount of water. Water resources are allocated as follows: water designated for office use and for construction purposes. In the identification, assessment and management of risks in water resources, the dependence evaluation focuses on two major factors: water quality and water quantity, with regular discussions. If there is a shortage of water resources, it will affect the daily use of water in the headquarters building. If water scarcity happens, the Company's operations will be affected, and the progress of construction may be affected in construction sites. Therefore, the headquarters regularly conduct water-storage measures to prevent water scarcity in dry seasons. In construction sites, the supply structure of local water resources should be understood to establish emergency reposnse plan for water-related disasters. Deterioration of water quality poses a hazard to the health of employees and workers of outsourced companies, whether at the office or at the construction site. The impact on water resources comes from the discharge of wastewater. Wastewater from the headquarters building is mainly discharged to the public sewage treatment system of the government, which does not directly cause significant impact on the natural environment. Wastewater from construction sites is treated differently, as described in the previous paragraph. The Company performed simulations on future water pressure in order to comprehend the fluctuations in water availability that may occur. These simulations utilized data from the Water Resources Administration's water consumption statistics over time, taking average annual precipitation, the volume of reclaimed water production, and actual water consumption into account.

The results indicated that the water volume can be maintained at a stable level without significant variation for three years at all operational sites. To further understand the quality of water supply in the future, by referencing the results of tap water sampling inspection by the Ministry of Environment over the years, it can be seen that the non-conforming rate has decreased significantly, representing a trend of improvement year by year. In addition to water quantity and quality, the Company also incorporates conflicts of interest from stakeholders located in the same river basin and the concerns of stakeholders towards the Company as part of its risk assessment process. This also meets the water-related regulations of the local competent authority.

Soil and Groundwater Protection at Construction Sites

Item	Measures	Purpose and Outcome
Sewage Plans	• Sewage piping design has been taken into consideration during the planning stage of all construction sites. • Wastewater and sewage at construction sites are treated with the sewage treatment equipment that has been set up by the client in accordance with relevant regulations.	These measures can reduce dust at the construction sites and prevent air pollution, and can also be used in concrete cooling and maintenance.
Sewage channels	• Constructed with impermeable materials to prevent wastewater from entering the soil and causing secondary pollution.	The channels help reduce pollution caused by wastewater entering the ground. Additionally, they are also used for collecting and sorting wastewater and rainwater at construction sites.
Domestic wastewater	• Discharged into the sewage systems of nearby business or municipality. • Entrusted to qualified and legal treatment contractors for collection, transportation, and treatment.	wastewater entering the soil directly. Toilet sewage is collected in septic tanks and removed regularly by legal contractors to avoid overflowing of septic. Other domestic light sewage is discharged into the sewage system.
Wastewater from construction	• Settling basins are installed. • After the settling process, the supernatant is extracted for sprinkling at the construction sites. • If the wastewater does not contain harmful ingredients and is not unclean, it is collected and reused. • If the wastewater contains harmful matters or is unclean, it is either treated at the construction sites or be discharged after treatment by contractors once it meets the discharge standard.	Prevent the construction wastewater from directly entering the soil. The wastewater is collected and sorted with treatment equipment, and the reusable water is reused.
Wastewater from the commissioning process	• Wastewater is collected, then it is either discharged or reused, depending on the water quantity and quality.	These measures help prevent wastewater from directly entering the sewage system. The wastewater is sorted based on the water quality for reuse or emitted via legal pipelines.
Machinery maintenance	• For regular machinery maintenance, oil replacement is not allowed to be carried out at construction sites. This help prevent oil dripping and pollution during the oil replacement process. • Before the machinery and construction vehicles can leave construction sites, they are required to be cleaned with sprinklers or go through washing pools, so as to ensure no mud remains. The wastewater from car washing is also required to be handled appropriately.	Machinery is maintained and repaired regularly to prevent exhaust that does not comply with regulations. Oil seals are changed periodically to avoid leakage of heavy oil.

Waste

Waste generated at the headquarters building is treated through incineration. The amount of waste generated in 2023 is 61.07 metric tons. In general, construction sites around the world dispose of their waste through incineration or landfilling. As of 2023, 22.84 metric tons of waste ended up in landfills, 3394.57 metric tons treated through incineration. The amount of treated waste was lower than the set target in 2023, with the landfill volume decreasing by 45% compared to 2022. To continuously reduce the waste, electronic scales were purchased for the headquarters building in 2023 to control the volume of waste on each floor. Paper, metal, plastic, and food waste are all recycled. In response to the increasing amount of lunchbox waste during lunchtime, we now additionally recycle paper lunchboxes and plastic lunchboxes at lunch time.

The most significant source of waste is construction waste. In principle, CTCI aims to minimize waste generation within construction sites and sets a reduction target. The waste found at construction site includes: domestic garbage, harmless construction waste, hazardous waste, waste soil, and building demolition residue. Domestic garbage and those that can be removed or treated along with general waste shall be sorted and collected first. They are stored in appropriate containers and then entrusted to the municipal cleaning unit for disposal. To treat waste soil, hazardous industrial waste, and toxic substances, CTCI entrusts qualified and legal contractors to take full responsibility for the disposal. We also dedicate manpower to the consideration and implementation of waste reuse. For example, the broken waste concrete blocks will be used for gradation in pavement at construction sites. And waste woods will be reused as tables and chairs in the rest area and notice boards in the work area. We would double-check the final disposal outcomes at any time to see whether it is appropriate, as a way for us to prevent subsequent secondary pollution problems caused by improper treatment or negligence of the manufacturer. Chemical substances, oils, and fats are not stored at the construction sites, and the storage of toxic substances is minimized as much as possible. Radioactive waste is appropriately isolated, depending on the radioactive intensity and the level of danger. Radiation shall be blocked off so that people nearby are not exposed to radiation. Measures are taken to avoid floating dust, fallout, and rainwater runoff. When transporting and storing toxic chemical substances, we label them and store them in isolated locations, as required by stringent regulations. In terms of the prevention plan of toxic substance spill accident and emergency response measures, CTCI regularly conducts reviews and adjustment based on actual situations and performs regular drills, inspections, and audits. In the event of severe leakage of toxic substances, we would immediately take emergency response measures, report to the highest commanding officer, and notify the local environmental protection agency within the timeframe as prescribed by law. The waste intensity at the headquarters building is 30.0 kg per person, and 173,888 kg per million man-hours at the global construction sites.

Engineering, procurement, and construction of all ongoing projects are carried out in accordance with CTCI's project engineering surplus material management procedures. The information of the surplus materials generated from the project should be timely disclosed and properly managed in the surplus material control platform. This information should be disclosed systematically and allow easy searching. We have also created a compensation plan for repurchases, encouraged proactive reporting/use of surplus materials to minimize the quantity of surplus materials, and maximized their applications for less waste. In addition, we encourage using reusable construction equipment, as well as renting or purchasing second-hand equipment instead of buying new ones. In addition, the construction information modeling technology is applied to the stage of engineering development to improve the quality of engineering design, provide accurate drawings, labors, and materials, and extend the application to construction management to avoid the waste of building materials.

CTCI requires its staff and contractors to go through waste management sessions in new recruit onboard training and HSE training before entering project sites. Such matters are also further communicated during kick-off meetings and hazard identification meetings. Staff is required to strictly follow the waste management practices and classification of construction site waste. Contractors with excellent environmental protection performance are rewarded. We also hold site safety and environment cleanliness competitions.

In addition to the management measures mentioned above, we also included rules and penalties within the contract so as to discipline our third-party suppliers. They need to keep the work site clean and recycle waste (basic requirements include cleaning or returning all surplus and leftover materials during the construction period to the designated location of CTCI for storage). Violators will be fined by CTCI. According to statistics, 48 penalties were imposed on the suppliers' project sites in 2023 due to poor waste management, accompanied by a total fine of NT$166,500. If subcontractos can show proof of significant performance related to waste recycling and reuse, they will be given a bonus, upon the evaluation by the site review committee. This applies to all subcontractors across CTCI global construction sites.

CTCI requests its Tier 1 suppliers to fill out sustainability risk survey questionnaires, which include questions related to the management of water resources and wastewater discharge. For those that have been identified as high-risk suppliers, CTCI's procurement department will conduct on-site audits to see if the audited items have been improved, and offer improvement recommendations.

During the project engineering phase, CTCI would provide its clients a list of waste discharge, detailing the property and amount of solid and liquid waste discharge. CTCI would also provide substance safety data sheets that details the toxicity, flammability, and chemical hazards of each chemical substance in relation to the human body, environment, and ecology. We also have safety procedures in place for the transportation, storage, use, and final disposal of chemical substances, which serve as a basis for future planning, operation, and final disposal of such substances.

Amount of Waste Produced

Location	Type	Unit	Annual Performance					Goal	
			2020	2021	2022	2023	2023	Achieved or not	2024
Headquarters building	General waste	Tons	60.50	56.31	55.04	61.07	-	-	-
	Hazardous construction waste	Tons	0	0	0	0	-	-	-
Global construction sites	General construction waste	Tons	924.86	1,720.18	1,843.49	3,417.41	-	-	-
	Hazardous construction waste	Tons	0	0	0	0	-	-	-
Headquarters building + global construction sites(total)	General construction waste	Tons	985.3	1,776.49	1,898.53	3,478.47	3540.91	O	2912.83
	Hazardous construction waste	Tons	0	0	0	0	-	-	-

Notes1: The general waste at the construction sites is entrusted to the local cleaning business for treatment. Waste is weighed and calculated since 2018.
Notes2: No chemical reaction happened during construction that would have produced intermediates, so no hazardous waste was generated.
Notes3: The targets are set based on the estimated number of staff at the headquarters and the expected working hours of the sites. Waste is managed according to management procedures. Its carbon emissions are classified as Scope 3 for auditing.
Notes4: Starting from 2022, the general waste in the headquarters building includes that from the first and second headquarters buildings.

Location	Treaments	Units	2020	2021	2022	2023
Headquarters building	Recycled	Tons	19	18	18	18
	Landfill	Tons	0	0	0	0
	Incineration (w/heat recovery)	Tons	60.50	56.31	55.04	61.07
	Incineration (no heat recovery)	Tons	0	0	0	0
	Others	Tons	0	0	0	0
	Unknown	Tons	0	0	0	0
Global construction sites	Recycled	Tons	1,748	809	1,211	658
	Landfill	Tons	0	33.68	41.62	22.84
	Incineration (w/heat recovery)	Tons	924.86	1,686.50	1,801.87	3,394.57
	Incineration (no heat recovery)	Tons	0	0	0	0
	Others	Tons	0	0	0	0
	Unknown	Tons	0	0	0	0
Headquarters building + global construction sites(total)	Recycled	Tons	1,767	827	1,229	676
	Landfill	Tons	0	33.68	41.62	22.84
	Incineration (w/heat recovery)	Tons	985.36	1,742.81	1,856.91	3,455.63
	Incineration (no heat recovery)	Tons	0	0	0	0
	Others	Tons	0	0	0	0
	Unknown	Tons	0	0	0	0

Note:Please refer recycling outcome list of details of recycling.

Recycling Outcome

Location	Type	Measures	Outcome(kg)			
			2020	2021	2022	2023
Headquarters building	Paper	Encourage the use of recycled paper Set up paper recycling bins	14,020	12,060	10,802	10,497
Headquarters building	Metals	Set up recycling bins	255	288	665	492
Headquarters building	Plastic	Set up recycling bins	271	429	911	778
Headquarters building	Kitchen Waste	Set up recycling bins	4,678	4,786	5,298	6,414
Global construction sites	Scrap iron	Recycle	1,748,086	155,870	1,176,677	634,985
Global construction sites	Wood	Recycle	-	653,210	34,600	22,550
Global construction sites	Paper	Set up recycling bins	-	-	-	-

Notes1: There is no data because we let non-profit operators recycled all resources, as a way for us to give back to the local community.
Notes2: Starting from 2022, recycling at the headquarters building includes the first and second headquarters buildings.

Noise Prevention & Control

In consideration of the health and safety of the operators and the construction quality, CTCI prioritizes the use of low-noise machinery, equipment, vehicles, and appliances. If it is expected that the noise pollution caused by construction may bring public protests, we would pay special attention to prevent pollution and public protest. Complaints are not limited to personal visits or in written forms; we consider all opinions and grievances regarding pollution and related matters voiced in any form, at any opportunity, on any occasion. All complaints are handled in the most efficient manner possible. A response regarding the official treatment plan and outcomes will be given to the person(s) filing the complaints. All reported incidents must be listed in detail, handled, tracked, inspected, and sent regularly to the project managers for review. Noisy operations need to be performed outside construction sites whenever possible or to be performed by contractors. When circumstances demand the use of equipment classified as "noise-prone" by the government, we would always apply for permits before carrying out installation and operation work. Piling is conducted using noiseless methods when there are concerns about noise pollution, or is to be done at appropriate hours of the day. Night-time construction would be avoided whenever possible. Drivers of vehicles outside construction sites need to follow instructions and will have their vehicles inspected in terms of noise. They are required to drive on designated routes, in the designated time, with designated speed limits, and with noise-reduction equipment installed.

Transportation

When selecting transportation contractors, CTCI prefers the ones who share our vision. We prefer those who have ISO 14001 Environmental Management Certification. To reduce the environmental impact from transportation, we use local equipment and materials whenever possible and procure locally to reduce transportation distance and conserve energy. We prioritize low-carbon, low-sulfur and low-pollution forms of transportation, such as prioritizing sea transport over air transport for energy conservation, while requiring shipping contractors order ships from those who adhere to the "2023 IMO Strategy on Reduction of GHG Emissions from Ships" that imposes a minimum carbon emissions reduction target of 20% by 2030 and 70% by 2040, and that demands the use of ships powered by low-sulfur fuel oil by 2020 in the purchase order. In terms of sea transportation, since newly built ships have better fuel efficiency and can conserve oil, we use only those ships that are aged less than 15 years. During LCL or consolidation, cargoes with close delivery locations or shipment periods can be combined into a single batch for transportation if the project schedule allows.

Biodiversity

CTCI's primary operational sites consist of the headquarters buildings and global construction sites. The headquarters is located in a basin environment without any protected habitats. However, the Company places importance on the ecological environment and engages in planting suitable vegetation to enhance greenery and minimize environmental impacts. In the execution of various engineering projects, equal emphasis is placed on the ecological conservation of project sites. This includes conducting ecological assessments at each stage of public infrastructure construction, such as design and construction. Ecological professionals are involved in collecting, investigating, and analyzing ecological data, and they assist in integrating the concept of ecological conservation into the project. Ecological conservation measures are proposed and implemented during project execution. Prior to the construction of global project sites, ecological surveys and necessary environmental impact assessments are conducted for the surrounding environment. During project design, local species, habitats, and ecological environments are taken into consideration, and efforts are made to avoid important conservation areas and special habitats. Avoidance, minimization, mitigation, restoration, and compensation strategies are proposed to minimize and restore the environmental impacts. CTCI's "Commitment to Protect Natural Ecology and Biodiversity" was adopted by the Board of Directors.

Commitment to Protect Natural Ecology and Biodiversity

1.Provide products or services that comply with Zero Deforestation standards and our operational sites and value chain activities should avoid biodiversity hotspots regulated by national or international regulations.
2.For existing operational sites that encompass biodiversity hotspots, we commit to implementing strategies of avoidance, mitigation, restoration, and compensation to reduce the impact on those areas.
3.Regularly monitor the ecological environment surrounding operational sites and assess their impact.
4.Implement biodiversity risk identification, including our own operation sites, adjacent areas to our own operations, upstream, and downstream activities.
5.Support biodiversity conservation activities or initiatives.
6.Engage with upstream and downstream value chains and stakeholders to achieve the aforementioned commitments.

Ecological/Environmental Conservation Strategy and Planning

CTCI establishes a dedicated unit, the Sustainability and Net Zero Office, in collaboration with the ESG and Net Zero Team, to jointly promote sustainability-related matters across departments. The unit operates under the supervision of the Sustainability Superintendent. The Sustainability Superintendent and the Chief Sustainability Officer regularly report the outcomes of nature conservation and biodiversity protection to the ESG & Net Zero Committee established under the Board of Directors.

CTCI has set targets for biodiversity conservation. By 2030, our operational sites aim to achieve No Net Loss (NNL) and adhere to Zero Deforestation standards. By 2050, our operational sites strive to achieve Net Positive Impact (NPI), while our value chain aims for No Net Loss and compliance with Zero Deforestation standards.

CTCI Group Biodiversity Strategy Map

Strategic Focus

2030

By 2030, biodiversity at operational sites will achieve No Net Loss (NNL) and comply with Zero Deforestation standards.

2050

By 2050, operational sites will achieve Net Positive Impact (NPI), while the value chain will achieve No Net Loss (NNL) and comply with Zero Deforestation standards.

Sustainable Engineering Leader: Establishing a natural environment value chain management mechanism + Regular monitoring and guidance.

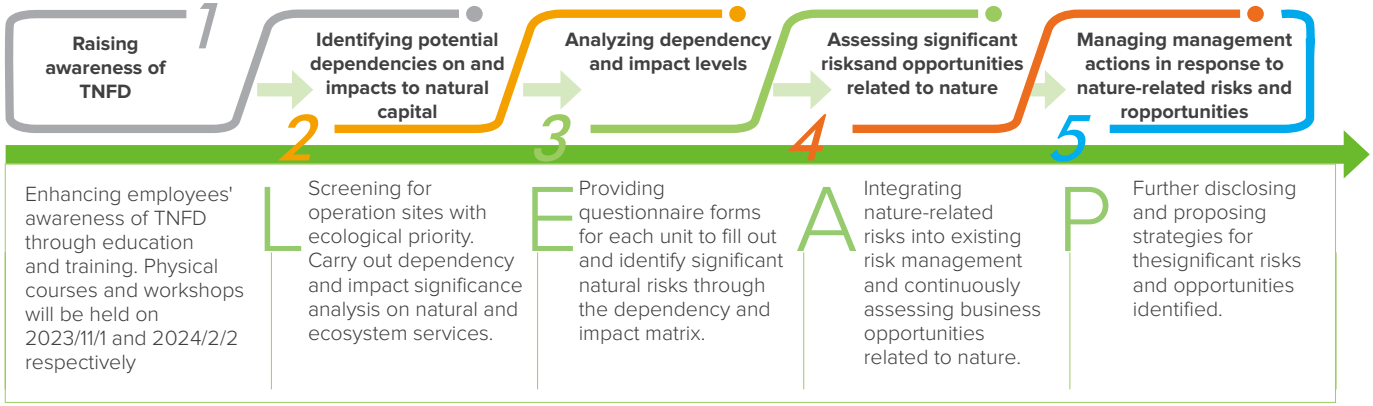
Strategic Goals and Actions

2023	2030	2040	2050
• An impact analysis is conducted on the surrounding fauna, flora, habitats, and water sources when establishing a new construction site. • Propose avoidance and mitigation measures. • Implement recovery measures for unavoidable impacts to minimize the effects. • Compensate for irreparable impacts (e.g., environmental restoration). • Prioritize the procurement of products certified by internationally recognized organizations (e.g., FSC). • Disclose nature-related risks and mitigation measures based on the TNFD framework. • Incorporate biodiversity and zero-deforestation policies into the code of conduct.	• Achieving No Net Loss (NNL) of biodiversity at operational sites. • Ensuring operational sites comply with Zero Deforestation standards. • Establishing a global monitoring system for zero deforestation at operational sites and tracking compliance with national regulations. • Requiring the value chain (including primary and non-primary suppliers) to comply with local regulations, fulfill commitments to protect biodiversity, and prevent deforestation.	• Continuously engaging in ecological conservation at operational sites, regularly monitoring species and environmental changes to gradually achieve the NPI goal by 2050. • Sharing experiences of biodiversity conservation with the value chain. • Providing incentive mechanisms to drive the value chain towards achieving No Net Loss (NNL). • Regularly reviewing the compliance of the value chain with Zero Deforestation standards.	• Achieve Net Positive Impact (NPI) at operational sites. • Attain No Net Loss (NNL) within the value chain. • Ensure compliance with zero-deforestation standards throughout the value chain.

Note ① No Net Loss (NNL) refers to utilizing restoration measures within operational sites to achieve zero net change in overall count of biodiversity species.)
Note ② Net Positive Impact (NPI) refers to utilizing restoration and compensation measures within operational sites to achieve a positive net change in the overall count of biodiversity species.)

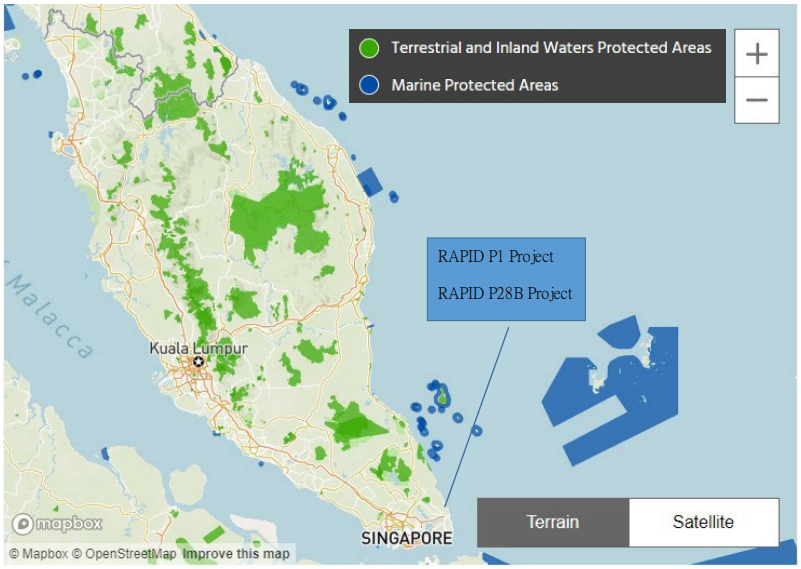
Nature-related Financial Disclosures

In response to the global emphasis and evolving trends regarding biodiversity, CTCI has initiated the preliminary adoption of the Task Force on Nature-Related Financial Disclosures (TNFD) framework. Through the application of the LEAP methodology (Locate, Evaluate, Assess, and Prepare), we assess nature-related risks and opportunities to enhance our disclosure on financial aspects related to nature. The process planning instructions are as follows:



Interface between Operational Activities and the Natural Environment

CTCI's operating activities are not related to other drivers of biodiversity loss, such as the introduction of alien species, changes in land and ocean use, overuse of resources, etc. Based on the Taiwan Biodiversity Network Database from the Council of Agriculture Executive Yuan's Endemic Species Research Institute, CTCI conducted a biodiversity hotspot analysis of its domestic operational sites using species distribution data from 2000 to 2019. The threshold for identifying biodiversity hotspots in various taxonomic groups on the island of Taiwan was set as the top 5% of grid cells containing the highest species richness. The comparison results indicate that all domestic operational sites of CTCI are located outside of biodiversity hotspots. For the overseas operational sites, comparisons were made using data from the World Database on Protected Areas (WDPA) by Protected Planet. The results indicate that the overseas operational sites are not located in adjacency to natural protected areas. Taking Malaysia as an example below. Taking Malaysia as an example below.



Based on the ecological survey database provided by the Forestry Bureau of the Council of Agriculture, Executive Yuan, the Company has gathered information on species diversity for its own operational sites and neighboring locations in Taiwan. This data is used to identify significant biodiversity areas. The following table presents species information for priority operation sites.

Operation Type	Region	Sensitive zone (within 2 km)	Biodiversity hotspots (within 2 km)	Number of species	Critically Endangered (CR)	Endangered (EN)	Vulnerable (VU)	Near Threatened (NT)	Least Concern (LC)
Headquarters building (Own operation)	Taipei		None	475	3	2	8	9	249
Taichung Power Plant (Downstream: Client)	Taichung	Dadu River Mouth Major Wildlife Habitat (IUCN category IV) Dadu Estuary Important Wetland (National level)	None	90	0	1	0	2	41
Hsinta Power Plant (Downstream: Client)	Kaohsiung	Yongan Important Wetland (Regional level)	None	150	0	1	0	0	83

Note ① Species numbers that are lacking data (DD), not applicable (NA), or unassessed (NULL) are not individually listed.

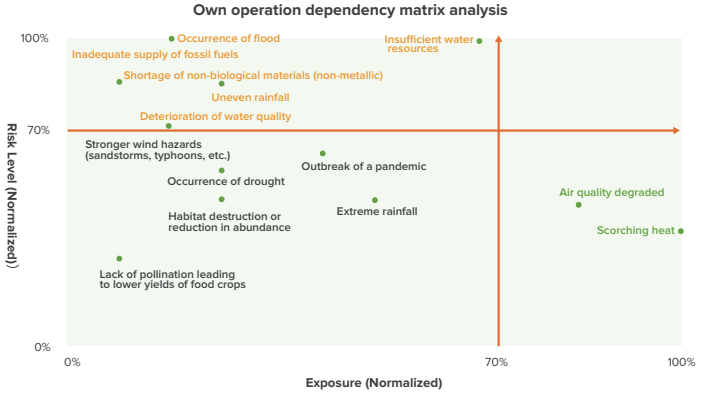
Note ② IUCN stands for the International Union for Conservation of Nature.

Value chain site activities

A total of 1,111 business locations (10 proprietary assets, 18 downstream businesses, and 1,083 upstream businesses with transactions between 2021 and 2023) worldwide were assessed for impacts on biodiversity, including the distribution of locations and the number of locations in each country. We divided the subject of evaluation into Taiwan sites and global sites. The analysis method started from setting the operating site as the center, delineated a potential impact area within a radius of 2km from the center, and conducted an overlaying analysis with the information drawings of the local protection area map to further summarize the overlapping area between business locations and the value chain.

Identifying the natural dependence of self-operation

In the process of analyzing our dependence on nature and ecosystem services, we conducted questionnaire surveys and held group discussions in workshops. The results of the questionnaire matrix analysis showed that there are two high-exposure issues in the Company's own operations: high temperature and degraded air quality; Other six potential high-risk issues facing CTCI include shortage of fossil fuel supply, occurrence of floods, shortage of water resources, shortage of non-biological materials (non-metallic) supply, uneven rainfall, and deterioration of water quality. Among them, "water resources shortage" and "fossil fuel shortage" are two issues that are reckoned hard to address even after adjustment by employees. The Company will return to its own operation management, and establish dependency indicators and measuring metrics for risk management and tracking high-risk issues.



Dependent items	Establish an early warning	Dependency indicator	Measuring
Scorching heat	Temperature Forecast (Bureau of Meteorology)	1.Increased power consumption due to high temperature Change of construction progress due to high temperature	• Relationship between power consumption and temperature change • Relationship between construction progress and temperature change
Degraded air quality	Air quality index (Bureau of Meteorology)	Degraded air quality affects operations	• Impact of degraded air quality index on operation/construction progress
Inadequate supply of fossil fuels	None	Rising costs due to rising fossil fuel prices	• Consumption of natural gas, coal and fuel Proportion of fossil fuel cost of total expenditure • Achievement rate of low-carbon transition plan
Occurrence of flood	Meteorological forecast (Bureau of Meteorology)	Operations affected by flooding	• Impact of flooding on operation/construction progress
Insufficient rainfall/ insufficient water resources	Rainfall forecast (Bureau of Meteorology)	Operations affected by drought/water shortage/ restrictions	• Impact of past events on operation/construction progress and emergency response mechanism Potential impacts of future droughts/water • shortages/water restrictions
Shortage of non-biological materials (non-metallic)	None	Quantity of high-risk natural products from land/ocean/ freshwater (e.g. water, wood, minerals, agricultural products)	• The weight of high-risk natural products, including the ratio to the total amount of natural products, is divided into: • From land/sea/fresh water • From the Sustainability Management Plan or related certification schemes
Uneven rainfall	Rainfall forecast (Bureau of Meteorology)	Operations affected by flooding	• Impact of flooding on operation/construction progress
Deterioration of water quality	Water quality index, pollution index (National Environmental Water Quality Information, Water Resources Agency, and Water Corporation)	Deterioration of water quality affects operations	• Impact of deteriorated water quality on operation/construction progress

Dependent items	Risk description	Risk category	Financial impact	Responding measures
Scorching heat	The direct impact of gradual increase in ambient temperature on business operations	It will affect the livelihood electricity consumption (air conditioning) of the headquarters building, and the increase of electricity bill will affect the Company's cost. If the location of construction is in a hot area, it will affect the progress of the construction.	Under the RCP 8.5 scenario, the headquarters' power consumption will increase by 400,000 kWh each year, and the electricity bill will increase by about NTD 2.2 million. If the worksite is suspended due to high temperature for one day, the operating cost (overtime pay) will be about NTD$3 million.	Establish environmental disaster prevention and contingency plans according to regional characteristics
Degraded air quality	The air quality around the site is getting worse and worse, which affects the site.	Employees' health is affected. The Company's operations will be affected and the operating costs will increase when employees fall ill. If the construction site is in an area with excessively poor air quality, it will affect the number of workers and the visibility of the site area, resulting in delay of the construction progress.	The average operating loss of sick leave per employee per day is about NTD$ 36,500. If a worksite is shut down for a day due to degraded air quality, the operating cost (overtime pay) will be about NTD$3 million. If the construction site experiences prolonged shutdown, it is equivalent to losing daily revenue of about NTD$6 million.	Air purifiers are installed within the Company, and environmental disaster prevention and response plans are established based on regional characteristics of the site.
Supply shortages of fossil fuel	The shortage of fossil fuels, such as coal, natural gas, gasoline and diesel, has an impact on the Company	1. Rising energy prices: Fossil fuels are now one of the world's main energy sources, particularly in the fields of transportation, industry, and power generation. Supply shortages may lead to imbalances between supply and demand, which in turn push up energy prices. This may result in the pressure of rising costs for the Company. 2. Transportation and transportation difficulties: Energy shortages may affect transportation systems, causing supply chain disruptions and transportation difficulties. This may result in delays in the transportation of goods and increase in prices. 3. Technological Transition Risks: Supply shortages may promote the shift to cleaner and renewable energies. However, this transition may face challenges in terms of technology, capital and social acceptance. 4. As a result, chemical companies are less willing to invest, which in turn reduces revenues of the Company.	1. If the fossil fuel price rises, it will affect the cost (cost = contracting and procurement cost * percentage of equipment purchased * fossil fuel price increase rate) that stands at about NTD$60 million. 2. Roughly NTD$ 20 million of labor expenses 3. If the Company is unable to adapt to this transition, it will loss approximately NTD$90 - 360 million. (Total revenue * percentage of innovative business * loss rate) 4. The impact of revenue reduction accounts for approximately 4.4%~17.6%	1. Energy efficiency improvement: Improve energy efficiency and reduce the demand for fossil fuels. 2. Shift to renewable energy: Adopt renewable energy, such as solar energy, wind energy and hydropower, to reduce the dependence on limited fossil fuels and reduce carbon footprint at the same time. 3. Diversified energy sources: Reduce dependence on a single source of energy and establish a diversified energy structure, including natural gas and biomass energy. 4. Government policy support: Actively participate in and support the government's energy policy, promote the development of renewable energy, and promote energy transition at the same time. 5. Energy management system: Establish a comprehensive energy management system to monitor and optimize energy use, reduce waste, and improve performance. 6. Invest in research and development: invest in new technologies and research to promote energy innovation and develop alternative energy and technology.
Occurrence of flood	Risk of river flooding in the vicinity of sites	If the construction site is in the flood-affected area, it will cause property damage and delay the construction progress.	If a site is shut down due to flooding for a day, the operating cost (overtime pay) will be about NTD$3 million. If the construction site experiences prolonged shutdown, this is equivalent to about NTD$104 million of daily revenue loss.	Flood prevention and contingency plans are established according to regional characteristics
Insufficient rainfall/ insufficient water resources	The operation of the organization depends on water resources as an important material	Affect the water supply for daily living in the headquarters building. Company operations will be affected if employees run out of water; the progress of construction may be affected in times of water shortage.	The operating cost (overtime pay) of a one-day shutdown at the headquarters is about NTD$4 million. If a site is shut down due to water shortage for a day, the operating cost (overtime pay) will be about NTD$3 million. If a construction site experiences prolonged shutdown, it is equivalent to losing about NTD$ 16 million of daily revenue.	1. Regularly store water to avoid running out of water in case of water shortage. 2. Understand the composition of local water resources and establish access in emergency.
Uneven rainfall	The operations of the organization will be affected by changes in the drought or rainy seasons or wildfires	This will affect the livelihood of the headquarters building, and the increase in water bills will affect the Company's cost expenditure. If the construction site is in the arid or rainy season, it will affect the progress of the project.	If the water bill increases by 1%, the annual cost of the headquarters building will increase by about NTD$6,000. If a site is shut down due to water shortage for a day, the operating cost (overtime pay) will be about NTD$3 million. If the construction site experiences prolonged shutdown, it is equivalent to losing about NTD$ 104 million of daily revenue.	1. Promote the concept of water conservation among employees 2. Establish environmental disaster prevention and contingency plans according to regional characteristics

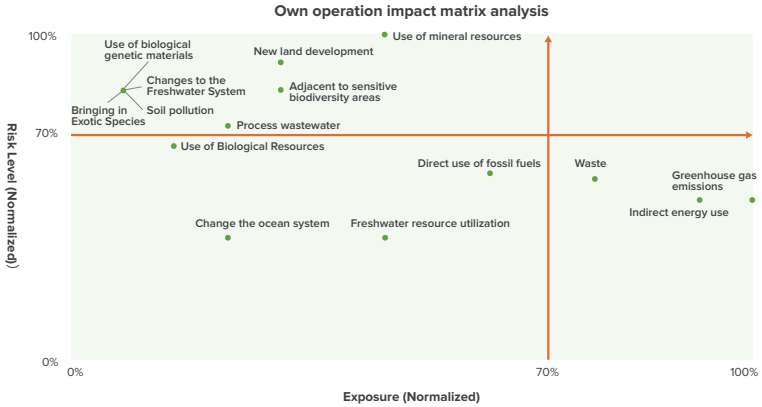
Dependent items	Risk description	Risk category	Financial impact	Responding measures
Deterioration of water quality	Water quality affects the organization's operations	Affects the daily use of water in the headquarters building. Pollution of the water quality will affect the health of employees or personnel in the construction site area, and will increase the Company's operating costs.	The average operating loss of sick leave per employee per day is about NTD$ 36,500.	Understand the composition of local water resources and establish pipelines for access to water with proven quality in emergency.
Shortage of non-biological materials (non-metallic)	Influence of supply shortage of non-metallic materials, such as gases and chemicals	1. Price fluctuation: The shortage of materials may cause the price to rise, increasing the Company's costs and affecting the profit. 2. Risk of supply chain interruption: shortage of materials may interrupt supplier's production, delay the manufacture and delivery of products, and affect the overall construction period. 3. Regulatory compliance risks: Certain non-metallic materials may be subject to environmental protection regulations. If the supply of these materials is restricted, the Company may need to find alternative materials to comply with regulatory requirements, which may lead to increased costs and operational difficulties. 4. As a result, chemical companies are less willing to invest, which in turn reduces revenues of the Company.	1. If the price of non-metallic materials increases, it will affect the cost (Cost of NTD$ 0 - 60 million = contracting and procurement costs * percentage of equipment purchased * range of price increase of non-metallic materials) 2. NTD$ 20 million of labor expenses 3. Expected cost of purchasing alternative materials (Cost of NTD$ 60 million = outsourced project and procurement cost * percentage of equipment purchased * price increase of non-metal materials) 4. The impact of revenue reduction accounts for approximately 4.4%~17.6%	1. Diversified supply chain: to ensure that key materials are obtained from multiple suppliers to reduce dependence on a single source of supply. In this way, even if one of the suppliers is facing a problem, the other suppliers can still provide support. 2. Regular risk assessment: Assess risks of the global supply chain on a regular basis, including regional political stability and natural disaster risks, in order to identify potential supply shortage risks as soon as possible. 3. Research on alternative materials: to find and research alternative non-metallic materials to deal with the supply shortage and mitigate the price fluctuation and supply uncertainty. 4. Partnerships: Establish stable and long-term partnerships. Through close cooperation, we can more flexibly respond to supply shortages and face challenges together. 5. Technological innovation: invest in technological innovation, find ways to improve production efficiency, reduce material use or develop new products, in order to reduce the demand for specific materials.

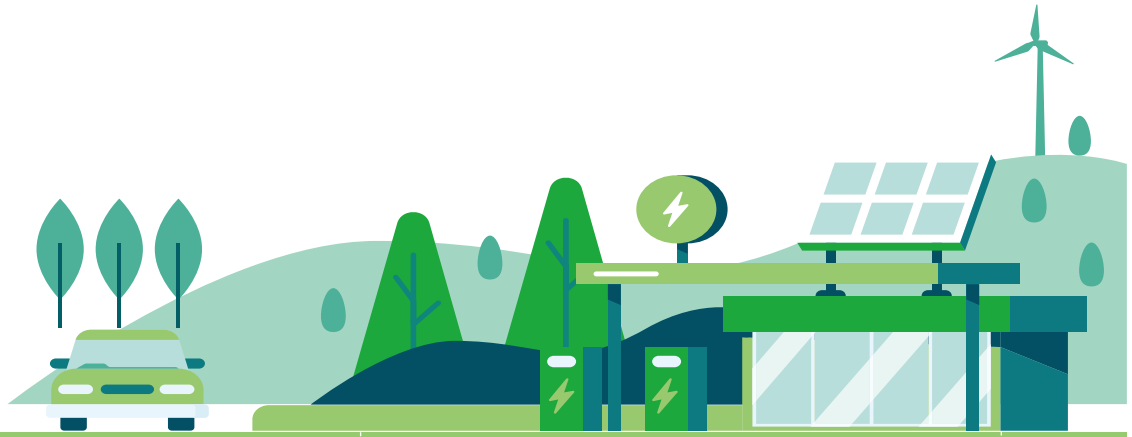
Dependent items	Opportunity description	Opportunity category	Financial impact	Mastering strategies
Scorching heat	Optimized energy management Improve resilience against natural disasters	External value: Ecosystem protection, Sustainable use of natural resources	Reduce operating costs	Fans are used in conjunction with air conditioners to prevent the indoor temperature from rising and to reduce the frequency of air conditioner operations.
Air quality degraded	Increased opportunities for constructing carbon capture facilities	Business performance: products and services	Reduce operating costs, increase revenue, and launch additional businesses	Continue to pay attention to the demand for carbon capture- related plant construction
Inadequate supply of fossil fuels	1. Opportunities in the renewable energy market: Turn to new market opportunities in renewable energy and clean technologies, such as green/blue hydrogen, blue ammonia, and energy storage technology. 2. Mastering high-performance products: It helps to reduce energy consumption and cost at the same time. 3 Participation in the carbon market: Participation in the carbon market and carbon trading system can reduce carbon emissions to the minimum level and bring economic benefits to the Company. 4. Energy management services: Plan energy management and optimization services to help the Company and property owners use energy more efficiently and reduce energy costs. 5. Technological innovation and R&D: Investment in emerging technologies and R&D may bring the Company a competitive advantage in the future and promote the development of the entire industry.	Business performance: resource efficiency, market, reinvestment External value: Ecosystem protection, Sustainable use of natural resources	Reduction of property losses Reduce operating costs Additional businesses Increase revenue	1. Environmental analysis: Understand the changes in the external and internal environment, including market trends, competition, regulatory environment, technological innovation, etc. 2. Goal setting: clarify the company's long-term and short-term goals, and ensure that the formulation and implementation of strategies are in line with these goals. 3. Implementation of the action plan: Formulate the corresponding concrete action plan according to the target, including resource allocation, personnel training, technology investment, etc., and ensure the effective implementation. 4. Monitoring and evaluation: Regularly monitor the implementation effect, conduct evaluation, and adjust strategies in a timely manner to deal with new challenges and opportunities. 5. Learning and improvement: to learn from the experience of implementation, to reflect, to continuously improve and to adjust strategies, in order to maintain adaptability and flexibility. 6. Upgrading of renewable energy technologies

Dependent items	Opportunity description	Opportunity category	Financial impact	Mastering strategies
Occurrence of flood	Improve resilience against natural disasters	External Value: Ecosystem protection	Reduction of property losses	Continue to improve the flood warning around the construction site to avoid the impact of disasters on the construction site.
Insufficient rainfall/ insufficient water resources	Increase job opportunities related to water resources in plant construction	External Value: Ecosystem protection, sustainable use of natural resources	Reduce property losses, increase revenue, and develop additional businesses	Each employee maintains the habit of storing and saving water to reduce man-made water shortage, and continues to pay attention to the water resource-related needs of construction.
Uneven rainfall	Develop good habits and improve resilience against natural disasters.	External value: Ecosystem protection, sustainable use of natural resources	Reduce operating costs	Each employee maintains the habit of storing and saving water to reduce man-made water shortage.
Deterioration of water quality	Increase job opportunities related to water resources in plant construction	Business performance: products and services External value: Sustainable use of natural resources	Reduce operating costs, increase revenue, and launch additional businesses	Encourage employees to use boiled water to reduce disease-causing pollutants, and continue to pay attention to the need for water purification for factory construction.
Shortage of non-biological materials (non-metallic)	1. Material innovation: Supply shortages can motivate the research and development of new alternative materials or improve the performance of existing materials, promoting innovation in materials science and engineering. 2. Circular economy: Apply the principles of circular economy to company operations, and find more effective solutions for resource use and recycling, thereby reducing the demand for limited materials. 3. Sustainable design: Emphasize sustainable design to reduce the impact of projects on the environment while improving the life cycle of use. 4. Supply chain optimization: Optimize the supply chain and increase flexibility to better respond to supply shortages and market changes. 5. Market competitiveness: Competitive advantages in adapting to new materials and supply chain models to meet the needs of business owners for sustainable products and environmentally friendly industries.	Business performance: resource efficiency, products and services, market, Capital flow, reinvestment External value: Ecosystem protection, sustainable use of natural resources	Reduce property losses and increase revenue	1. Environmental analysis: Understand the changes in the external and internal environment, including market trends, competition, regulatory environment, technological innovation, etc. 2. Goal setting: clarify the company's long-term and short-term goals, and ensure that the formulation and implementation of strategies are in line with these goals. 3. Implementation of the action plan: Formulate corresponding specific action plans according to the goals, including resource allocation, personnel training, technology investment, etc., and ensure effective implementation. 4. Monitoring and evaluation: Regularly monitor the implementation effect, conduct evaluation, and adjust strategies in a timely manner to deal with new challenges and opportunities. 5. Learning and improvement: to learn from the experience of implementation, to reflect, to continuously improve and to adjust strategies, in order to maintain adaptability and flexibility. 6. Green technology upgrade

Identification of natural impacts from business operations

CTCI conducted a matrix analysis for the impact materiality that is similar to the dependency materiality assessment. The results showed that greenhouse gas emissions, indirect energy use, and waste are the top three high-exposure impact issues, while high-risk impact issues include the use of mineral resources, new land development, proximity to sensitive biodiversity areas, use of genetically related materials, changes to the freshwater system, and introduction of exotic species, soil pollution, and wastewater. After advanced discussion by the working group, it was concluded that since the use of mineral resources, new land development, proximity to sensitive biodiversity areas, use of genetically related materials, alteration of the freshwater system, and introduction of exotic species are all indirectly related to CTCI's operation, they are temporarily excluded from subsequent management actions. For high-risk impact issues, the Company establishes management indicators, management measures, as well as targets for risk management and tracking.





Impact items	Impact description	Resulting changes in the state of the natural environment	Management indicators	Management measures	Target
Indirect energy use	Use of indirect energy (electricity, heat, steam, etc.) as an important input for production	Indirect impacts from energy production	1. 1st headquarters building sets annual EUI targets 2. Global construction sites set annual energy intensity targets	1. The headquarter building is equipped with an energy management system that can constantly monitor various power consumption data and regularly review energy consumption 2. Installation of solar panels in the headquarters building. 3. Application of green engineering technology to reduce electricity consumption during construction 4. Use of recycled materials to reduce energy consumption in production	Existing mitigation targets
Greenhouse gas emissions	Greenhouse gases are generated during the operation process (scope 1 and 2), and greenhouse gas has become an item of concern for customers.	Global greenhouse gas concentration is on the rise Stronger global warming potential Changes in global average temperature Rise of sea level Increased frequency of extreme meteorological events	1. According to the SBTi 1.5°C scenario, the reduction target of Scope 1 + 2 is set to reduce carbon emissions by 4.2% annually. 2. 1st headquarters building sets annual EUI targets 3. Global construction sites set annual energy intensity targets	1. The headquarter building is equipped with an energy management system that can constantly monitor various power consumption data and regularly review energy consumption. 2. Installation of solar panels in the headquarters building 3. Continuously monitor the consumption of gasoline and diesel at global construction sites	Existing mitigation targets aligned with SBTi
Waste water	Waste water (BOD, COD, etc.) generated from the operation process	Degraded water quality	The hazardous operating environment testing process and organization are established in accordance with the safety, health and environmental procedures, including the organizational structure and responsibilities, and the hazardous operating environment testing process and description.	Follow the regulations on air, water, waste, and toxic by the Environmental Protection Administration according to the project needs.	Existing mitigation targets
Soil pollution	Land pollution caused by the emissions	Degraded soil quality			
Waste	Industrial waste is generated during the operation process and needs to be reported	Different treatment measures will result in different results, which are indirect impacts.			

Impact items	Impact path	External pressure	Risk category	Financial impact	Responding measures
Indirect energy use	The use of traditional electric energy for construction on the project site increases carbon emissions. Any increase in energy costs will lead to an increase in the overall cost of the enterprise.	1. Increase the proportion of green power to reduce carbon emissions 2. Increase energy conservation 3. Increase green energy projects 4. Use recycled materials	Liability, market, technology	If the price of electricity increases by 1%, the cost will increase by about NTD$300,000 to NTD$600,000.	1. Use green power to meet the net zero goal as a ESG construction site 2. Proposal to introduce smart engineering 3. Construction modularization 4. Use recycled materials to reduce energy consumption in production.
Greenhouse gas emissions	As the world pays more and more attention to the greenhouse gas issue, international customers may include this as a scoring item when selecting a company, and the FSC in Taiwan has announced the disclosure requirements for TWSE/TPEX listed companies. If CTCI does not conduct inventory inspections and set reduction targets, it may affect customers' willingness to outsource and fail to meet domestic regulatory requirements.	1. Reduction of greenhouse gas emissions 2. Develop the Company's overall reduction plan	Liability, markets	Under the climate scenarios of NDC and NZE, the annual carbon fee is about NTD$ 480,000 to NTD$ 3,170,000.	1. Development of greenhouse gas reduction strategies 2. Set carbon reduction targets and pass SBTi verification
Waste water	An environmental fine was issued for wastewater pollution at construction sites.	1. Construction stage: If the grit chambers are demolished due to the construction process but there is no hinterland to be set up, the cost of external leased land or other alternatives will be increased. 2. Commissioning stage: If the waste water treatment system of the process is abnormal, the plant will be shut down, resulting in production loss; the cost will increase if it is carried by an external treatment unit.	Liability, market, reputation	CTCI has not been fined for pollution in the past 5 years. The application fee for construction site runoff permit is to be paid by the property owner.	1. During the planning and design stage, the flow of sewage discharge piping, the increase of maximum daily treatment capacity, or contingency measures in case of emergency installation are taken into consideration. 2. In the early stage of pre-construction stage, a backup waste water collection pool shall be set up to avoid storage and disposal under emergency conditions.
Soil pollution	1. If the proprietor fails to conduct soil sampling and analysis before handing over the construction, it is difficult to effectively clarify whether the pollution was caused before the construction or after the construction. 2. An environmental fine was issued for the soil pollution caused by the construction.	If the Environmental Protection Bureau determines that soil remediation is required due to soil pollution, huge costs or construction delays will be incurred. In addition, relevant equipment is installed in accordance with environmental protection regulations, and contractors are required to comply with environmental protection regulations.	Liability, market, reputation	In 2023, approximately NTD$550,000 was spent on site soil pollution assessment, survey and testing, and no pollution penalty was incurred.	1. If the land developed by the proprietor has soil pollution potential areas, a soil pollution sampling report is required. 2. Construction stage: The common soil pollution is the leakage of construction oil to the surface. It is required to install oil pans for oil drums and generators. 3. Commissioning and operation phase: The operation and control personnel in the commissioning phase shall not discharge non-sewage directly to the surface soil at will in case of emergency situation of the sewage treatment system.
Waste	1. An environmental penalty was issued for the construction site pollution. 2. A large number of licenses were revoked by government agencies for violation of regulations, which in turn affected the balance of supply and demand in the transportation market. 3. The generation of solid waste and the tightening of external regulations will cause enterprises to spend more costs on sorting and disposing industrial waste.	1. Relevant equipment is installed in accordance with environmental protection regulations, and contractors are required to comply with environmental protection regulations. 2. Due to the balance of supply and demand in the market, the cost of waste removal and transportation indirectly increased. 3. Waste management and enhanced waste reduction measures	Liability, market, reputation	Approximately NTD$56 million (headquarters building and construction sites) was spent on removal and disposal of waste in 2023, without penalty for pollution.	1. Assign personnel to strengthen the cleaning, dismantling and sorting of garbage in the construction area. 2. Recycling reusable waste materials, or matching them to ve used at other construction sites. 3. Estimate the type and quantity of scraps and the comparison with the design volume, which can be used as a reference for the planning of new projects in the future to avoid problems such as waste caused by excessive design.

Impact items	Opportunity category	Financial impact	Mastering strategies
Indirect energy use	Resource Efficiency, Goodwill Enhancement, Ecological Conservation, Sustainable Resource Utilization	Reduce operating costs and develop additional businesses	1. Joint research and development of new technologies with external scientific research units 2. Set proposal performance indicators through a refined proposal system.
Greenhouse gas emissions	Market, Sustainable Resource Utilization	Increase market opportunities	Cooperate with subsidiaries and external research units to continue to promote GHG inventory and reduction
Waste water	1. The government has launched several new projects for water reclamation plants and desalination plants 2. Effective wastewater treatment to provide a good water environment and maintain the ecological balance of the water area	1. Enhancement of reputation 2. External value: products and services, ecosystem protection	1. Expand the business of water resources and waste treatment, with potential business opportunities exceeding NTD$100 billion 2. Reduce operating costs (implementation of safety, health and environmental management to reduce the number of missing environmental protection tickets) 3. There must be a sewage drainage plan and a sand settling basin on the construction site, with the water not containing harmful ingredients or being polluted so as to be recycled and reused. 4. Encourage business partners to reduce waste, with a formulated incentive mechanism.
Soil pollution	Maintain the cleanliness of the site to avoid being fined		
Waste	1. In the next three years, Taiwan's six waste incineration plants will be replaced with new ones or be expanded; the trend of constructing recycling and zero waste center in various countries 2. Reusing not only reduces the generation of waste, but also reduces the Company's cost of purchasing new materials.		

Nature conservation measures

In response to the identified impact on certain wildlife conservation areas and wetlands within a 2-kilometer radius of the project site, measures have been taken to address the terrestrial and marine ecological environments. Prior to project implementation, an Environmental Impact Assessment (EIA) report is obtained to develop a management plan. The following table illustrates the potential impacts during the construction and operation phases, as well as the corresponding mitigation strategies. In addition, all personnel are required to undergo environmental education training on air pollution prevention, water pollution control, waste sorting and treatment, and other relevant topics before entering the construction site. During gatherings or meetings, relevant provisions of ecological conservation laws and the necessary actions for ecological protection are explained to the participants. Furthermore, re-education measures are implemented for individuals or contractors found to be in violation of regulations.

Ecology	Impact	Strategies and Improvement Measures	
		Avoidance	Restoration
Terrestrial Ecology	**Construction Period** 1.The dust and noise generated by construction vehicles cause poor growth of terrestrial animals and plants. 2.The noise, vibration, and dust generated by construction machinery affect terrestrial organisms. 3.Trucks generate dust, noise, vibration, and exhaust emissions during equipment or material transportation. **During the operational phase** 1.The operation of factory facilities generates noise and vibrations that impact terrestrial organisms. 2.During the transportation of raw materials, trucks generate dust, noise, vibrations, and exhaust emissions. 3.The production process generates emissions that affect air quality and impact terrestrial organisms.	1.During road planning, efforts will be made to avoid freshwater ponds as much as possible. 2.Equipment prone to vibration shall be set in a place far away from prone areas. **Mitigation** 1.The width of the road passing through windbreak forests will be minimized to reduce the impact. 2.Set up containment facilities and sprinkle water regularly to reduce dust. 3.Vehicles transporting earth shall be covered and car washing stations shall be set at the entrances and exits to prevent soil and particles from polluting the environment around the road. 4.Select excellent transportation tools and construction machines and tools, and maintain them regularly to reduce the exhaust gas and meet the emission standards. 5.Use machines and tools with low noise or silencing equipment. 6.Use temporary noise insulation facilities for construction machines and tools with high noise to reduce the impact. 7.Improve road conditions and reduce noise caused by vehicle vibration. 8.Construction machines and tools with low vibration are adopted. 9.Avoid truck overload and strictly limit the weight. 10.Installation of exhaust gas recovery equipment to ensure compliance with standards before emissions into the atmosphere. 11.Avoid conducting construction activities during nighttime to reduce the disturbance to surrounding habitats caused by lighting and construction noise.	1.In the planning of green belts and landscaping, priority will be given to selecting native tree species that combine windbreak, soil and water conservation, and aesthetic enhancement. 2.Natural construction methods are adopted to create habitats. Continuous monitoring of the ecology and environment serves as the foundational data for setting up and planning environmentally friendly measures in the surrounding area.

Ecology

Marine Ecology

Impact

Construction Period

1.During the construction period, dredging and earth filling can easily lead to water quality deterioration.
2.Improper disposal of construction waste leads to marine pollution and poses a qthreat to marine ecosystems.
3.The sediment generated during construction flows into water sources and affects marine organisms.

During the operational phase

1.The discharge of cooling water results in increased seawater temperature, which will impact the survival of coral reefs, fish, and other marine organisms.
2.The indiscriminate discharge of wastewater poses a threat to marine organisms.
The improper discharge of operational waste into the ocean without proper treatment.

Strategies and Improvement Measures

Avoidance

1.Set up an intercepting system and a silting basin to discharge the runoff water and general drainage sand after treatment, so as to avoid polluting the seawater quality.
2.General household waste and construction debris are entrusted to local sanitation authorities or government-approved professional waste management companies for collection and disposal, avoiding arbitrary dumping of waste that may pollute the ocean.

Mitigation

1.Sand dredging and land reclamation works will be carried out using low-pollution operating methods to minimize potential construction pollution.
2.Strengthen the maintenance of construction machines and tools and transportation tools to avoid oil pollution in water quality.
3.Domestic wastewater will be treated in wastewater treatment facilities before being discharged, thereby reducing water pollution.
4.Construction activities that are prone to cause water quality deterioration will be scheduled to avoid the breeding and nursery seasons of marine organisms as much as possible.
5.After the cooling water is cooled to an appropriate temperature and the water quality is confirmed, it can be discharged into the sea to reduce the impact of temperature on marine organisms.
6.Conducting thorough environmental monitoring to track the impacts of construction activities and promptly notifying the construction units of the monitoring results, in order to take timely responsive measures.
7.Installing temporary sedimentation basin and implementing temporary covering and waterproofing measures at each excavation site to reduce sediment runoff and minimize water pollution in the adjacent marine areas.

Restoration

Continuously monitor the ecology and environment to generate the foundational data for setting up and planning environmentally friendly measures in the surrounding area.

Client/Project

Taipower/ Taichung Power Plan

Species of concern

Black-winged kite, eurasian kestrel, and brown shrike

Impact minimization and conservation measures during the construction phase

1. During construction phase, the construction area is fenced and low-noise construction machines are used to reduce noise disturbance and avoid falling dust and human interference to the surrounding environment.

2. Plan a fixed transportation route for construction vehicles to reduce theiraccess to reduce their access, minimizing interference from noise and vibration.

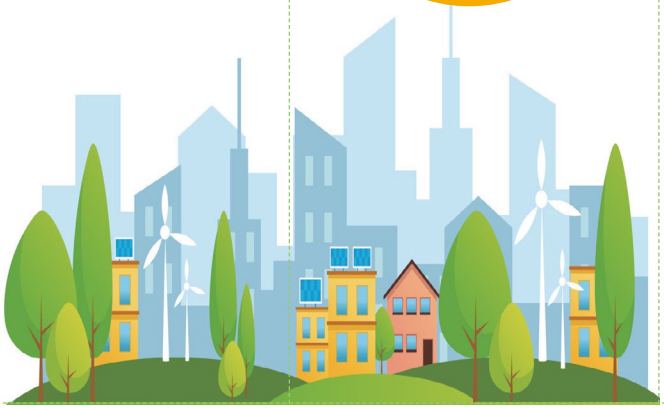
3. The exposed surface after construction is sprayed with grass seed to speed up the recovery of the vegetation and enhance soil and water conservation.

4. Harmful methods such as incineration or use herbicides usage to remove surface vegetation during the land preparation stage is prohibited

Related photos

Education and training on ecological environment protection

Client/Project	Species of concern	Impact minimization and conservation measures during the construction phase	Related photos
Taipower/ Hsinta Power Plan	black-faced spoonbill, greater painted snipe, osprey, little tern, eurasian kestrel, brown shrike, and peregrine falcon	1. Implement ecological conservation education and training for construction personnel. Frightening and intentionally disturbing wildlife is prohibited. When encountering wildlife that appears to be injured, individuals should report it to a wildlife rehabilitation unit. 2. Temporary soundproof walls or construction fences featuring sound insulation properties, such as close-fitting construction fences, are erected along the base boundary. Appropriate soundproofing or anti-vibration measures are implemented throughout the project, including the use of low-noise and low-vibration equipment, and concurrent construction operations involving a great deal of machinery are avoided. 3. Except for the necessary continuity construction, construction at night will be avoided. Lights and construction noise will be reduced to minimize interference to the surrounding habitats. 4. Protective measures were taken to prevent construction sewage from entering Yong An Wetland and the surrounding water area, and sprinkle water regularly to reduce construction dust and water pollution,while maintain the quality of the water habitat environment. 5. Set up grit chamber, closure ditch and other facilities to reduce the interference of construction sewage or sediment to the adjacent water body, and treat the discharged wastewater to meet the standards before discharge. 6. Prohibit arbitrary dumping of waste, include it in the self-inspection items of construction and acceptance inspection, and maintain the environmental quality of water habitats. 7. Domestic sewage from construction workers shall be properly collected and treated.	Sound insulation fences for alternative routes.  Car wash grit trap chamber 



Supply Chain Engagement

Vendors are important stakeholders for CTCI, and in the "Vendor's Commitments to Corporate Sustainable Management and Net Zero" issued by CTCI, vendors are required to commit to assessing and disclosing their dependence on and impacts on local and global biodiversity. They are expected to refrain from deforestation and gradually reduce negative impacts while enhancing positive ones. While reducing biodiversity-related risks, vendors should fully adhere to sustainable development principles in their mining, production, procurement, supply chain, utilization, and disposal processes. Together with CTCI, vednors are expectedto contribute to nature conservation efforts.

External initiatives and partners

To strengthen its influence on natural ecology and environmental protection, CTCI not only takes actions internally but also collaborates with external initiatives and partners, including various non-governmental organizations. Through these partnerships, CTCI actively invites its employees and their families to participate in initiatives aimed at raising public awareness and understanding of the value and importance of biodiversity conservation, and promote the mainstreaming of biodiversity.

TNFD Early Adopter

After TNFD finalized the final version of the framework in September 2023, it became the standard for companies to disclose natural risks and related strategies. CTCI promised to disclose the nature-related risks and strategies of company operations and became the first batch of TNFD early adopter companies in the world. From 46 countries around the world, there are 320 commercial and financial institutions have joined, and 14 companies from Taiwan are listed.

Business for Nature initiatives

The initiative of more than 400 business and financial institutions from 52 countries, including CTCI, helped persuade governments to adopt Target 15 of the Global Biodiversity Framework at the United Nations Conference on Biological Diversity (CBD COP15) in Montreal: requiring large and transnational companies and financial institutions assess and expose their risks, impacts and dependencies on biodiversity by 2030. The hope is to reverse nature negtive by 2030.

Participate in the "Earth Hour" campaign

CTCI Group has been actively participating in the "Earth Hour" campaign initiated by the World Wide Fund (WWF). All of our domestic and overseas companies have joined this global initiative by switching off non-essential electricity for one hour, demonstrating our commitment to sustainable development. To make colleagues feel more involved, we specially organize activities on the social media Facebook. If you respond together, you can participate in the lucky draw.

Responding to the "Take Action for Tamsui River" campaign launched by CommonWealth Magazine, Responding to the "Take Action for Tamsui River" campaign launched by CommonWealth Magazine, we participate in this initiative to restore clean water sources and preserve the biodiversity of the Tamsui River. We encourage our colleagues to support this initiative through concrete actions in their daily lifes. The following are ways to participate:

(1) Reduce the use of disposable packaging and avoid purchasing products that are excessively packaged.
(2) Encourage green procurement, such as choosing environmentally friendly labels and low-carbon products.
(3) Supervise waste disposal contractors to prevent indiscriminate dumping of waste.
(4) Drive the value chain by adopting high-standard wastewater treatment and reducing construction waste.

Guandu Nature Park: Tamsui River Wetland Protection

CTCI collaborates with Guandu Nature Park to lead employees and vendors on a visit to an important natural asset in Taipei City, the Guandu Wetland, which is an important national level wetland. The program begins with an introduction to wetlands, followed by a professional guided tour of different wetland habitats. Through active participation, participants engage in wetland conservation efforts by eliminating invasive species like the bitter vine (*Mikania micrantha*), reducing their impact on native species, contribute to the protection of biodiversity in the Guandu Wetland. These activities aim to safeguard the diverse range of waterbirds, mudskippers (*Periophthalmus modestus*), fiddler crabs (*Uca formosensis*), and mangrove (*Kandelia obovate*) in the area, minimizing their vulnerability to external influences.

A total of 57 group colleagues and external supplier partners participated in this event to implement environmental actions together, protect Tamsui River and wetlands, and strive to maximize sustainable influence from the perspective of the value chain and make concrete contributions to biodiversity.

Green New Life - Protecting Habitats in Taiwan

Collaborating with OKO Green, we combine fair trade products with habitat conservation, encouraging employees to increase their green consumption. We pledge to donate 10% of the purchase amount to the Taiwan Environmental Information Association, safeguarding 3% of Taiwan's habitats and making our contribution to ecological preservation in Taiwan.

Urban Explorers Biodiversity Collaboration Project

CTCI, together with Zhishan Cultural and Ecological Garden and nine cultural exhibition halls in Taipei City, jointly practice ecological conservation, and join hands with public to become urban explorers. Together, they participate in surveys and implement conservation plans to protect Taipei City's biodiversity. Ecological surveys are carried out on average once a week. Through continuous data accumulation, we can roughly compare the differences in species richness in rural areas, waterfront areas, and urban core areas. The number, location, and photos of organisms are recorded in ecological database systems such as eBird, which regularly establishes records of Taipei City's biodiversity. In 2023, a total of 1,097 people participated in the survey, and 920 species of organisms were surveyed, with fruitful results.

A walking tour of Wufenggang Creek and Linong Wetland

Beside Wufenggang Creek, it is an old river channel where Shuang Creek into the Keelung River. It is the only natural river channel in Taipei that is not cemented, and the Linong Wetland where the basin is located is very ecologically rich. The Beautiful Waterways Association, which is the adopter of Wufenggang Creek, was invited to lead colleagues along the banks of the stream to learn about the beautiful natural environment around the company. They also learned about the harmful plant Adenophora spp. The impact of invasive alien species has made colleagues pay more attention to natural ecology and environmental protection.

CH2

CTCI's Sustainable Role

CTCI's Sustainable Role III — The Best Employer That Builds a Happy Workplace

CTCI's Sustainable Role III — The Best Employer That Builds a Happy Workplace

CTCI strives to create the best and safest working environment, and enhance the knowledge and skills of engineering design and professionalism to enrich employees' competence and professionalism in their career development. CTCI considers various factors and measures to make the working life of employees better. We carefully listen what employees have to say and try to achieve a balance in both work life and personal life and have created a long-term retention system. The aim is for employees to be able to grow together with CTCI and help them gain affirmation on an international scale.

72%

Proportion of highly recognized employee engagement

76.47%

Percentage of job openings filled by internal candidates

11
Consecutive Years

Taiwan HC100 Index

Healthcare Platform

Establishing a group- based healthcare platform to manage real-time health status(es)

Talent Recruitment and Retention

Talent Recruitment

Employees have always been the company's most valued and prized assets and are also the strongest support in promoting engineering services of CTCI internationally. With the culture of "Professionalism, Integrity, Teamwork and Innovation", CTCI is committed to providing talents with a friendly and healthy workplace where they can learn, grow, and build their dream career. CTCI has no gender bias in talent selection process. Academic capability, collaborative attitude, and suitability of the working culture are the three essential focuses in our recruitment procedure. With CTCI's growth in business, global talents have been recruited through diverse channels such as collaborations with industries and academia, overseas recruitment and recruitment websites (LinkedIn, etc.). In 2023, there were 857 new recruits, which accounted for 24.89 % of CTCI's total number of employees. Among the new employees, 42.47% were under the age of 30. CTCI has recruited a total of 2,262 new talents in the past four years and have been continuously contributing to the innovation and vitality of the Company.

CTCI Global Talent Recruitment Channels

CTCI Global Talent Recruitment Channels

- Recruitment expositions and briefings in campus(es)
- Corporate visitation and special topics lectures in campus(es)

38 sessions

Overseas Recruitment

- Active recruitment of top individuals from overseas via human resource agencies campus(es)

15 talents from overseas

Recruitment website

- 104 job bank **+581,078** views
- LinkedIn social network **+53,241** views
- Facebook social network **+45,947** views

Newly Hired Employees

		2020		2021		2022		2023	
		Number of recruits	Percentage of people (%)	Number of recruits	Percentage of people (%)	Number of recruits	Percentage of people (%)	Number of recruits	Percentage of people (%)
Gender	Male	94	4.81	320	16.06	538	24.39	580	23.60
	Female	49	7.95	141	20.86	263	31.76	277	28.09
Age	Under age 30	65	19.76	162	47.93	336	62.92	364	51.93
	Age30-50	57	4.10	215	14.56	339	21.31	381	21.30
	Over age 50	21	2.47	84	9.85	126	13.86	112	11.74
Management Position*1	Senior Manager	2	6.67	0	0.00	2	8.00	0	0.00
	Mid-level Manager	8	1.71	15	2.77	12	2.14	13	2.24
	Junior Manager	7	0.95	44	5.66	95	11.54	116	13.33
Non Management position	Engineers	84	8.56	280	30.14	473	42.88	516	38.57
	Specialists	29	9.48	77	23.84	155	37.71	177	35.69
	Technicians	13	26.00	45	64.29	64	57.66	35	27.56
Nationality	Taiwan	137	5.43	431	16.56	774	26.16	804	24.14
	Overseas*2	6	13.04	30	46.15	27	36.00	53	46.90
Rate of Newly Employed Individuals*3		5.56%		17.28%		26.4		24.88	
Total Number of Recruits		143		461		801		857	
Average Recruitment Expenses (NT$)		15,337.6		13,901.1		13,449.6		13,133.8	

*1:Definition of Management Position: Senior Manager refers to the position of Vice President and above. Mid-level Manager include chief engineer, deputy chief engineer, assistant chief engineer, and senior specialist. Junior Manager include head of engineer, senior engineer, specialist I, and specialist II. The classification of all subsequent data shall be consistent with this definition.
*2:Includes Indonesia, India, Thailand, Malaysia, Republic of South Africa, United States of America, Pakistan, Hong Kong and China.
*3:Recruitment rate: Number of newly recruited employees/ number of employees in the current year.

The overall turnover rate in 2023 is 6.62 %. As the number of voluntary resignations decreased compared with the previous year and the total number of employees increased, the turnover rate also dropped significantly from the previous year's 9.75%. Among the employees who resigned, the engineer grade had the highest turnover rate. Meanwhile, it was found that 11.44 % of newly recruited employees in 2023 applied for a resignation within a year of employment. The resignation of contract and temporary employees was due to the manpower required according to the progress of the project, Manpower required for such operation process of the engineering services was unstable and unpredictable. For full-time employees, the human resources unit would look deeper into the reasons for their resignation by carrying out a resignation analysis report, conducting a survey on employee resignation, and face-to-face communications. In summary, it has been found that remuneration and benefits, career development, and job content are the main reasons for employee's resignation.

In order to retain outstanding talents, in addition to th the four-year retention measure, we have further planned a restricted stock program, hoping to retain more talents, and through differentiated management and promotion measures, allow outstanding talents to learn quickly , pay differentially , rotation experience, domestic EMBA and foreign further study topics, etc. implement comprehensive training and talent retention measures. The performance appraisal system is divided into A (Potential correlated with annual salary adjustment) and B (Performance Evaluation correlated with year-end performance bonus), which can further distinguish the performance of colleagues. For the top 5 % employees, the salary of outstanding employees of each operating unit will be adjusted significantly in addition to the existing salary adjustments and bonuses. A horizontal evaluation meeting hosted by the chairman will also be held to discuss promotion, salary adjustment, and career planning for colleagues with outstanding performance of each operating unit, increase the centripetal force of outstanding colleagues and drive positive competition and influence among peers.

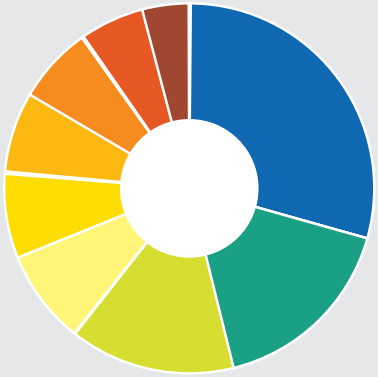
CTCI Employee Turnover

		2020 年		2021		2022		2023	
		Number of recruits	Percentage of people (%)	Number of recruits	Percentage of people (%)	Number of recruits	Percentage of people (%)	Number of recruits	Percentage of people (%)
Gender	Male	317	16.22	277	13.91	323	14.64	299	12.16%
	Female	89	14.45	80	11.83	118	14.25	113	11.46
Age	Under age 30	68	20.67	72	21.30	78	14.61	85	12.13
	Age30-50	189	13.59	175	11.85	245	15.4	210	11.74
	Over age 50	149	17.53	110	12.90	118	12.98	117	12.26
Management Position[*1]	Senior Manager	8	26.67	1	3.70	8	32.00	1	3.13
	Mid-level Manager	41	8.78	59	10.91	49	8.73	43	7.40
	Junior Manager	75	10.19	62	7.97	99	12.03	85	9.77
Non Management position	Engineers	191	19.47%	158	17.01	197	17.86	182	13.60
	Specialists	59	19.28%	52	16.10	66	16.06	81	16.33
	Technicians	32	64.00%	25	35.71	22	19.82	20	15.75
Nationality	Taiwan	396	15.69	346	13.29	425	14.36	399	11.98
	Overseas	10	21.74	11	16.92	16	21.33	13	11.50
Full-time Employee	Voluntary turnover rate	8.95		9.33		8.83		5.95	
	Involuntary turnover rate[*2]	0.89		0.52		0.59		0.64	
	Ratio of turnover due to poor performance appraisal	0.51		0.11		0.33		0.03	
	Total turnover rate	10.35		9.96		9.75		6.62	
Contract employee and temporary employee turmover rate[*3]		5.45		3.41		4.78		5.34	

*1: The above calculation of turnover rate is based on all employees as the denominator.
*2: The reasons for involuntary turnover include contract expiration, retirement due to age, death, etc.
*3: Most of the contract and temporary employees are hired to work on individual projects. In recent years, domestic construction projects have been completed one after another, resulting in a high turnover rate as these employees are unable to keep providing labor services.

2023

Distribution of reasons for resignation



- Remuneration 29.34%
- Work content 17.37%
- Career planning 17.37%
- Family reasons 8.98%
- Not compatible with the corporate cultur 7.19%
- Further study 7.18%
- Management style 6.59%
- Career change 5.99%
- Health reasons 3.59%

Remuneration

- Conducting market salary surveys and providing relevant salary reviews and recommendations to management, Remuneration Committee, and the Board of Directors.
- Initiating the Four-Year Retention plan and reinforcing promotions for shareholding bonus and employee stock options.
- Implementing a performance-based compensation framework, increasing the salary rate for outstanding employees, and focus on the retention of experienced workers who are the link between the past and the next.
- The entry level salary standards for university graduates and masters are reviewed every years. The adjustments made salary structure in 2021, 2022, 2023, salary scale was adjusted in Janurary 2024.
- Encouraged supervisors above the general manager level (and included) to engage in advanced studies with full subsidy for EMBA tuition and miscellaneous fees.
- Launched a restricted stock plan in 2021. In 2022 and 2023, new restricted employee shares will be issued, and the employees receiving them will be entitled to dividend distribution before the vested period. The dividends will be awarded to employees for free when they expire.
- Other long-term incentive measures

Career planning

- I mplementing the "transparent promotion system," reinforcing the cultivation of talents, and having supervisors and colleagues communicate in a timely manner.
- Through the training roadmap and structure of CTCI University, complete and multidisciplinary trainings are provided.
- Provides comprehensive learning and development opportunities as well as elaborate career paths according to IDP data.
- Facilities Business Operations (ATFBO) was formally established in September, 2020 to encourage colleagues to develop expertise outside the engineering field and have learning opportunities, such as high-tech plant system design, clean room, chemical supply system, etc.
- Opportunities of job rotation and expat package assignment are provided to support employees' diversified development.
- Speeding up the plan on the cultivation of talents and have the chairman of the group as the "Group Mentor" to pass on his or her experience.

Work content

- Strengthening employees' functional training and allow them to communicate on the direction of future developments, distribute workload evenly.
- Fortify the communication and dialogue methods：
  - 〉The Group's consensus meeting is held every year. In addition to the participation of senior executives, we also expand the scope of invitation to participate.
  - 〉Questions about business strategies are collected and answered by the heads of each business unit; after the consensus meeting, the actual video of the day is uploaded to CTCI University for the reading of the whole group, so that all employees of the group can clearly understand the future goals and directions, and work hard together with the Group.
  - 〉The Human Resources Department will host seminars hosted by senior executives for two-way communication on the Company's operational development and related management strategy planning and execution.
  - 〉The communication meetings of each business unit and each department are hosted by the supervisor to communicate with colleagues on the relevant policies.
  - 〉The direct manager communicates with employees for one hour every month to understand the problems encountered at work and seek solutions.
- Provide various training sessions for supervisors, such as improving intuition and abilities in hiring interviews, boosting skills in giving instructions, and enhancing communication skills for instructing newly onboarded employees.
- Employees are encouraged to take advantage of CTCI University to gain training in various professional skills and general courses. After the training, a competence assessment will be carried out to identify gaps in professional skills and knowledge.
- Continue the launch of different programs, such as recharging, overseas learning rotations (in the USA) and other plans.

Distribution of CTCI Employees

In regards to the industry demographics of engineering, the employees of CTCI is male-dominated. In 2023, the total number of employees were 3,444 people (excluding other related companies in the group), of which 2,458 were males and 986 were females. The ratio of female to male employees was 1: 2.49. The majority of the age group ranged from 30 to 50. More than half of the total employees (50.46 %) have worked at CTCI for more than five years. This is beneficial for the inheritance and expansion of engineering technology and business. In terms of their educational level, about half of the employees (42.86 %) have a Master's degree or above. Clearly, CTCI prioritizes employees' ability in being professional and knowledgeable in the industrial field, their ability to gradually inherit and pass on the industrial experience, and their ability to strive for sustainable development in the engineering industry.

Distribution of CTCI Employees

Type		2021				2022				2023			
		Male	Female	Subtotal	(%)	Male	Female	Subtotal	(%)	Male	Female	Subtotal	(%)
Age	Under age 30	227	111	338	12.67	336	198	534	17.60	444	257	701	20.35
	Age 30-50	1,112	365	1,477	55.36	1,170	421	1,591	52.44	1273	516	1789	51.95
	Over age 50	653	200	853	31.97	700	209	909	29.96	741	213	954	27.70
Non Management position	Engineers	730	199	929	34.82	843	260	1,103	36.35	1016	322	1338	38.85
	Specialists	52	271	323	12.11	70	341	411	13.55	78	418	496	14.40
	Technicians	50	20	70	2.62	85	26	111	3.66	103	24	127	3.69
Management position	Senior Manager	24	3	27	1.01	24	1	25	0.82	30	2	32	0.93
	Mid-level Manager	493	48	541	20.28	504	57	561	18.49	521	60	581	16.87
	Junior Manager	643	135	778	29.16	680	143	823	27.13	710	160	870	25.26
Employment Status	Full-time Employee	1,729	523	2,252	84.41	1,780	576	2,356	77.65	1874	638	2512	72.94
	Contract Employee	204	61	265	9.93	331	74	405	13.35	523	116	639	18.55
	Temporary Employee	59	92	151	5.66	95	178	273	9.00	61	232	293	8.51
Place of Work	Taiwan	1,812	658	2,470	92.58	2,052	815	2,867	94.50	2370	978	3348	97.21
	Overseas [*1]	180	18	198	7.42	154	13	167	5.50	88	8	96	2.79
Nationality	Taiwan	1,939	664	2,603	97.56	2,149	810	2,959	97.53	2375	956	3331	96.72
	Overseas [*2]	53	12	65	2.44	57	18	75	2.47	83	30	113	3.28

Note 1: Includes Malaysia, Qatar, India, Arabia, USA, Thailand, Vietnam, Singapore, Macau and China
Note 2: Includes Malaysia, Indonesia, Philippines, India, Vietnam, Thailand, Republic of South Africa, Nepal, USA, Pakistan, Hong Kongand China.
Note 3: CTCI has three subsidiaries: Qatar, Abu Dhabi, and Italy. The top executives of the three subsidiaries are employees of CTCI. The Qatar subsidiary has hired 9 local employees, who are not included in the annual total employee count.
Note 4: The part-time employees of CTCI are included in the above contracted employees, which are 30 males and 16 females, who are hired on fixed-term contracts; non-employees include dispatch and site contractors. The number of dispatched employees is as shown in the data above. The number of site contractors is mainly in Taiwan and is consistent with the 2,835 applicants reported, registered, and verified on the Taiwan Occupational Safety and Health Management Systems (TOSHMS) set by the Occupational Safety and Health Administration, Ministry of Labor.
Note 5: CTCI hires foreign workers to work on public construction projects, and plans and adjusts strategies based on actual manpower needs. In 2023, CTCI hired 2,356 foreign workers. Considering the project progress, customer requirements, and government regulations, manpower requirements are prone to drastic changes. Therefore, they are not included in the calculation of the annual total workforce in accordance with the Labor Standards Act and related regulations.

As our engineering projects spread all over the world, CTCI strives to create a diverse and inclusive workplace atmosphere. By hiring employees of different genders, religions, races, nationalities, ages and ethnic minorities, we bring diverse perspectives to the organization. Inclusive organization becomes a boost to support CTCI's continuous growth. At important global locations (Beijing, Shanghai, Vietnam, Thailand, India, and the United States) and project locations (such as Oman, Saudi Arabia, Malaysia, Singapore, the Philippines, and the United States), we also recruit local professionals to display our tolerance and commitment in management as demonstrated in multiculturalism and ethnicity. In 2023, In addition to our own nationalities, CTCI has employees from 12 different countries, which demonstrates that CTCI values talent, respects diversity, demonstrates tolerance, and co-creates a shared international outlook. As CTCI is operating mainly based in Taiwan, 96.88% of the high-ranking supervisors are Taiwan residents to demonstrate our strong presence in the domestic market and promote local economy. CTCI recruited 19 indigenous people and 37 people with disability in 2023. Among them, 54.05% of the colleagues with disability are entry-level employees or mid-level managers.

Diversified recruitment

		2021				2022				2023			
		Planned number of recruits	Number of recruited employees	Discrepancy	Recruitment ratio (%)	Planned number of recruits	Number of recruited employees	Discrepancy	Recruitment ratio (%)	Planned number of recruits	Number of recruited employees	Discrepancy	Recruitment ratio (%)
Indigenous people	Including foreign workers	27	11	16	0.41	38	14	24	0.37	54	19	35	0.35
	no include foreign workers	24	11	13	0.46	26	14	12	0.54	30	19	11	0.63
People with Disabilities*1	Including foreign workers	27	32	Over-recruitment of 5 people	1.19	38	36	2	0.95	54	37	17	0.69
	no include foreign workers	24	32	Over-recruitment of 8 people	1.33	26	36	Over-recruitment of 10 people	1.38	30	37	Over-recruitment of 7 people	1.32
Nationalities of employees (excluding R.O.C. nationality)		12 Malaysia, Indonesia, Philippines, Iran, India, Vietnam, Thailand, United Kingdom, Burkina Faso , Swatini, Hong Kong, and China.				12 Malaysia, Indonesia, Philippines, Iran, India, Vietnam, Thailand, Republic of South Africa, Burkina Faso , Nepal , Hong Kong, and China				12 Malaysia, Indonesia, Philippines, India, Vietnam, Thailand, Republic of South Africa, Nepal , USA, Pakistan,Hong Kong, and China			

*1: According to the law, any company whose number of employees exceeds 100 people should have at least 1% of total employees who are mentally or physically challenged and indigenous people . The number of total employees should include all the insured persons reported to Taiwan's Bureau of Labor Insurance inclusive of the number of foreign labors.

Distribution of Employees' Nationality

Nationality	Percentage of Total Employees (%)			Percentage of Supervisors (%)		
	2021	2022	2023	2021	2022	2023
Taiwan	97.56	97.53	96.72	98.44	98.58	98.45
India	0.71	0.4	0.52	0.59	0.43	0.54
Indonesia	0.75	1.02	1.48	0.22	0.14	0.27
Malaysia	0.52	0.59	0.75	0.45	0.50	0.54
Iran	0.07	0.07	-	0.15	0.14	-
China	0.07	0.07	0.09	-	-	-
Philippines	0.07	0.07	0.06	0.07	0.07	0.07
United Kingdom	0.04	-	-	0.07	-	-
Hong Kong	0.04	0.03	0.09	-	-	-
Thailand	0.04	0.1	0.12	-	-	-
Vietnam	0.04	0.03	0.03	-	-	-
Swatini	0.04	-	-	-	-	-
Burkina Faso	0.04	0.03	-	-	-	-
Nepal	-	0.03	0.03	-	0.07	0.07
Republic of South Africa	-	0.03	0.06	-	0.07	0.07
USA	-	-	0.03	-	-	-
Pakistan	-	-	0.03	-	-	-

Although the industry that CTCI is dedicated to is usually perceived as male-dominated, the company emphasizes talent as the sole criterion for employment and adopts an open and diverse attitude to recruit professional talent. By disclosing the percentage of female employees at different levels and by setting long-term goals, we continue to strive for equality and inclusion, and demonstrate our role as the best employer that builds a happy workplace.

Percentage of Female Employees and Female Supervisors

	2021	2022	2023	Goal of 2030
Percentage of female employees (%)	25.34	27.29	28.63	25.00
Percentage of female supervisors (%)	13.82	14.27	14.97	15.00
Percentage of female senior Executives (%)	11.11	4.00	6.25	7.00
Percentage female mid-level managers (%)	8.87	10.16	10.33	12.00
Percentage of female junior-level managers (%)	17.35	17.38	18.39	20.00
Percentage of female supervisors at revenue-generating units *1	9.51	9.79	12.45	12.00
Percentage of STEM female staff (%)*2	18.37	19.34	20.08	20.00

*1: Revenue-generating units include EPCO perations(EPCO), Infrastructure, Environment & Power Business Operations (IEPBO), Hydrocarbon Business Operations (HBO), and Plant Maintenance Business Operations (PMBO).
*2: STEM: Includes EPC Operations (EPCO), Infrastructure, Environment & Power Business Operations (IEPBO), Hydrocarbon Business Operations (HBO) and Plant Maintenance Business Operations (PMBO), and departments such as Quality, HSE, and IT. The classification of occupations is in the field of engineers (including management and non-management positions).

Salaries and Benefits

Living Wage

The purpose of a living wage is to secure the basic livelihoods of employees so that they are able to pay for their basic living costs. In addition to complying with monthly minimum wage provision by law, CTCI takes care of colleagues and their families by providing food, clothing, housing, transportation, education, and insurance. It gives families more security so that their remuneration can stably meet the needs of family lives.

Apart from considering factors such as income and expenditure, the possibility of savings needs to also be considered. Therefore, CTCI provides colleagues a shareholding trust plan. Depending on their own financial situation, colleagues can withdraw a portion from their salary every month (5 %, 10 %, or 15 %) while the Company will allocate 50 % to it. This is known as "shareholding trust account," where employees are encouraged to save and work together with the company and share the fruit of work as shareholders. Furthermore, based on the Company's performance appraisal policy, salary adjustments and bonuses are distributed according to colleagues' working performance to motivate their engagement at work.

In order to encourage colleagues to integrate into the Company, four employee stock option certificates have been issued, targeting all employees, as well as measures planned such as increasing the shareholding percentage of specific managers each year. For 11 consecutive years, CTCI has been incorporated into "Taiwan HC100 Index," a salary and compensation index among Taiwanese companies.

-Each year, an external professional consultant, Wills Towers Watson, is entrusted to conduct a salary survey tounderstand relevant information on the external market in order to measure and maintain a certain competitive advantage in salary, which is quite helpful for the recruitment and retention of talented employees.

-The Economics Report serves as a reference of the annual cost of living at various countries/cities. Differences between work location such as urban or rural areas are taken into account to adjust the salary of colleagues around the world. This can aintain the necessary expenditure required of the local area among employees.

-The local "basic quality of living cost" and "workers' well-being" were analyzed based on the locations of employees at important operating locations, key first-tier suppliers, and contractors. They were measured in collaboration with the Center for Corporate Sustainability of Tunghai University in addition to the adoption of a proposed framework by Anker, (2011) and Anker and Anker, (2017). This helps us understand the basic needs of employees, suppliers and contractors in the cost of food, clothing, housing, education, social insurance, and others (such as unexpected incidents). After formulating a living wage, in line with the characteristics of the project engineering industry, the prevailing wage will be compared with the formulated living wage to understand whether the wage is sufficient to support the local standard of living, and if it can maintain the well-being of workers in the entire engineering industry chain.

As for the remuneration system, the salary structure is determined through internal and external evaluations. The internal evaluation is conducted through assessment of job competency and positions, while the external evaluation is conducted through surveys of general wages in the current occupational market. A salary review and adjustment will be made through an assessment including job competency and performance of each employee.There is no gender distinction in salaries. Men and women with the same work responsibilities and work value receive the same wages and remuneration. All employees (including full-time, contract, and dispatch) are controlled in accordance with the principle of the salary policy. The minimum salary is higher than the basic salary according to local laws and regulations; In 2023, the minimum starting salary of male employees will be 1.09 times the basic salary, and the minimum starting salary of female employees will be 1.04 times the basic salary.

Female/Male Salary Ratio

		2021		2022		2023	
		Basic Salary	Remun-eration	Basic Salary	Remun-eration	Basic Salary	Remun-eration
Management position	Senior Manager	1.07	1.08	0.95	1.06	0.98	1.03
	Mid-level Manager	1.01	1.03	1.01	0.99	1.02	1.03
	Junior Manager	1.01	0.96	1.01	0.97	0.99	1.02
	Management	1.01	1.01	0.93	0.97	0.93	0.93
Occupational Classification	Engineers	0.99	0.95	0.97	0.94	0.99	0.98
	Specialists	1.03	0.94	1.02	1.00	0.98	1.00
	NonManagement	1.00	0.94	0.98	0.97	0.99	0.99

Compensation: basic salary plus bonus, overtime pay, etc. Basic salary and Remuneration ratio are calculated based on Full-time Employee

Average salary and median salary of full-time employees who are not in supervisory positions

	2022(a)	2023(b)	Discrepency between 2022 and 2023 (b-a)/b
Number of full-time employees who are not in supervisory positions	3,016	4,362	30.86%
Average salary of full-time employees who are not in supervisory positions (in thousand NTD)	1,160	1,032	-12.40%
Median salary of full-time employees in non-supervisory positions(in thousand NTD)	1,014	886	-14.45%

** In 2023, both the average and median salaries of full-time employees decreased compared to 2022. This was due to the increase in the number of foreign laborers hired for construction sites (2022: 1,192 people, 2023: 2,356 people)."

CTCI offers employees a comprehensive benefit system that is better than the statutory standards and meets their employees' needs. There are unpaid leaves, group insurance, employee stock trust, language and professional training and parental leaves. In the old pension system, professional actuaries are hired to safeguard the retirement rights of employees who chose the old pension system. The provision rate for the new pension system is 6 %, which is fully provided by the company and is applicable to all employees who choose the new pension system.

A Benefit System that is Superior to Statutory Requirements

Standard leave without pay	Employees who fall ill may apply for an unpaid leave.
Flexible working hours	Flexible working hours: 7:30~8:30 in the morning, 16:30~17:30 get off work. The employee may apply for the following to raise children under the age of three: Work hour can be reduced by an hour without pay or adjustment of work time The employee who needs to suckle child less than two years old can apply for twice of paid leave per day for feeding with thirty minutes. The employees who work overtime in excess of 1 hour of daily normal work hours, their employers shall provide them an additional thirty minutes for feeding or breast milk collection. The time for feeding or breast milk collection referred to in the preceding paragraphs shall be deemed as working time. Various working hours and leave , leave less than one day will be counted by 0.5 hour, considered one day for accumulative eight hours.
Part-time employees	According to the personal situation or to provide technical guidance to recruit experts, employees who are considered part of the working hours can be specially signed according to the needs of the case.
Leave for parenting	After six months of full-time employment, if the child of the employee has not reached three years of age and if the spouse is also employed, the employee may apply for leave without pay until the child reaches the age of three, provided that the leave period does not exceed two years. If the employee raises two or more children at the same time, the period of parental leave without pay shall be calculated on a combined basis, up to a maximum of two years for the youngest child.
Maternity leave	Female employee can get continuous ten weeks of paid maternity leave before and after childbirth (From September 1, 2023, the period will be increased from 8 weeks to 10 weeks)
Paternity check -up and paternity leave	When an employee accompanies their spouse for pregnancy checkups or such spouse is in labor, their employer shall grant the employee ten days off as pregnancy checkup accompaniment and paternity leaves. (From September 1, 2023, the period will be increased from 8 weeks to 10 weeks)
Breastfeeding room	Provide a safe and confidential breastfeeding space and facilities for employees to use; such as the door with a fingerprint recognition system, dedicated refrigerator, sink, emergency bell, Sofa seats for personal privacy, fire-proof curtains, breastfeeding nursing-related health education posters, etc. Obtained "Excellent Breastfeeding Room Certification" since 2019.
Leave for family care	The employee whose spouse is also in work can apply for unpaid leave for family care when family member needs care for vaccination, serious disease, or other accidents, with maximum of seven days per year and counted as affair leave.

Health Examination	The annual health examination fee is $1,500, which can be used cumulatively for three years. From January 1, 2024, the annual subsidy amount for health examinations is increased, and taking into account the needs of different age groups, the subsidy amount will be increased as the age of colleagues increases, as below: Objects: VP & Above / Over 65 ages / Between 40-65 ages / Under 40 ages Before Adjustment: bsidy 50% of total fee / TWD$1,500/per year / TWD$1,500/per year / TWD$1,500/per year After Adjustment: bsidy 50% of total fee / TWD$6,000/per year / TWD$3,000/per year / TWD$2,000/per year The accumulated health account limit remains unchanged for a maximum of 3 years, and the health center will also discuss health check-up plans with medical institutions.
Group insurance	The company fully covers the medical insurance (hospitalization, accidental injury, funeral allowance), life insurance, accident and occupational disaster insurance. Employees can choose additional hospitalization medical insurance, accidental injury medical insurance, maternity insurance, parental hospitalization medical insurance, cancer medical insurance, funeral allowance for dependents (50% of the optional items are borne by the company and 50% by employees)
Stock option	CTCI Corporation Employee Shareholding Committee" was established to operate employee stock trust funds. Participants: Full-time employees can choose to join after passing the probation period, and contract and temporary employees can choose to join after three years of employment. By the end of 2023, the total number of participants amounted to 1,891 and the participation rate was 72.31 %.
Language Training	TOEIC Learning Subsidy: Subsidy per person is 50% of actual learning fees, with a maximum limit of NT$12,000.
Professional training	Employees who are assigned to participate in a short-term professional training for operational purposes will have their training fees fully covered by the company if the training is no longer than six weeks.
Project Management (PMP) Certification	The company covers fees for certification exams and the annual fee for PMI Association for the first year (NT$12,000)
Continuing Education	Those who are selected to enroll in domestic or overseas educational institutions required by their positions can have all academic and miscellaneous expenses as well as dissertation aids covered by the company for the duration of the studies. By the end of 2023, 60 employees who were enrolled in their studies upon Company recommendation have graduated and obtained EMBA degrees.
Externships	Employees who need to undertake studies due to the nature of their work or participate in training or internship programs due to their work or on-the-job training can get financial aid in addition to the salary provided by the company if the duration exceeds 6 weeks.

Statistics on Leave without pay for parenting

		2021			2022			2023		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
A	Number of employees qualified to apply for leave without pay for parenting in the given year *	93	35	128	94	37	131	81	28	109
B	Number of employees applying for leave without pay for parenting in the given year	10	18	28	11	24	35	9	12	21
C	Number of employees anticipated to return to work from leave without pay for parenting in the given year	11	22	33	11	14	25	11	15	26
D	Actual number of employees who returned to work from leave without pay for parenting in the given year	9	19	28	9	14	23	11	15	26
E	The number of employees who continued to work for one year after being reinstated after being suspended for childcare in the given year	11	12	23	9	14	23	8	13	21
Unpaid paternity leave application rate (%) (B/A)		10.75	51.43	21.88	11.7	64.86	26.72	11.11	42.86	19.27
Unpaid paternity leave return rate (%) (D/C)		81.82	86.36	84.85	81.82	100	92	100	100	100
Unpaid paternity leave retention rate (%) (E in the current year/D in the previous year)		73.33	75.00	74.19	100	73.68	82.14	88.89	92.86	91.3

*: The number of eligible applicants for the parental leave in the current year is calculated based on the number of people applying for maternity benefits in the previous three years

Career Development and Training

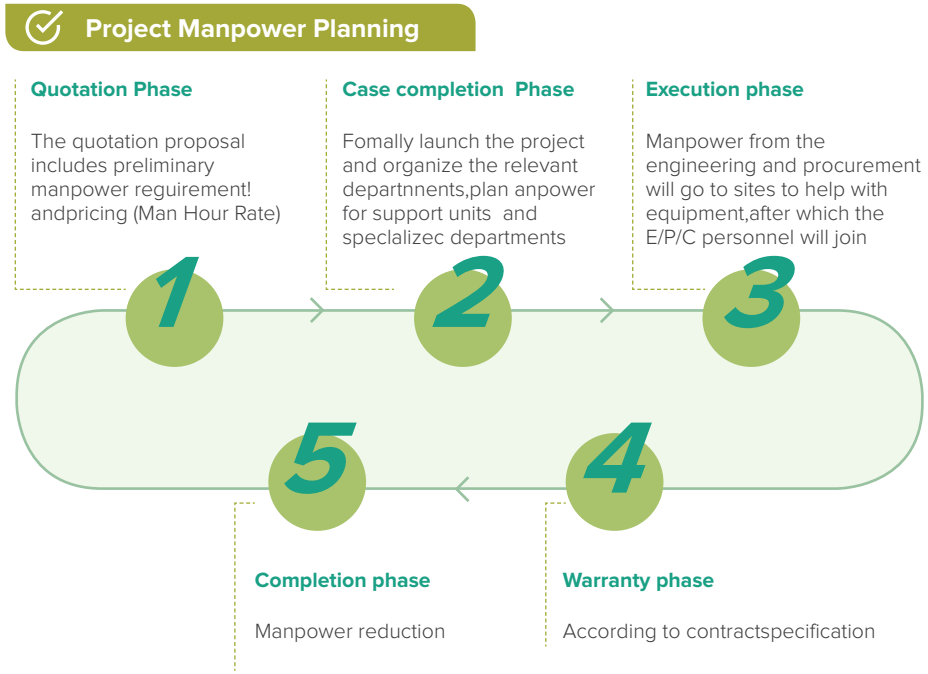
Workforce Analysis and Planning

The number of CTCI's personnel is considerable. In order to foster a culture of learning, organizational adaptability, collaboration, and customer focus, CTCI have implemented methodologies derived from Agile Organizations. Organizational management and position development methods have been devised in accordance with Agile principles to facilitate the alignment of the organizational structure with business strategies and development requirements. Taking the high-tech business of CTCI as an example, the organizational structure of the development plan is as follows:

Managerial Executives	Chairman and President are in charge of the company's operations.
Unit level (BU)	Following CTCI's strategic planning, each unit is organized according to its functions and products, with a supervisor.
Division level（Division）	Each business unit plans the division structure upon different functions, regions and products according to specific needs, and creates the required positions and builds manpower according to its organizational operation. Each division then has a supervisor position.
Department level（Department）	Each division is divided into departments according to the needs of the management and the necessity of professional and functional differentiations. Each department has a position of supervisor. Besides the head of the engineering department, a department may have project managers with the same rank as general managers due to project operational needs.
Section level（Section）	Each department is organized into sections according to the organizational and operational needs of the units. Each section has a position of supervisor. Besides the head of the engineering sections, a section unit may have senior engineers, chief engineers, and assistant engineers of the same ranks due to project operational needs. However, for non-engineering sections, each section will have one section manager or deputy section manager.
Staff level（Staff）	Basic administrative level.

To ensure the effectiveness of the organizational structure, annual reviews and manpower planning are conducted every year, taking into account factors including external supply and internal development, resignation and retirement, transfers and post-positioned manpower. Discuss and propose improvements and various measures and plans in response to the discrepancy, and take the overall consideration of the measures to attract external talents and internal talents, and adjust the annual manpower plan on a quarterly basis.

For project implementation, in addition to the logistic support department, more than 80% of CTCI employees are involved in the quotation, design and implementation at different stages; therefore, from the very beginning, the business quotation using different Project Codes to calculate the cost.



To take the engineering division of CTCI as an example, it has 9 sections based on the organization and operation management, and the annual manpower planning needs 265 employees. However, there are only 201 employees currently, showing insufficient manpower composition clearly. A detailed analysis shows that the proportion of employees with experience of less than one year and those with 3-5 years are too low. CTCI has crossreferenced this analysis with the following databases:

- Reference based on average data from last year
- External competitive analysis; dynamic changes in environmental factors, such as recruitment by other industries (e.g. wind power sector) or companies (e.g. technology industry).
- By analyzing the influence of age, experience, retirement eligibility and Employee Well Being of overall employees.
- By analyzing the Employee Engagement Survey.
- Others (e.g. the impact of COVID-19 outbreak).

Based on the data comparison and analysis above, we propose the following reasons for resignation and measures to improve:

Reasons for resignation		Improvement measures
Object	Reasons	
New employees with less than 1 yearence	• Some skill sets are scarce in the labor market. • CTCI is the leader in the domestic EPC, and has a unique management model and operation mechanism. Newcomers may thus find it hard to adapt.	• Re-employment of staff that served earlier/retired staff: The re-employment of earlier/retired staff means that they are not only familiar with the job, but also saves recruitment and training costs, and leads to higher loyalty and stability. The government is also currently rewarding companies for hiring middle-aged and elderly employees. • Scholarship: In addition to the summer internship program, CTCI also provides scholarships for specific needs, such as the Fire Science Department, which is the only vocational school in Taiwan (WuFeng University Department of Fire Science), as well as grants to encourage foreign language studies, and accommodation allowances for those not living in Taipei City/New Taipei City. • Internships extension: In addition to summer internships, semester-based internships are also available. Students can work as full-time interns during their final year when they have fewer credits to complete, thus allowing for a smooth transition after graduation. • Development of the 104-database (job bank in Taiwan).): Aims to invite potential job seekers and contact potential employees who are interested in changing jobs but are not yet actively looking at 104. • By applying new technology in daily work, CTCI builds industry-university collaboration on special topics with famous schools, departments and professors domestically and internationally. • Holding engineering lectures: Holding international engineering lectures at relevant departments of universities to broaden international vision. • Referral bonus: In addition to general recruitment, CTCI has also set up a referral bonus program and interacts with headhunters and foreign professional service providers. • Establish multiple recruitment channels: cooperate with human resources consultants or foreign professional personnel consulting companies.
Employees with 3-5 years of experience	• Concerned about industry and the company's future prospects. • Economic pressure on employees from Central and Southern Taiwan. • Industry poaching. • Monotonous work and heavy responsibility.	• Adjustments to job description: 〉Increase the range of work content and gradually eliminate more complicated tasks, so that new employees can focus on the necessary design management and coordination. 〉Make good use of the demographic dividend and design of Southeast Asian countries, and enhance the management and communication skills of our engineers. 〉Strengthen talent retention measures, such as the implementation of restricted stock plans. 〉Outsource work to group affiliates, subcontractors or third parties. • Transformation of business development: Continuously expanding high-tech, green engineering and other business areas and providing Total Solution of services are the directions that CTCI is actively planning and participating. • Introduction of new technology applications: Continue to introduce new technology applications to help colleagues improve work efficiency. • Familyconsiderations:Short-term housing assistance, employees with babies can apply for flexible work from home. • Respond to the needs of salary factor: adjust the salary structure or professional bonuses for important positions or important professional skills; and propose talent retention measures and provide substantial subsidies. • Strengthen communication channels: Strengthen internal communication channels. For example: regularly publish talk articles by group executives, hold town hall meetings for supervisors, etc.
All employees	• Supervisor's management style • and work allocation: no clarity • of work content and an unclear • organizational division of labor within projects	

Performance Evaluation

As most of CTCI's work is project execution, project type organization is the norm. In order to fully evaluate the annual performance and potential of each employee, CTCI has developed an unique evaluation system, which is divided into target management and performance management. Good performance is encouraged with increases in salary and bonuses to encourage employees. With the exception of consultants, external technicians, work-study students, summer interns, employees who are on unpaid leave for more than nine months, and employees who joined the Company after performance appraisal starts, all other employees undergo annual performance appraisal system.

Performance appraisal system

Object All employees

Mode of operation

Management by objectives

The objectives in the performance management system are divided into departmental goals and project goals. In the beginning of the year, employees set personal performance goals, which are sourced from company-level
strategic focus, company goals undertaken by departments, work focus undertaken by individuals from upper-level managments, and KPIs of individual job responsibilities. During performance appraisal, the department supervisors will assess the goal of the department and the project manager will assessstatus of project achievement. As a result, both employee performance and operational performance of business units can be achieved.

Multidimensional performance appraisal (e.g. 360 degree feedback)

There are two dimensions of performance management system, Score A and Score B.
Score A: potential score, According to the actual behaviors of the employees, the supervisor will evaluate whether the employees have the key ability of the rank or the potential to take up a higher position and demonstrate the cultural behavior. The score will be taken into account for pay raise.
Score B: Annual Performance Score, The score given by the supervisor is based on comprehensive considerations such as the achievement of personal objective, execution ability, work attitude, contribution, communication and coordination. The score will be taken into account for granting bonuses.

Score A
potential score

Score B
Annual Performance Score

Team-based performance appraisal

Employees participating in a single project and working regular shift for over 600 working hours should be included in project evaluation, apart from the evaluation from the department head. The evaluation of the department head and the project manager will be converted into the annual performance score of the colleague according to the proportion of hours.
Regardless of the score of A or B, in addition to the normal distribution principle, the head of the business unit (BU) should confirm and finalize the score.
There are departmental goals and project goals in Performance Management Regulations.
Departmental goals are sourced from company strategies and should be accomplished by members of the department.
Project goals should be set and achieved by project team members.
The head of business unit and other supervisors would review the achievement rate of departmental goals and project goals regularly.

Agile conversations

In the beginning of the year, employees should discuss annual goals with their supervisors, recording the achievement status. Supervisors will provide feedback and guidance.
In the middle of the year (July), Development and Performance Management System (DPMS) will reopen for employee to revise annual goals.
During appraisal period, employees and supervisors will the performance of the year, along with feedback and improvement advice, while discussing the goals for next stage.

Execution content

- Formulate KPI at the beginning of the year
- Mid-term interview review
- Final assessment Year-end performance interview
- Confirm the bottom, arrange a three-month Employee Performance
- Improvement Plan (PIP), and conduct monthly interviews for up to six months.
- In recent years, the last-place elimination has been implemented in place, and the last-place elimination has dropped from 5% to 3%.

Performance Improvement Plan, PIP

Object The worst performing employees

Mode of operation

After the completion of annual performance appraisal, the heads of the corresponding business units will decide whether the employees at the bottom should be included in the Performance Improvement Plan. For employees who need performance improvement, supervisors and employees list improvement parameters specifically. They shall comply with the "SMART" principle, review and give feedback monthly.

Execution content

Supervisors and PIP participants should jointly discuss and draft an effective action plan, schedule of completion, and benchmarks for evaluation. During the counseling period, supervisors oversee and provide necessary assistance to employees to improve their work efficiency. Before the deadline for improvement, the supervisors would conduct interview with their employees face-to-face and give appropriate feedback. The counseling period will last two years. Employment will be terminated only if their performance saw no improvement. During the annual performance appraisal, the performance of the colleagues after counseling will be reviewed as well to see if PIP is effective. The Human Resource Department will track the subsequent counseling status of each department every quarter. The main purpose of PIP is to guide employees in clarifying and focusing on their work.The results of PIP counseling over the past four years are as follows:

Counseling year	appraisal year	Employees in PIP	Outcome			
			Dismissal	Resign-ation	Completed counseling	Completed counseling
2020	2019	13	4	2	0	7
2021	2020	9	1	1	0	7
2022	2021	54	0	15	39	0
2023	2022	6	1	2	3	0

In order to enable colleagues to more accurately understand their personal input and performance at work, the performance system allows colleagues to query supervisor comments and initiates annual performance interviews. It is hoped that the opportunity for two-way communication will serve as a reference for work goals and personal growth and development. Starting from 2020, we will implement KPIs for all employees and hold KPI optimization briefings to help guide each department to set more specific and pragmatic goals; supervisors are also expected to have a one-hour meeting with each colleague every month to proactively care for and treat colleagues. Communicating about work status can not only provide performance feedback, but also provide a more specific and enriched understanding of future work responsibilities.

As for career planning, in order to strengthen talent nurturing and use human resources effectively, an internal rotation platform is established to enhance the internal development opportunities of talents, and appropriate mechanisms are set up for position rotation according to colleagues' personal career planning. There are two types of job rotation: the first type is colleague/departmentinitiated rotation, and the second type is a talent database for the purpose of talent development, i.e. to accumulate experience in preparation for key positions in the

future. In career and promotion system, CTCI believes that ability and potential are equally important, also hopes to enhance the vision and depth of colleagues through position rotation.

The first type is aimed at employees who have worked in a position for two years or longer. We offer appropriate mechanisms to provide job rotation based on their individual career development plans. Employee job rotation provides opportunities for talent development and effective employee utilization, while enhancing their work experience, innovation and

breakthrough, and internal development and mobility. Whenever there is a job vacancy in the Company, our recruitment unit would announce it internally first. This opportunity provides a path for advancement for our current employees and often boosts their morale. The second type is aimed at potential talents. By proactively planning a succession ladder of key positions for the future, one can become an independent department head within 10 years, with career planning together with on-the-job-training to accelerate the development plan, mechanism and operation, etc., while developing an operation manual for the Group. In recent years, with establishment of the high-tech facilities business unit, we encourage them to accept challenges and adapt to a different nature (faster pace, flexibility, etc.), by providing special allowances for the employees who have transferred to this unit. In addition to providing financial rewards, we also formed relevant decision-making committees to enhance overall relevant industry knowledge and necessary trainings.

Ratio of job vacancies filled internally

76.47 % 2023

66.67 % 2022

65.52 % 2021

60.00 % 2020

Overview of internal staff replacement

		2021	2022	2023
Type	Total percentage of job openings filled by internal candidates	65.52%	66.67%	76.47%
Gender	Male	84.21%	75.00%	92.31%
	Female	15.79%	25.00%	7.69%
Age	Under age 30	10.53%	31.25%	-
	Age 30-50	84.21%	62.5%	100.00%
	Over age 50	5.26%	6.25%	-
Position	Junior Supervisor	42.11%	18.75%	53.85%
	Mid-level Manager	-	6.25%	7.69%
	Engineer	57.89%	75%	38.46%

Competence Development

CTCI actively invests resources in talent cultivation, hoping to attract like-minded professionals, and makes an overall plan on comprehensive education and training, trains new talents, and provides professional training for different categories. In addition to assisting each employee's career development plans, we continue to invest resources in management ability development, the mentor system, and online learning courses, so that the employees continue to learn and grow.

We have established an internal heritage and expert system, and hope that through experience-sharing of supervisors and colleagues, knowledge, skills and experience can be passed on to all CTCI bases, creating a competitive advantage based on "learning organizations". Competency evaluation is conducted every six months for each position. In 2023, professional competency achievement rate of employees was 90.6%; in the future, evaluation will serve as a mandatory prerequisite for promotions, rotations, and transfers.

Competency centered

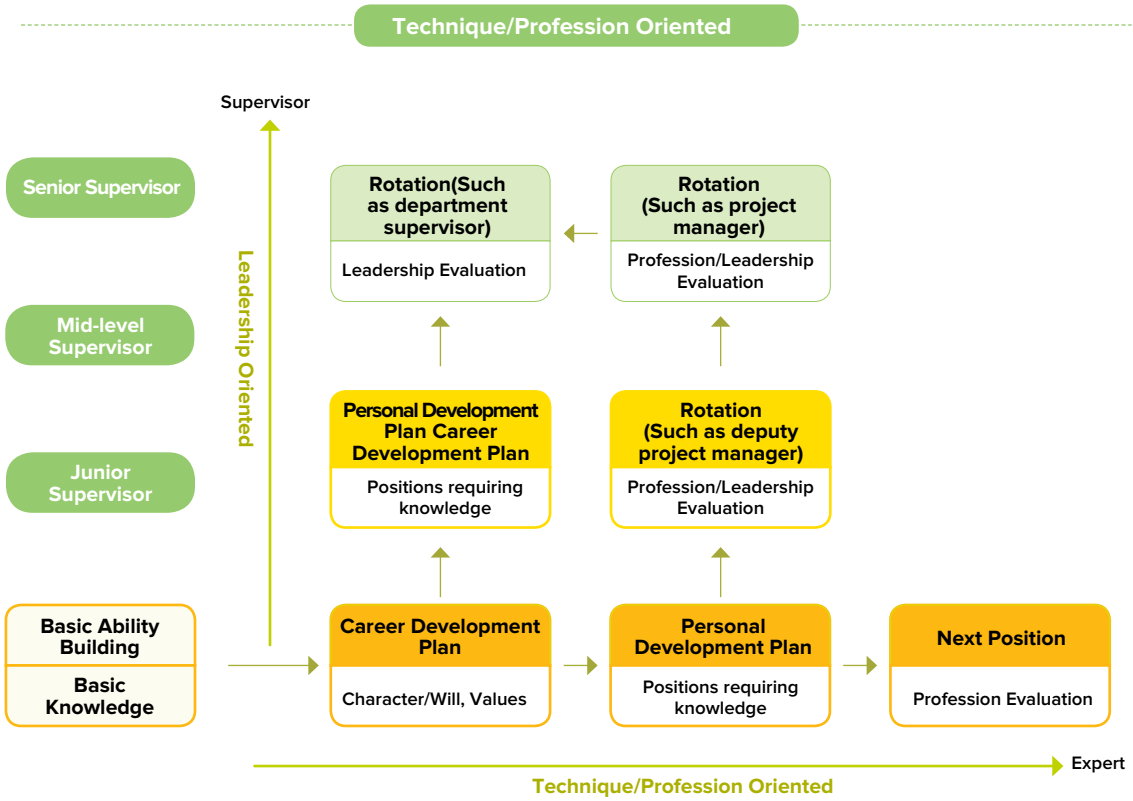
Design competency-centered courses to ensure that short-, mid- and long-term talent development can be developed under the same standards, and are combined with competency assessment to ensure

Position centered

The positions clearly define the R&R, and starting from there, one can see the qualities required and development inputs needed for training; everyone can see the course of their development and career development path.

Talent Cultivation

To build a talent pipeline, CTCI has established individual development plans for key position reserve personnel and inventoried the group's key positions, high-potential elite talents, and young elite talents. An inventory of 15 young elite talents, referred to as Young-Po Plus, was undertaken between 2020 and 2023 in order to obtain a comprehensive understanding of their personality, performance, English proficiency, and intrinsic learning abilities. In his capacity as "Group Mentor," the Group CEO imparted life lessons and imparted valuable experiences, in addition to designing individualized training programs. The objective is to develop international management professionals within the following decade.



2018

In 2018, to improve the relatively weak components of the 360-degree evaluation report (strategy and innovation ability), we held intensive courses with the goal of internalizing management tools with Harvard case study and situational training, and supplemented by reading clubs to strengthen management knowledge and learning.

2019

In 2019, we were even more focused on managing former executives with the help of an unbiased third party and renowned talent development firm (DDI). By comparing the results of their extensive data base of global leadership assessments, we have a clear idea of what is missing if one is to become a wellrounded leader.

2022

In 2022, With the Hogan Assessment System, we will organize an online learning journey on leadership and influence based on the employees' assessment results. We also hold an online book reading sessions to encourage our top employees to read more and think bigger. We recommend a reading list and allocate annual book purchase expenses. Employees can select the books accoding to their personal needs and share their feedbacks. In 2022, a total of 132 employees participated in the book reading session. By the end of 2022, nearly 70% of them uploaded their feedbacks and reading experiences.

2023

In 2023, An online course "Decision Making" was held, with a total of **270** participants.

	2018~2020	2021	2022	2023	People/Subtotal	Amount (NT$)
LII	288	-	-	-	288	345,600
GLI	72	1	-	-	73	657,000
LPEI	339	58	24	20	441	2,646,000
Hogan Insight	-	-	10	11	21	134,400
Hogan GE	-	-	61	125	186	65,100
Total	699	59	95	156	13,759	3,848,100

Potential Talent Development Blueprint

Training effectiveness evaluation

Measures to evaluate training effectiveness	Each course	In order to evaluate the effectiveness of courses and student learning, there are after-class questionnaire assessments and tests, field operations, simulation exercises, learning reports, after-school action plans, and instructor evaluations at the end of each course.
	Every year	Professional competency assessments are conducted to check the status of the professional competence of the colleagues in the position.
	Every year	Training results are examined by setting relevant targets in the annual quality objectives.
Training target	Every year	Target of plan achievement rate: Over 80 points
	Every year	Professional competence completion rate: Over 80 points
	Every six months	Reduce the quality loss rate: Over 80 points

Training Effectiveness

2021		2022		2023	
Total cost of training	Average training fees	Total cost of training	Average training fees	Total cost of training	Average training fees
15,484,326	5,803.72	16,985,741	5,598.46	19,397,445	5,632.23
Total training hours	Average hours	Total training hours	Average hours	Total training hours	Average hours
186,866	70.04	197,803	65.2	251,431	73.01

Occupational classification	2021				2022				2023			
Total training hours	Total training hours		Average hours		Total training hours		Average hours		Total training hours		Average hours	
Gender	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Senior Manager	414.5	20	17.27	6.67	1158	75	48.26	37.50	1,435.00	136.00	47.83	68.00
Mid-level Manager	31,700	3,192.5	64.3	66.51	39,916	4,019	79.2	71.77	33,402.50	3,692.00	64.11	61.53
Junior Supervisor	36,850	9,595	57.31	71.07	41,623	9,123	61.21	63.80	45,833.00	10,051.00	64.55	62.82
Engineers	74,756	15,367.5	102.41	77.22	60,136	17,090	71.34	65.73	100,198.5	28,123.50	98.62	87.34
Specialists	801.5	13,550	15.41	50.00	2,259	21,495	32.26	63.04	2,821.00	23,798.00	36.17	56.93
Technicians	460	159	9.20	7.95	687	222	8.08	8.54	1,614.00	326.00	15.67	13.58
Total	144,982	41,884	72.78	61.96	145,778	52,025.5	66.08	62.83	185,304.00	66,127.99	75.39	67.07

In order to ensure that the effectiveness of training can be reliably measured, we have introduced the Kirkpatrick Four-Level Training Evaluation Model, to which the business operations results are linked to examine the Return on Investment (ROI) after training. The

training effectiveness evaluation at each level is as follows:

- **Reaction Evaluation (Reaction)：** Trainees take post-training questionnaires, so that we can determine their level of satisfaction on session content, training hours, training materials, instructors, etc.
- **Learning Evaluation (Learning)：** The effectiveness of training is evaluated by means of examination, on-site operation, simulation, feedback report, post-training action plan, and evaluation on instructors.
- **Behavior Evaluation (Behavior)：** Every six months, the growth of professional competencies of the peers is examined through the results of the professional competence assessment on each colleague, and the overall effectiveness of the training is reviewed using the low-quality missing rate within the company's annual targets.
- **Result Evaluation (Result)：** The general effectiveness of training is determined by examining the retention of key positions, retention of new employees, and promotion status of employees who have worked in the Company for 3-5 years.
- **Return on Investment (ROI)：** For investment return after training, we convert the results of the previous phase into monetary data -- the key position development costs, reduced costs of new employee turnover, reduced quality rework costs, and so on.

Evaluation of Training Effectiveness

Level	Particulars	2021		2022		2023	
		Results	Total Score	Results	Total Score	Results	Total Score
Level 5. Return on investment ROI	Reduce key position development costs (NT$)	-35,397,837.38	8.32	-8,794,494	7.90	-	8.20
	Reduce the cost of new employees (NT$) (NT$)	-40,185,113		-27,101,588		-25,008,750	
	Reduce quality rework costs (NT$) (NT$)	59,260,000		93,280,000		32,860,000	
	Employee productivity (NT$)/person	11,537,537.11		10,453,064.60		13,330,637.92	
	Human capital return on investment (%) (Total Revenue-(Total Operating Expenses- employee benefits))/ employee benefits	9.09		8.46		10.64	
Level 4. Result	Key position retention rate (%)	78.9		91.0		95	
	External customer satisfaction (score)	81.7		81.60		82.0	
	Total employee turnover rate (%)	9.96		9.75		6.62	
	New employee turnover rate (%)	12.58		11.74		11.44	
	Internal employee promotion rate (%)	19.53		17.90		15.71	
	1-3 years employee promotion rate (%)	42.86		27.46		19.03	
	3-5 years employee promotion rate (%)	34.40		37.57		31.97	
Level 3. Behavior	Achievement rate of professional competence (%)	81.00		89.80		90.60	
	Low design quality rate (%)	85.60		88.80		83.1	
	Low-quality event rate (%)	90.60		85.1		81.8	
Level 2. Learning	Average learning evaluation results of each training course (score)	94.49		94.53		96.46	
	Annual training plan completion rate (%)	94.00		94.30		93.80	
Level 1. Reaction	Average completion rate for each training course (%)	97.35		97.37		96.04	
	Average employee satisfaction rate of each training course (%)	93.88		93.87		94.16	

The total score is the annual total score calculated after each evaluation level and project set their own target value. The target value of total score is 8.0; if the target value is not reached, the status of each item will be reviewed and used as a reference for adjustment and improvement in the next year.

Talent Development Plan

CTCI introduced the following employee development plans, based on the needs for achieving the operational goals and employee career development, to enhance the work skills of our employees, encourage our employees to grow, empower the Company and our employees to achieve annual goals and enable them to offer better services to our clients.

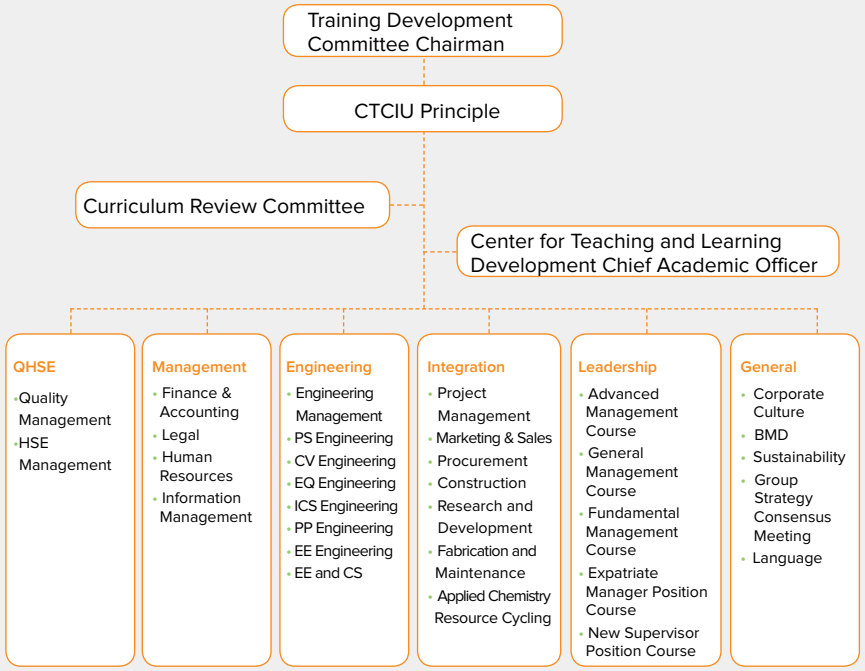
2023 Talent Development Project	Content and Objects	Benefits and Impact on CTCI	Kirkpatrick Training Evaluation Level
Elite Talent Rapid Growth Plan Number of people: **300** people Accounting for **8.71%** of employees	Target: Elite talents at key positions Content: - 360-degree leadership potential evaluation -International Consultant Competence Assessmen -Professional consultant one-on one explanation and feedback - Discuss development plans with Coach/Mentor - Set up a learning journey course and regularly review its effectiveness - Arrange a senior executive as a mentor to assist in enhancing one's perspective and accelerate development - Action Learning: Learn from doing and apply skills learned to work	Advantages of training: - There were 650 participants with a total of 730 training hours of 3 classes. Benefits to business: - Nurture talents with potential in a planned manner systematically and quickly through individual development plans, and reserve talents that satisfy the longterm needs of the organization. - Key position retention rate: 95%	Comparison of Kirkpatrick Training Evaluation Level Level 4 - Result assessment: As result of our goal of developing a Managing Director for our affiliated companies (including overseas) within 10 years of appointment, in 2021, five were sent overseas as overseas general managers to experience related management work experience, and 13 were promoted as department heads.. Level 3 - Behavior assessment: Through collective learning, peers can help each other and learn and grow, especially across business groups and BUs, so that they can appreciate the views of the owner, suppliers, the company, employees, etc., and help them steer clear of avoidable mistakes. Level 2 - Learning assessment: The average course pass rate is 100% Level 1 - Reaction assessment: Average satisfaction grade after the course: 4.88
Agile Project Management Team Development Number of people: **166** people Accounting for **4.82%** of employees	Background: In response to the newly established Advanced Technology Facilities Business Operations unit (ATFBO), which is different from the previous project execution method, and in response to customer needs, the following content was developed: - Project managers and members selection - Professional knowledge and skill training - Cross-cultural communication and management - Place senior executives as lead sponsors to provide necessary support and resources immediately - Action Learning: Learn from doing and apply skills learned to work - Share Lessons Learned - In-house technical expert department was established (System Engineering Department) - Lectures by external experts, sharing new knowledge	For quick entry, we hire external expert consultants for guidance, and define transformation and development strategies. Even though CTCI lacks experience in designing and building high-tech plants in the past, we were able to quickly transform ourselves in a short period of time by acquiring U.S. plant designs from a Taiwan-based semiconductor company and set up a domestic office to pursue great business opportunities in the high-tech supply chain. At the same time, we actively seek programmatic ways to develop talents with potential for cooperation, flexibility, will to learn and positive attitude. Since this project is a "cross-country teamwork" project led by the Taiwanese team and executed by CTCI, crosscultural communication and teamwork is one of our constant endeavors. Due to the characteristics of the high-tech facilities department, the System Manager department is specially established to horizontally coordinate and provide the owner with the best solution, quickly respond to the owner's needs and create a win-win situation. High-tech facilities are changing rapidly, therefore, inviting experts and scholars in relevant fields to communicate regularly is the key of all employee learning activities.	Level 4 - Result assessment: Obtain the customer's first design project within 3 months after its establishment in September 2020, and obtain the customer's second development project at the end of the year, with a contract amount of nearly NTD 300 million, increasing the company's revenue; From 2021 to 2023, more than 50 projects will be awarded, with the cumulative contract amount of nearly NTD 30 billion. Level 3 - Behavior assessment: Change the workflow and work methods up to 100% to respond to the needs and changing responses of the owner. We have changed the existing sign-off process to significantly save time, and are committed to reducing communication costs and responding toregular and occasional requests and reports from the owner to keep up with the pace of the industry. Level 2 - Learning assessment: Within six months, members of the project team were organized, became familiar with the characteristics of high-tech business, and actively enhanced their skills (e.g. refrigeration and air conditioning technology) or sought the assistance of outside experts (e.g. from Taiwan's National Center for Earthquake Engineering), and the completion rate for all related personnel was 100%. Level 1 - Reaction assessment: Average satisfaction rating after classes: 4.72
Expert program refinement Number of people: **1167**people Accounting for **38.88%** of employees	Formulation of the "Colonel - Regimental Commander" system, i.e. Dual Ladder system, for the six disciplines of the Engineering Division. As the center of the talent pool, CTCI is also tasked with the goal of guiding and enhancing the design capabilities of its overseas subsidiaries and implementing localization of talent.	Due to the impact of the COVID-19 pandemic, CTCI has launched the CTCI University online learning platform in a timely manner, while translating it into English for uninterrupted learning and continuous improvement of CTCI's professional functions for passing on its knowledge. By implementing an expert program, CTCI can effectively enhance the design professionalism of our employees, which is also an important factor in retaining talents. Recruiting retired employees not only allows them to continue to contribute professinoally, but also allows the Company to bridge the gap between the professional levels.	Level 4 - Result assessment:Time efficiency improvement: about 30% reduction in man-hour Level 3 - Behavior assessment: Remove the time previously needed to wait for the team leader by having experts to provide guidance and improvement at any time. Three of the six disciplines saw an increase in the rate of professional competencies. Level 2 - Learning assessment: Average after-school learning assessment score: 94.87 Level 1 - Reaction assessment: Average satisfaction rating after classes: 4.54

CTCI University

CTCI University, an online learning platform, was officially established in 2020, integrating training resources into a single online platform to pass on our experience and promote sustainable growth. This online learning system not only can conduct courses for our employees in terms of their current job position, but also allows them to select courses for their future position or new positon in another department according to their personal development roadmap. With the approval of the supervisor, the employee can selecy cross disciplinary courses of their interests to build comprehensive professional skills,

CTCI University has six colleges: College of QHSE, College of Engineering, College of Integration, College of Management, College of Leadership, and College of General Education. Each college has its own specialized departments and programs to meet the needs of different specialized functions. The deans and department heads of the faculties are senior executives of CTCI Group, and the lecturers of the specialized courses are all supervisors and employees. With flexibility offered by online learning, information is no longer restricted by location, where CTCI University provides comprehensive courses for almost 600 different positions accordingly, with both Chinese and English versions provided. By the end of February 2023, more than 1500 online courses have been completed.

CTCI University Organization



As an exclusive online learning platform for all of our employees, CTCI University aims to create a borderless learning experience for any position, anytime and anywhere. Our employees can learn anytime and anywhere on the CTCI University EIP website or using mobile application. Each employee can take required cources in an department that meet their occupational needs to achieve their career development goals. CTCI University also provides a rapid development plan for outstanding colleagues and initiates a "pre-training" system; namely, upon completing relevant accelerated improvement courses and receiving relevant certificates, employees can move on to their next job.

In addition to cultivating talents within the Group, CTCI also established an external e-learning platform CTCI Learning in 2021 to provide 253 free engineering courses for industry professionals, government officials, academic scholars, and the general public. By the end of 2023, over 10,000 people have signed up for the courses. CTCI hopes to pass on our 40 years of engineering professional knowledge and extensive engineering experience through this platform as committed to corporate social responsibility, cultivating sustainable capability of engineering professionals in Taiwan.

Labor Rights and Human Rights

Human Rights Management

CTCI's Human Rights Policy follows the UN Global Compact, the Universal Declaration of Human Rights, the UN Framework and Guiding Principles on Business and Human Rights, and the Ruggie Framework. **CTCI Codes of Ethical Conduct** clearly prohibits any form of discrimination or exclusion based on gender, race, religious belief, political inclination, sexual orientation, seniority, nationality and age, as well as conducts of sexual harassment, violence and threats at the workplace. To meet our commitment on building a workplace free from harassment and discrimination and to prevent sexual harassment at the workplace, CTCI has not only stipulated relevant regulations and procedures in our Employee Handbook, but also intensified advocacy for new employees. In addition, an employee feedback mailbox is provided (HR@ctci.com.tw) to facilitate communication through email, and a dedicated unit was set up to respond and handle relevant issues. To effectively control whistle blow reports received and maintain a smooth and impartial investigation process, an inter-departmental team of members approved by the Reward and Penalty Review Board will be in charge of investigating the content of the complaints and submitting the investigation report.

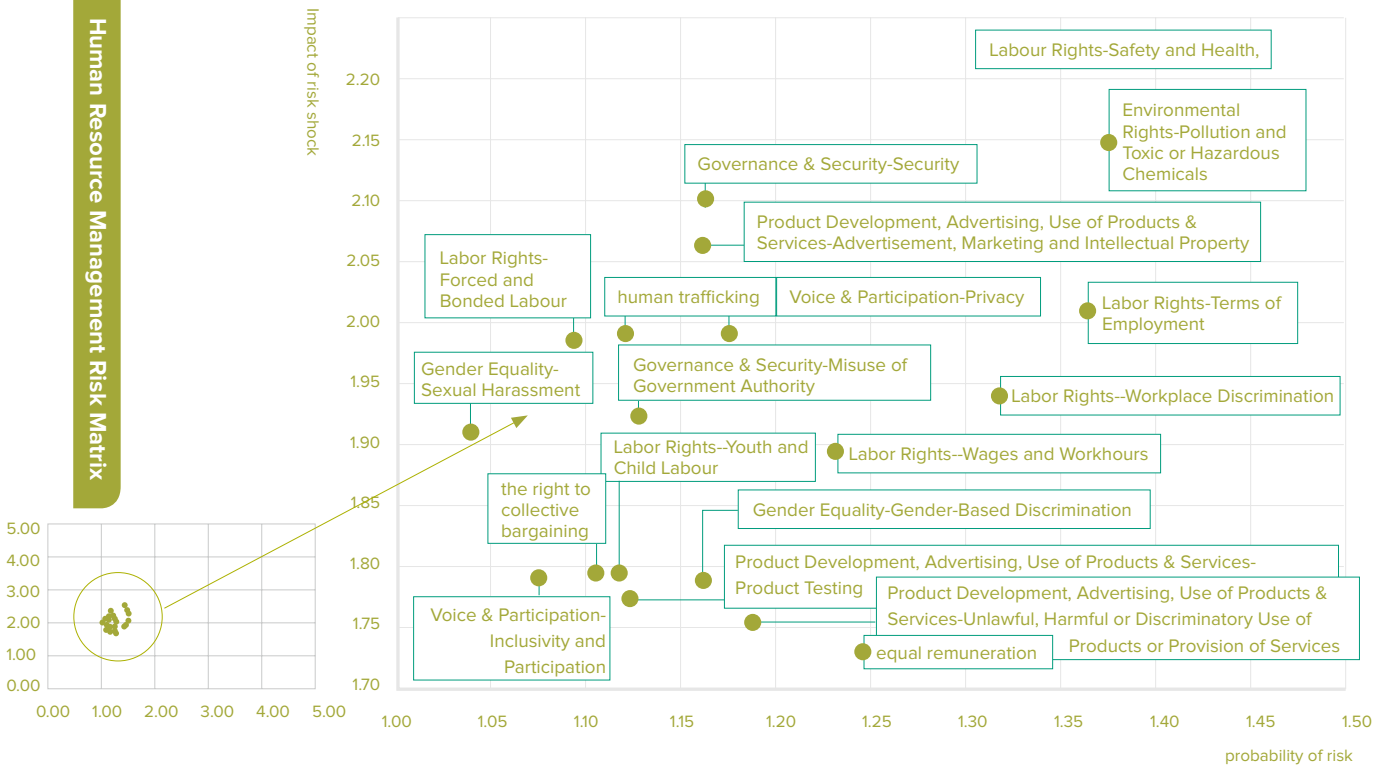
Primary human rights issues concerned with CTCI cover the operation process (employees and contractors) and the procurement stage (suppliers). We evaluate human rights issues and stakeholders that pose as risks every year through management processes such as human rights issue identification, affected stakeholders, due diligence and complaint channels, and then formulate risk mitigation measures and compensation systems. In 2023, human rights issues with potential risks are working hours, safety, and health. Compared with 2021, the risk value increased from 22.48% to 25.46%, mainly due to the impact of overtime and health check tracking issues. CTCI Health Center has established a systematic health management model by conducting surveys on overwork scale and workload/pattern, and conducting statistical analysis on health examination results. We hope to achieve comprehensive health management while preventing occupational diseases and actively promoting employee health.

For human rights management of suppliers and contractors, please refer to the "Sustainable Supply Chain Management" and "Safe and Healthy Work Environment" chapters respectively. We will continue to strengthen the promotion and education for CTCI's partners, and impose relevant penalties if needed.

CTCI Human Rights Due Diligence

Policy	Subject	Human rights issues	Due diligence method	Grievance channel
Codes of Ethical Conduct	All employees	Safety	HSE Risk Assessment	Suggestion Mailbox HR@ctci.com.tw External Reporting Platform https://secure.conductwatch.com/ctci/
	All employees	Health	Health check-up	
	All employees	Forced labor/Abnormal load	Work hour management、work load / type survey	
	All employees	Child labor	Employment review	
	All employees	Workplace wrongful harms, discrimination, Sexual harassment	Identification and evaluation of wrongful harms	
	Female employees after pregnancy and childbirth	Maternity protection	Workplace hazard identification, personal health risk assessment	
	All employees	Equal remuneration	Corporate Human Resources Committee Remuneration Committee	
	All employees	Information security and privacy	Reward and Penalty Review Board	
	All employees	Labor-Management dispute	Survey of employee opinions	
	All employees	Freedom of association		
	All employees	The right to collective bargaining		
CTCI Vendor Code of Conduct	Employees of Supplier & Contractor	Health	Supplier sustainability risk questionnaire	
	Employees of Supplier & Contractor	Safety		
	Employees of Supplier & Contractor	Freedom of association		
	Employees of Supplier & Contractor	The right to collective bargaining		
	Employees of Supplier & Contractor	Child labor		
	Employees of Supplier & Contractor	Equal remuneration		
	Employees of Supplier & Contractor	Human trafficking		
	Employees of Supplier & Contractor	Forced labor/abnormal load		
Privacy Policy	Customers	Information security and privacy	Information security	
CTCI HSE Policy	Community	Environmental rights and noise	Construction site environmental monitoring	

Human Resource Management Risk Matrix



Employees (Including office and site employees and foreign workers)					Suppliers		
Risk Category	Forced labor / Working hours	Health	Safety/ Environment	discrimination	Forced labor	Health	Safety/ environment
Mitigation measures	• Work hour management • Health assessment of extended overtime hours	• Health checkup to identify high-riskgroups • Free on-site physical examination and physical examination for migrant workers • Drive workplace health promotion • Health education by nursing teachers • Education advocacy for migrant workers	• Convene regular HSE meetings • Occupational safety culture promotion • HSE assessmen • Ergonomic work site environmental assessment	• Identification and evaluation of wrongful harms • Statement announcement and Publicity of Workplace Violence	• Risk survey: Conduct annual human rights risk survey • On-site audit: Complete on-site audits of three suppliers • Corrective measures: Request the completion of improvements within deadlines		
Remediation measures	• Provide Compensation for overtime • Evaluation of return to work and fitness for work	• Professional psychologist/ Consultation • Employee Assistance Program(EAPs) Work fitness arrangement	• Occupational hazard application • HSE competition	• Professional psychologist \ consultation • Employee Assistance Program(EAPs) • Work fitness arrangement	• Suppliers are required to provide "psychological counseling", "compensation" or "system modification" and other measures for employees who have suffered human rights violations.		

CTCI Human Rights Assessment

Human rights issues	Subject	Methods of risk assessment	2021 Risk value	2022 Risk value	2023 Risk value
Sexual harassment	All employees	Number of cases			
Working hours	All employees	Number of individuals who work in excess of statutory hours			25.46%
Safety	All employees	Number of injured workers			
Privacy	All employees	Number of cases			
Labor Management dispute	All employees	Number of cases		22.48%	
Health	All employees	Number of high-risk individuals who require further tracking after annual health checkup			
Workplace violence	All employees	Number of cases	20.09%		
Maternity protection	All Female employees	Number of high-risk individuals who require further tracking in terms of maternal protection in a given year			
Overwork	All employees	Number of cases			

Human rights training for new employees

Gender	2021	2022	2023
Male	160	269	290
Female	70.5	131.5	138.5
Total	230.5	400.5	428.5
New employees trained as a percentage of all employees	17.28%	26.40%	24.88%

Notes: Human rights training takes place during pre-service training for new employees, In 2023, the number of new employees will increase, so the total training hours will increase compared with the previous two years.

Sexual Harassment

For sexual harassment case reporting, the Human Resources Deptartment has set up a hotline and a designated e-mail to handle sexual harassment complaints. A "Sexual Harassment Complaints Handling Committee" was organized to handle sexual harassment incidents or suspected cases. The Sexual Harassment Complaints Handling Committee consists of seven members, in which the head of the

Human Resource Division serves as the chairperson of the committee, and the other members would be appointed by the executive vice-presidents of GSS and various supervisors. Number of female committee members is not permitted to be fewer than half of the total number of members. Once a complaint is received, the committee would initiate the investigation procedure and carry out necessary actions in a confidential and discreet manner. Within 3 months after a complaint is received, if substantiated, an investigation report with recommendations for punishment is submitted to the Chairman. There was one case of sexual harassment complaint in 2023. After investigation by the Company's Sexual Harassment Complaint Management Committee, the Company issued a disciplinary action and issued a notice to our colleagues that the Company would never tolerate or tolerate sexual harassment by any supervisor or employee; Severe disciplinary actions will be taken if the violations of the Sexual Harassment Prevention Act and the Gender Equality in Employment Act are substantiated after investigation.

Complaints	2021	2022	2023
Number of sexual harassment cases	0	0	1
Number of discrimination cases	0	0	0
Total	0	0	1

Employee Communication

CTCI values the opportunities to carry out bilateral communication with our employees, and provides open and transparent channels for communication, creating a workplace that encourages active employee participation with unimpeded communications between employees and the company. Our employees can report various issues encountered and have the issues resolved to create a better workplace through various channels, including labor relation conferences, internal service satisfaction surveys, new employee lunch seminars, seminars with senior executives and engagement surveys.

Employee communication channels

Labor-Relations Conference

- Convene quarterly labor-relations conferences
- Major operational decisions, such as business development of the Company, employee health, safety, benefits, remuneration and rewards/punishment are fully disclosed in the conference.

Employee opinion platform

- Employee mailbox
- Proposals for improvement
- Facility management
- Grievances on unlawful infringement
- Whistle-blowing

Survey for internal service satisfaction

- A service satisfaction survey is conducted each year for departments of an internal service nature.
- The satisfaction rate has exceeded 80% in the past three years

Lunch seminar with new employees

- The Hear of Human Resources Department will have lunch meetings with new employees, engaging in face-to-face communication to understand their opinions and ideas on the Company and their work direction.
- As of 2011, more than 40 lunch meetings have been held, with 1,671 colleagues participating.

Senior executive employee seminar

- The conferences provide opportunities for employees and senior executives to communicate face-to- face and facilitate bilateral communication.
- Since 2009 to 2023, more than 30 conferences have been held with a total of 1,547 employees participating

Employee Engagement Survey

- Held once every two years
- Survey areas: corporate branding, executive management, performance and promotion, career planning, learning and development, rewards and benefits, job satisfaction, teamwork, delegation of authority, work-life balance, communication, nnovation, talent retention, labor division and resources, and other topics

Employee Engagement Survey

In order to enhance employee engagement and improve the workplace atmosphere, CTCI conducts a Group global engagement survey every two years. The survey includes topics such as Company Direction & Transformation, Senior Leadership Effectiveness, Immediate Manager Effectiveness, Rewards & Performance, Career & Staffing, Work Tasks, International Assignment Experience, Integrity & Diversity, Collaboration, communication, Employee Experience, Engagement, among others. The engagement survey is conducted on a six-point scale. The options of the six-point scale include strongly agree, agree, slightly agree, slightly disagree, disagree and strongly disagree, the calculation of high identity includes strongly agree + agree; the calculation of low identity includes strongly disagree + disagree.

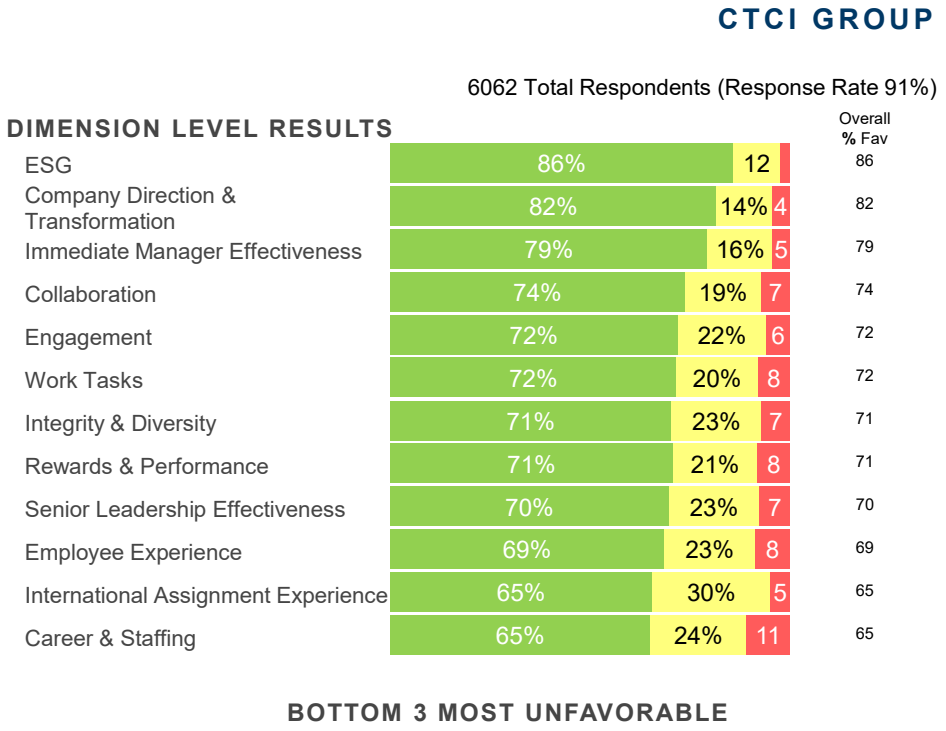
According to the survey results, the proportion of employees who show "high recognition" has increased significantly from 48% in 2016 to 72% in 2019 and slightly to 73% in 2021, In 2023, it will remain at 72%. Indicating that more CTCI colleagues are willing to make positive publicity for CTCI, which means that more than 70% of them are proud to be part of CTCI and strive to make more contributions to the success of CTCI. At the same time, we hope to improve the sense of belonging of employees with "low sense of identity" through further communication, improvement and encouragement. Through the improvement of specific systems, the proportion of "low recognition" employees has decreased from 21% in 2016 to 7% in 2019 and slightly to 6% in 2021, It will remain at 6% in 2023. On the whole, colleagues generally highly agree with the specific actions of " ESG ", " Company Direction & Transformation " and " Immediate Manager Effectiveness ", and think that " Career & Staffing", " International Assignment Experience " and " Employee Experience " are the three projects that need to be improved most in 2023. In terms of Career & Talent Deployment in 2022, we have adjusted the starting salary upon resignation analysis and salary structure review. As for Overseas Assignment Experience, we have adjusted the hiring system. For Effectiveness of Senior Leadership, we have planned leadership and communication trainnings.

In terms of satisfaction, in the dimension of engagement, in addition to understanding the overall satisfaction of employees with the company, we also understand whether employee are motivated to exceed expectations in work and recommend the company to others as a place to work. For Engagement dimension, 72% is made up of "strongly agree" and "agree".

In terms of Purpose, in the dimension of Company Policy & Transformation, we understand whether employee can clearly understand company's overall goals, objectives and business strategy, and values, and can clearly understand how his/her own job contributes to achieving the goals of the company and other issues. For Company Policy & Transformation dimension, 82% is made up of "strongly agree" and "agree".

In terms of happiness, in the dimension of Career & Talent Deployment , we know whether employees can achieve individual career goals, have a good understanding of the possible career opportunities, and opportunity to learn and grow at the company continuously. For Career & Talent Deployment dimension, 65% is made up of "strongly agree" and "agree".

In terms of stress, in the dimension of Work Execution, we understand that employee think that the amount of work expected is reasonable, whether the company continues to improve the processes to enable work efficiency, and have the right tools and resources to do the job properly. For work Execution dimension, 72% is made up of "strongly agree" and "agree".



Employee Engagement Survey

Item	Sub items	2019 %	2019 improvement action plan	2021 %	2021 improvement action plan	2023 %	2023 improvement action plan
All	Proportion of employees who have high level of identification with CTCI*1	72%	• Performance management • Expatriate management system • Employee experience	73%	• Career & Staffing • Senior leadership • Effectiveness Expatriate management system	72%	• Career & Staffing • International Assignment Experience • Employee Experience
Gender	Proportion of female employees who have high level of identification with CTCI	68%		63%		70%	
	Proportion of male employees who have high level of identification with CTCI	73%		74%		73%	
low sense of identity	Proportion of employees who have low level of identification with CTCI**	7%		6%		6%	
Age	20-30-year-olds who have high level of identification with CTCI	66%		70%		68%	
	30-40-year-olds who have high level of identification with CTCI	65%		67%		66%	
	40-50-year-olds who have high level of identification with CTCI	76%		75%		73%	
	50-60-year-olds who have high level of identification with CTCI	81%		80%		81%	
	Above 60-year-olds who have high level of identification with CTCI	81%		84%		79%	
Position	Proportion of engineering track employees who have high level of identification with CTCI	70%		71%		70%	
	Proportion of specialist track employees who have high level of identification with CTCI	68%		70%		74%	
	Proportion of worker track employees who have high level of identification with CTCI	85%		83%		80%	
	Proportion of managers who have high level of identification with CTCI	85%		85%		78%	
Recovery rate		89%		94%		91%	

* The colleagues who have high level of identification with CTCI are willing to promote CTCI positively, and take pride in being a member of CTCI. They are willing to make more contributions to the success of CTCI.
** We need to pay attention to and communicate more with employees who have low level of identification with CTCI. Through improvement and encouragement, we hope to reinforce their sense of belonging.

Stress
high recognition (%)
67 ↗ 72
2021 2023

- My company continues to improve the processes to enable me be more efficient in my work.
- The amount of work expected of me is reasonable.
- I feel I have the right tools and resources to do my job properly.

Happiness
high recognition (%)
61 ↗ 65
2021 2023

- I feel that my career goals can be met at my company.
- I have a good understanding of the possible career opportunities.
- My company supports employees in cross organization career development.
- I have the opportunity to continually learn and grow at my company.

Purpose
high recognition (%)
77 ↗ 82
2021 2023

- I have a good understanding of my company's overall goals and business strategy.
- I clearly understand how my own job contributes to achieving the goals of my company.
- My Company responds effectively to changes in the business environment.

Satisfaction
high recognition (%)
73 ↘ 72
2021 2023

- I am proud to work for my company.
- I am motivated to go beyond what is normally expected to help my company be successful.
- I would recommend my company as a place to work.

Safe and Healthy Working Environment

Safe Working Environment

Policies and Systems

The priority for CTCI's HSE policy is "total safety". It applies to the due diligence process at our operation bases, project sites, products services, distribution logistics, and merger & acquisition processes. We require all employees and workers to abide by HSE policies and procedures when entering the construction site. The policy is also communicated to our suppliers and JV partners, to ensure a safe working environment and protect the health of employees and workers. In response to CTCI's emphasis and commitment to safety and health, and to ensure that the spirit of this policy is consistent with the company's operational direction. This policy is regularly submitted to the board of directors for review, and signed by the chairman, presidents, and heads of each Business Unit.

HSE Policy Statement

Insist on Safety as the First Priority

- We are dedicated to providing all our staff and partners with a safe and secure workplace. Across all our business activities, from corporate operations to project execution, we aspire to achieve a "Zero Incidents"target.

Protect the Environment and Pursue Sustainability

- We provide professional services that minimize the environmental impact, promote energy management, greenhouse gas reduction, pollution prevention, resource recycling, and reuse, and implement waste management and minimization. We also actively reward subcontractors for environmental initiatives and positive HSE actions and work with all relevant stakeholders to pursue environmental protection and establish sustainable development goals.

Comply with Legal and Contractual Requirements

- We stay abreast of relevant legislation and contractual requirements, and monitor our implementation of HSE planning to ensure our working processes are in line with theoretical best practice.

Encourage Training and Engagement

- We encourage all our staff, vendors and subcontractors, to participate in training events on HSE, carbon reduction, and waste management to strengthen awareness and ability of HSE and environmental sustainability. We also provide consultation and communication channels for all our staff to offer their thoughts and feedback.

Promote Personal Health and Wellbeing

- We actively promote self-improvement by creating a health-conscious workplace, while offering our staff all they need to protect and maintain their physical and mental wellbeing. Furthermore, we strive to create a healthier workplace by promoting Lifestyles of Health and Sustainability (LOHAS) via the environment we offer and the purchasing decisions we make.

Implement Effective Risk Management

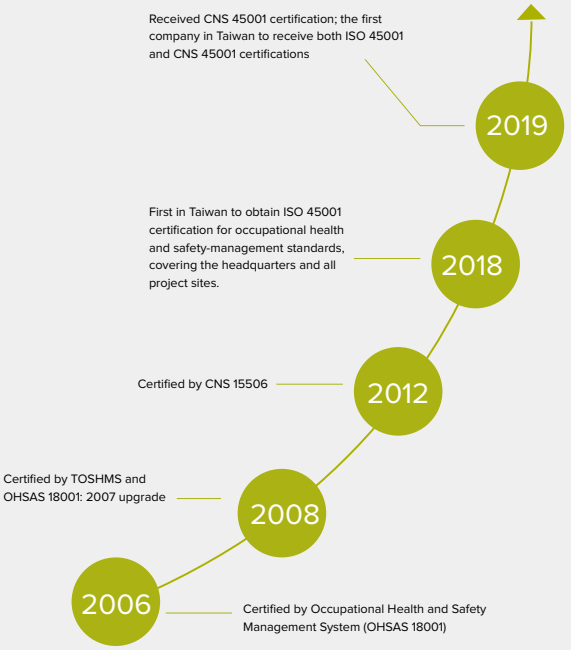
- We identify potential hazards in all our activities and take corrective action to prevent occupational injuries, illnesses, or environmental pollution.

Continuously Improve Our HSE Management System

- We continuously review and optimize every aspect of our activities, and regularly report the HSE promotion and implementation results to the board of directors. The board of directors will oversee our HSE management system to ensure the system is always the best it can possibly be.

Milestones in CTCI's Occupational Safety and Health Management System

- 2006：Certified by Occupational Health and Safety Management System (OHSAS 18001)
- 2008：Certified by TOSHMS and OHSAS 18001: 2007 upgrade
- 2012：Certified by CNS 15506
- 2018：First in Taiwan to obtain ISO 45001 certification for occupational health and safety-management standards, covering the headquarters and all project sites.
- 2019：Received CNS 45001 certification; the first company in Taiwan to receive both ISO 45001 and CNS 45001 certifications



CTCI continues to maintain the effectiveness of ISO 14001 & ISO 45001 management system verification, which covers the first and second headquarters buildings of CTCI Corporation and all project sites, with a coverage rate of 100%. Additionally, in accordance with Taiwan's "Occupational Safety and Health Management Regulations," we have established the Taiwan Occupational Safety and Health Management System (CNS 45001) and obtained TOSHMS certification. CTCI has an Occupational Safety and Health Committee whose composition, meeting frequency, and discussion topics follow the regulations set by Taiwan's "Occupational Safety and Health Management Regulations." To meet the requirements of the ISO 45001 Occupational Health and Safety Management System, we hold an annual HSE management review meeting to assess the effectiveness of our annual HSE implementation and safety performance.

CTCI Occupational Safety and Health Committee Operation

Chairman: EMO President

Number of labor representatives: 6

Meeting frequency: Every 3 months

- Conduct BBS (Behavior-Based Safety) surveys prior to meetings to gauge the employees comprehension of HSE-related information, and to gather feedback on safety and health issues of the Company.

HSE Senior Executive Review Meeting

Chairman: Head of Each Business Units

Frequency of meetings: At least once a year

- Assess the results and management performance of HSE activities throughout the year.
- Set the company's annual HSE goals and performance indicators, propose specific and feasible improvement plans with thorough execution to reduce potential safety, health and environmental risks.

CTCI's safety and health-risk assessment follows the provisions of ISO 45001: 2018. Any risks assessed as moderate or higher are classified as risks and opportunities that need to be addressed. Action plans should be developed to eliminate hazard and minimize risk. When corrective and preventive measures are proposed in the project, it is also necessary to carry out hazard identification and risk assessment again. In the process of reviewing organizational background, CTCI assesses risks and opportunities associated with internal and external factors, and develops corresponding strategies and action plans in all aspects including management system, compliance obligations, risk-management procedures, external communication, office operating environment and resources, health management, operations, and operational controls. CTCI stipulates in the Safety and Health Manual that "When an immediate danger is encountered in the course of conducting business, one may stop working and retreat to a safe location without jeopardizing the safety of other workers." The Manual also has laid down reporting procedure related to occupational hazards and dangers, allowing workers to report events at once to the immediate supervisor, to reduce the related risk impact.

Risk Hierarchy and Management Mechanism

Scope of evaluation

- General: Safety, chemical, physical, biological and ergonomic hazards
- Organizational: Workload, work hours, violence, harassment and bullying

Assessment frequency

- At the inception of a project
- Annual checkup
- Change of construction method, equipment, or operational procedures.
- Improvement in abnormal HSE conditions, and major workplace accidents

Assessment levels and corresponding practices

- High risk: Establish operational control procedures and measurement-monitoring requirements. The effectiveness of control and monitoring is reviewed every six months and is listed as the key inspection and improvement items of the supervisor.
- Relatively high risk: Establish operation control procedures and measurement-monitoring requirements. The effectiveness of control and monitoring is reviewed annually.
- Moderate risk: Conditional acceptance with proper procedures, controls and safety protection; establish control mechanism as needed.
- Low risk: Acceptance of the current situation. No further action is required.

Hazard Identification

- Assessors assess potential hazard factors from workplace, equipment and operations that could lead to fatality, human injury, illness, damage to property or the damage of workplace through site survey, and meeting discussions.

Risk Assessment

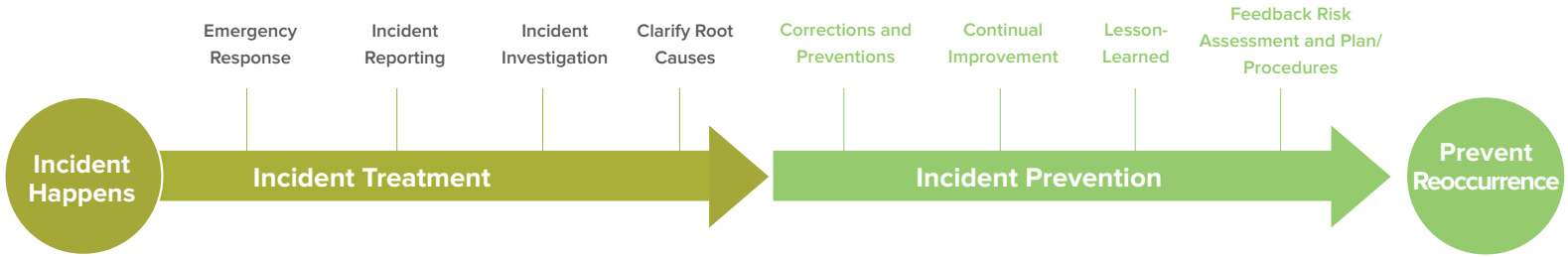
- The assessors, based on their expertise and experience, quantitatively evaluate various hazard factors, including severity, probability of occurrence, effectiveness of risk control, and calculate the risk value to identify hazard risks.

Risk Control

- For moderate-risk factors, improvement and control measures will be proposed and implemented. Subsequently, these measures will undergo further auditing to ensure their effectiveness.

To reduce the harm and risk following accidents, CTCI has established a comprehensive standard procedure for accident investigation. After an accident occurs, severity determines the investigation level, and corresponding investigation teams are formed accordingly. Investigations are completed within set deadlines, and improvement measures are implemented based on the investigation findings. Subsequently, cross-departmental discussions with engineering, procurement, and construction teams are conducted to identify systemic issues. System reviews are then conducted, and preventive measures are taken for intrinsic safety concerns. Feedback is provided, and relevant HSE procedures are revised to prevent similar incidents from occurring again.

Incident Treatment and Prevention Procedure

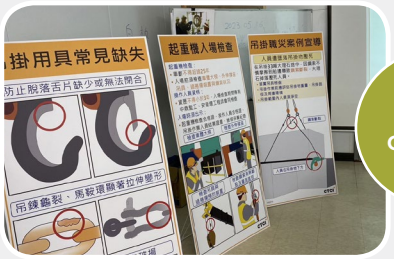


CTCI actively implements HSE management and successfully achieved the goal of zero fatalities in 2023. Additionally, we continuously evaluate and suggest improvements for various occupational incidents, including conducting audits on both weekdays and weekends, enhancing awareness in industrial safety management, and ensuring immediate correction of site defects within three days. We also invite business unit heads to quarterly review meetings to address issues regarding on-site HSE management implementation. As a demonstration of leadership, senior managers are required to make regular site visits to demonstrate proactive involvement.

In addition, we ensure effective HSE communication with contractors through various methods, including work safety analysis meetings, HSE coordination meetings, and daily toolbox meetings. We also impose penalties and reinforce industrial safety training for those who violate unsafe behaviors or life-saving rules. Regarding education and training, we not only continue to implement ongoing education and training initiatives but also require domestic construction sites to incorporate industrial safety classroom training. This training focuses on addressing common on-site defects, such as personal protective equipment (PPE), lifting operations, confined spaces, electrical and electrocution prevention, and working at heights. We create and display training posters to enhance workers' awareness of safety hazards.

Moreover, we have created two online courses: "CTCI Ten-Year Accident Analysis: Lessons and Learned" and "CTCI Manager HSE Management" at CTCI University. These courses have been integrated into the position-specific training programs for managers at all levels, as well as for HSE personnel and construction workers. They are designed to ensure that managers and workers at all levels understand the company's HSE regulations.

Five HSE topics training classroom



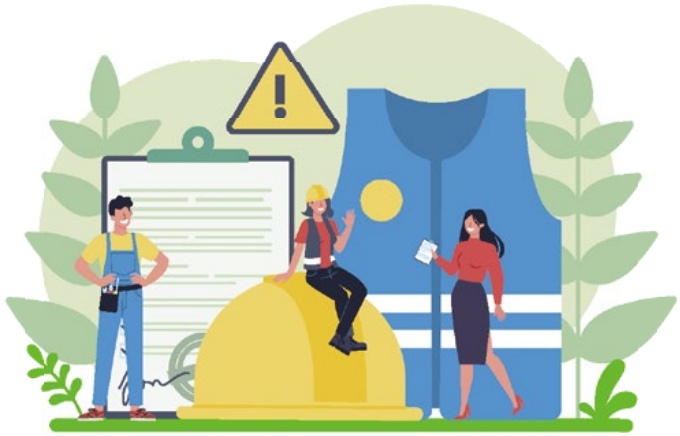
To encourage greater participation in CTCI's HSE management system, each department nominates a non-managerial employee who has at least two years of experience, and is familiar with the department's work, operational procedure, and work environment, to serve as HSE contact to facilitate worker consultation and participation, and to ensure HSE management system is consistent with the demand and expectation of all workers. Since CTCI highly values employee feedback on HSE issues, quarterly office behavior-based safety (BBS) survey with prizes is posted at the First HQ building to assess employees' level of understanding of HSE issues, such as HQ Building emergency evacuation routes, general employee on-the-job training regulations, other HSE promotion information, etc. CTCI will also implement improvement practices based on colleagues' suggestions, such as implementing office energy-saving and carbon reduction measures to enhance the safety of the work environment. The questionnaire statistics and results are also reported to the quarterly Occupational Safety and Health Committee and the committee report would also be announced to the employees.

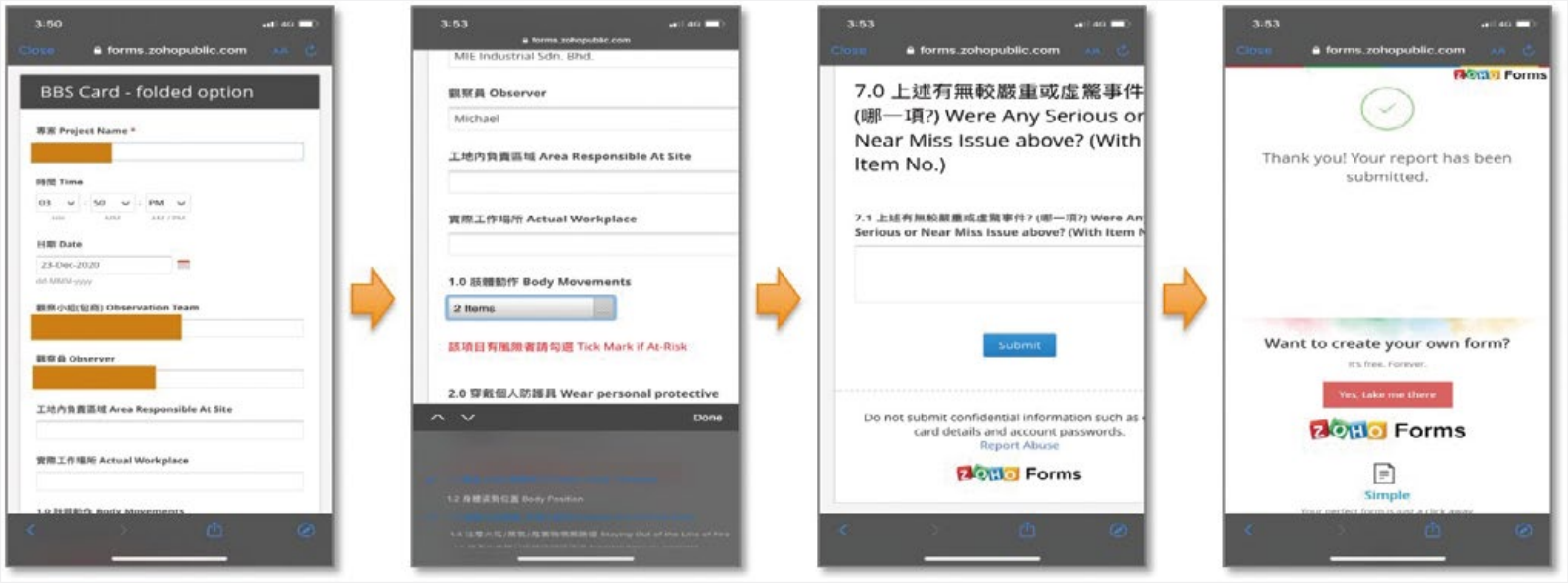
Supervisors at all levels inspect the site in person

Construction Safety and Quality

Since near-miss incidents are considered significant indicators of potential risks, CTCI employs an internal HSE Management System to handle the reporting and corrective actions for near-miss incidents from both CTCI headquarters and all project sites, overseeing project teams in reporting any near-miss incidents. In 2023, a total of 270 near-miss incidents were reported. Various stakeholders, including HSE Management Department, construction personnel, safety personnel, and contractors, would irregularly participate in review meetings for these reported incidents. The meetings aimed to identify potential hazards with higher occurrence frequencies among these incidents and then develop Lesson & Learned to enhance awareness across all project sites.

CTCI has been promoting Behavior-Based Safety (BBS) Management for years to ensure that all employees take responsibility for safety and understand how unsafe behaviors can impact the company's safety performance. Additionally, CTCI has implemented the "BBS Observation" app at project sites to facilitate observation, recording, and efficient statistical analysis. This initiative involves frontline workers, including both CTCI personnel and contractors' employees. For example, on-site HSE personnel are required to compile weekly observation results using the app to enhance safety management across various job categories. Regular BBS HSE review meetings are held at project sites to analyze high-risk observations, identify causes, and propose corrective actions.





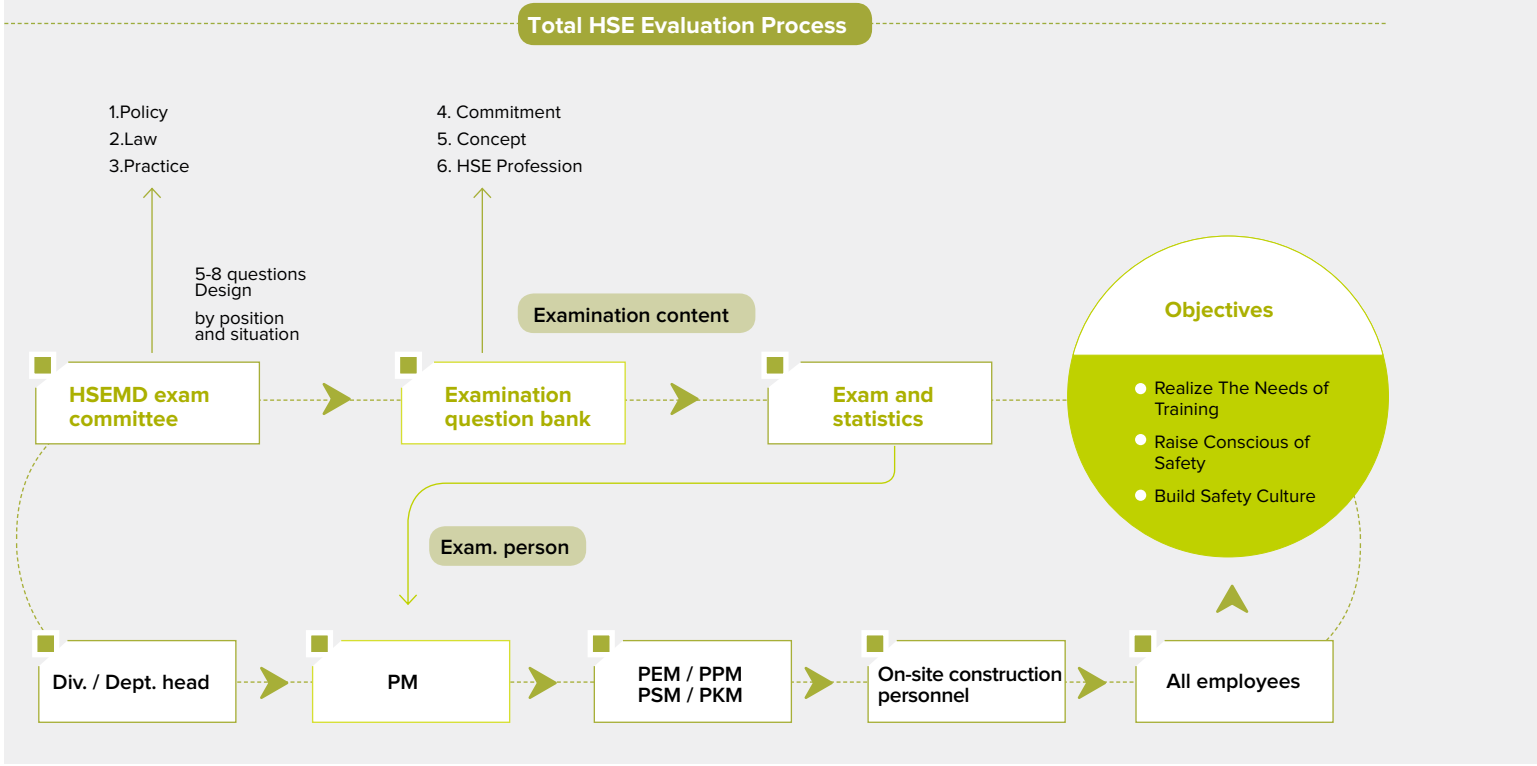
Total HSE Culture

CTCI deeply understand that "Total Safety" requires the efforts of all levels, and establishing an HSE culture is a long-term process that requires everyone's participation. This involves comprehensive changes in values, attitudes, behaviors, and systems, we are committed to promoting the participation of all employees in HSE activities, and continuously internalizing HSE awareness at all levels.

To raise the awareness of HSE knowledge among all employees, we continue to conduct Total HSE Evaluation. The purpose is to enable employees to establish correct HSE knowledge, and shape their good safety behaviors and attitudes , especially for those not directly involved in HSE-related work, and the Department heads, project managers, etc.

Total HSE Evaluation's questions are divided into three major topics: HSE policy commitment, HSE basic concept, and HSE practice. Evaluation questions are designed based on the target audience, recent modifications to procedures, current affairs, as well as job-related subjects. The evaluation results and statistics are summarized and presented at the Company's HSE management meeting. The results also serve as the basis for future HSE training or promotional campaign.

Total HSE Evaluation Process



Total HSE Evaluation Results

	2021	2022	2023
Participants in the Assessment (Person)	2,492	2,496	3,065
Pass Rate (%)	99.9%	100%	100%

Note: Make-up exams are made available for employees who failed or didn't complete the assessment within the prescribed timeframe. Questions with high failure rates are sent to CTCI University HSE Department for planning future training courses to enhance HSE awareness among colleagues over time.

To deeply cultivate the safety culture, CTCI held the Group HSE activities, in response to the National Workplace Safety and Health Week campaign organized by OSHA. Through the soft appeal of the HSE activities, CTCI seeks to exemplify behaviors consistent with corporate culture and to deepen employees' safety awareness. In 2023, CTCI launched a series of group HSE activities, including open letters from senior executives, construction site/ plant promotions, HSE fun contests, group HSE annual meetings, and themed speeches. So as to raise employees' HSE awareness and recognition. And makes it clear that "safety first" is one of the vital conditions for achieving professionalism. In addition, CTCI has included "safety first" in the criteria in the year-end performance review, showing that the company has attached great importance to and pursued the value of safety.

2023 Group HSE Series Activities

Senior Executive Letters On the Topic of HSE

- Senior executives around CTCI Group deliver HSE-themed speeches, urging all levels of supervisors and colleagues to collectively prioritize safety.
- Publish on CTCI's EIP website and simultaneously post on domestic and international project sites.

Construction Site/ Plant Promotion Events

- The key advocacies include expectations from senior executives regarding HSE promotion, Lesson & Learned from recent accidents, prevention for falling hazards, scaffold management, lifting operations, electrical safety management, color coding, and Stop Work Authority, etc.
- Approximately 3,300 employees from CTCI Group's construction sites and around 450 contractors, totaling 10,154 participants, attended.

HSE Contests

- Organize "Workplace Safety Photo Contest," where colleagues capture and document excellent examples from workplaces and personnel through their perspectives, embodying the core concept of safety first at CTCI.
- A total of 248 submissions were received, with 44 entries shortlisted. From these, 12 winning entries were selected, including final and excellence winners.

Group HSE Annual Meeting & Speech

- Invite HSE supervisors around CTCI Group to participate, review, and share their respective experiences in HSE management.
- Host an HSE keynote speech on " Resource Sharing for Disaster Reduction Technologies in the Construction Industry."


Construction Site/ Plant Promotion

HSE Contests Awards

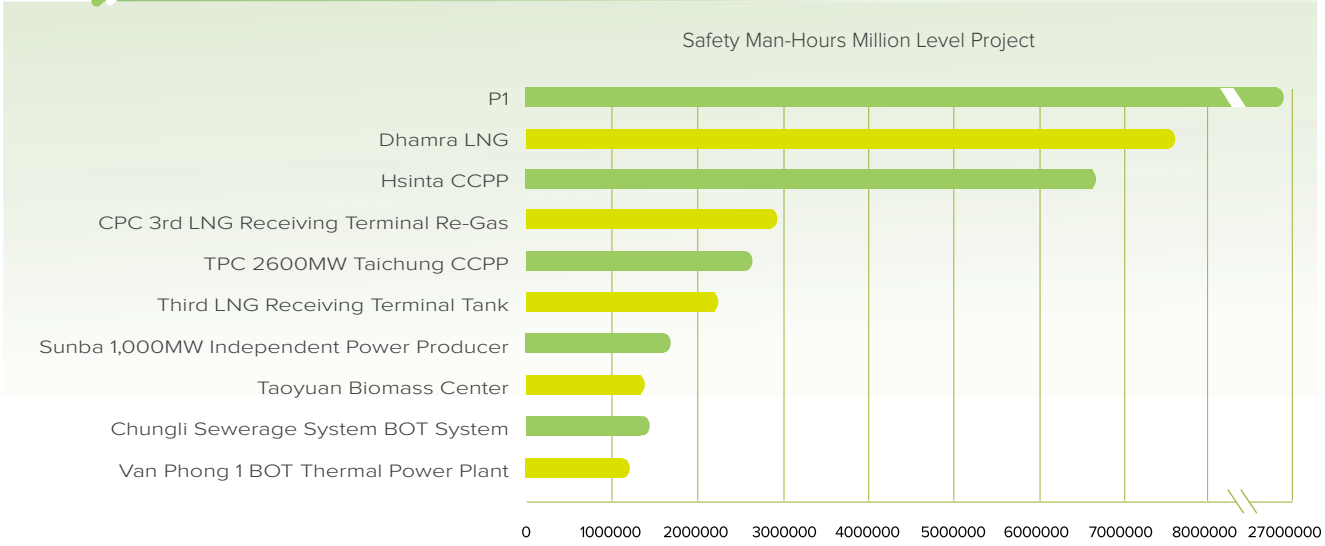
HSE Themes Speech


Group HSE Annual Meeting & Speech

To minimize incidents of occupational injury, all employees and contractors should complete HSE training before entering project sites as per local regulatory requirements or the requirements of business owners. To reinforce employees' and contractors' awareness of HSE-related regulations, the Company requires no less than three hours of "General Safety and Health Training." Additional three hours of training shall be added for each regulatory-defined special operation. Three hours of HSE on-the-job training shall be repeated every three years. Employees at CTCI HQ Building also receive routine HSE training as required by law, including fire drill, new employee training, regular employee safety and health training, first-aid and CPR training, as well as special topic high-risk hazard training. The Company continues to improve training programs at the project sites. All worksites are required to develop training matrix with differentiated training modules based on operational risk categories and role types, as a way to ensure all project workers are properly trained. CTCI has also applied to be the training unit of the "Taiwan Occupational Safety And Health Card", planning to conduct training at various construction sites, and encourage CTCI employees and contractors' workers to receive the safety and health card training. In 2023, domestic project sites conducted 86 occupational safety card training. The participants reached 2,078, including CTCI employees, contractors, and the on-site workers. Additionally, following the revision of the Occupational Safety and Health Facilities Regulations Article 128-9, aerial work platform should be assigned to the personnel who have received special occupational safety and health training; CTCI also assigned HSE personnel, construction personnel, and migrant workers, a total of 243 people to received the training, understanding relevant regulations and operating knowledge of aerial work platforms.

Million Level Projects

P1（Malaysia）、Dhamra LNG（India）、Hsinta CCPP（Taiwan）、CPC 3rd LNG Receiving Terminal Re-Gas（Taiwan）、Taichung CCPP（Taiwan）、Third LNG Receiving Terminal Tank（Taiwan）、Sunba Power Producer（Taiwan）、Taoyuan Biomass Center（Taiwan）、Chungli Sewerage System BOT System（Taiwan）、Van Phong （Vietnam）



Total Hours of HSE-Related Training (Hours)

2021	290,302
2022	274,076
2023	272,619

CTCI's commitment to HSE can be seen in CTCI management practices and the projects it manages. Achievements at the first HQ include the ongoing accumulation of safe man-hours (an accumulation of 64,390,306 safe man-hours from January 2007 to December 31, 2023). Many large projects are also expected toward an excellent record of safe man-hours. Among the 17 large-scale projects under construction in 2023 (with a contract value of more than 6 billion), 10 projects exceeded more than 1 million safe man-hours, and the Malaysia P1 project even exceeded 10 million. The remaining projects still continue to accumulate safe man-hours due to the progress of the project or the long construction period.

To encourage the implementation of the HSE management mechanism at the worksite, and the enhancement of project safety performance, the Company has developed an incentive system, offering special project rewards for projects exceeding the certain number of safe work hours at completion. In addition, we continue to conduct the "Excellent HSE Project Site and Personnel Selection" in 2023, the projects with excellent HSE performance and the on-site supervisors and safety personnel will be rewarded and set as role models. In addition, CTCI's excellent HSE management effectiveness are also reflected in the awards given by government agencies and customers, such as various awards and certificates of appreciation issued by the Taiwan OSHA, Taipower, and foreign customers. These results demonstrate our positive input of HSE management, HSE execution effectiveness, and our ongoing efforts.

1. 2023 Dow Jones Sustainability Index (DJSI) evaluation, CTCI the "Occupational Safety and Health" item reached PR 100 points and has been ranked for the sixth consecutive year (2018~2023)
2. CTCI headquarters achieved 60 million work hours without LTIs (Lost Time Injuries) by the Industrial Safety and Health Association of the R.O.C. in January 2023
3. Tainan City Health Shanshang District Station awards workplace health promotion appreciation to the Sunba Power Plant project
4. CTCI served as the Promotion Association Leader of the TOSHMS North District Promotion Association for 2023 and was awarded a certificate of appreciation by OSHA
5. Taipower awarded the contractor safety and health excellence unit for 2023, and the awarded projects include "Taichung CCPP Project", "Taichung LNG Project", and "Hsinta CCPP Project
6. OSHA 2023 OHS Corporate Sustainability Excellence Award, CTCI was selected into the top 10% of outstanding companies in other categories (Pic. A)
7. Taipower 2023 Green Environment Protection Site, "Hsinta CCPP Project" was awarded High Distinction performance (Pic. B), and the "Taichung Coal Handling Project" was awarded excellent performance
8. Taiwan Third LNG Receiving Terminal Tank Project was awarded by the CPC for achieving 3 million Safe Man-Hours (Pic. C)
9. Qatar RLPP Project was awarded by the client for achieving 2 million Safe Man-Hours

A

(Pic. A) CTCI was awarded the "Occupational Health and Safety Index - Other Category" Excellent Enterprise, and received the certificate from the Deputy Director of OSHA

B

(Pic.B) "Hsinta CCPP Project" was awarded the "Green Environment Protection Site" high distinction performance by Taipower, the CTCI chairman and the project team received the award from the Taipower President.

C

(Pic. C)"Taiwan Third LNG Receiving Terminal Tank Project" project team was awarded the 3-million safe working hours milestone by CPC.

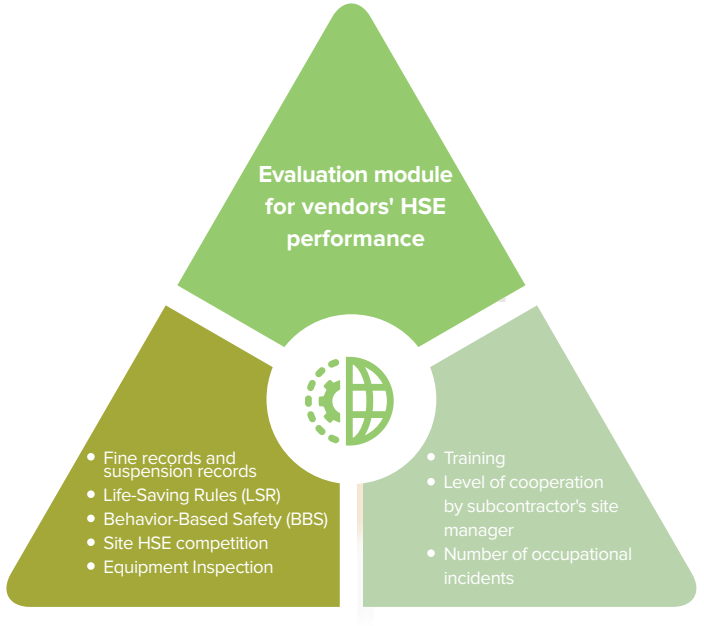
Contractor Management

To promote contractors to comply with HSE regulations and the company's HSE requirements, CTCI has developed the "Construction contractor HSE Management Rules." These rules have been formulated to provide clear guidelines for contractors to follow during the procurement and contracting stage. In addition, CTCI is constantly developing innovative techniques for managing safety and health effectively. CTCI applies information technology to support routine HSE activities, including the use of the BBS observation APP, which allows workers to report observation records on-site instantly. This approach saves time on data collection and shortens the BBS observation review frequency from once a month to once a week. The instant feedback from the APP is a significant advantage as it enables a quicker response to potential high-risk hazards on the construction site and enhances workers' safety awareness at all times.

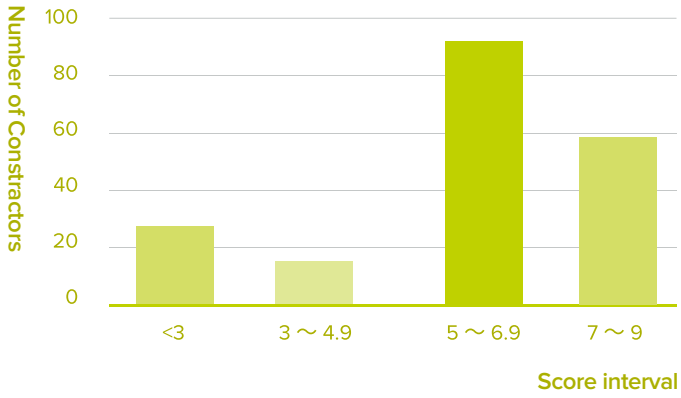
HSE Information Management System Benefits

Items	Scope of Project	Benefit
BBS Observation APP	Applied for all the project	• Reduce manual processing time and improve data integrity • Increase review frequency (from monthly to weekly).
HSE Information Management System	Applied for all the project	• Effectively manage occupational HSE information and database collection. • Systematize signature approval to enhance information transmission efficiency.
Contractor Evaluation	190 contractors were evaluated in 2023 and the completion rate of the evaluation was 100%	• Use the results of vendor evaluations as a reference for future vendor selection and promote safety and health management awareness among downstream vendors.
Weekday and Weekend Audit	Applied to all domestic construction sites, a total of 227 sessions were held in 2023	• Senior executives visit construction sites to demonstrate their leadership and command. • Increase awareness of on-site safety management.

Since contractors' HSE performance being a key concern for CTCI's international clients. We have implemented the “Contractor HSE Evaluation”. It accounts for 20% of the evaluation mechanism for project suppliers and contractors. The evaluation mechanism converts the HSE performance of contractors into a unified evaluation benchmark for quantification, and selects the contract amount of contractors, accumulated construction hours, etc., as the selection criteria for constructor evaluation. In 2023, 190 contractors were selected for evaluation, and the evaluation completion rate reached 100%. Contractor HSE performance and comprehensive score will be used as a reference for CTCI’s procurement and selection of suppliers and contractors.



HSE Evaluation for Contractor in 2023



CTCI and contractors' work-related injuries		2020	2021	2022	2023
Total Man-Hour [Note 1]	CTCI	6,837,702	6,707,421	7,437,934	11,303,273
	Contractor	13,850,902	19,066,827	23,473,431	12,237,814
	Total	20,688,604	25,774,248	30,911,365	23,541,087
Fatalities [Note 2]	CTCI	0	0	0	0
	Contractor	Male1 (C)	Male1 (B) Female1 (B)	Male2 (F)	0
Recordable work-related injury cases	CTCI	1	0	0	0
	Contractor	6	11	12	5[Note 3]
Fatality Rate [Note 4]	CTCI	0	0	0	0
	Contractor	0.01	0.02	0.02	0
Major Occupational Injury Rate [Note 5]	CTCI	0	0	0	0
	Contractor	0	0	0	0
OSHA Total Recordable Case Rate (TRCR) [Note 6]	CTCI	0.03	0	0	0
	Contractor	0.09	0.12	0.10	0.08
	Total	0.07	0.09	0.08	0.04
Lost Time Incident Rate (LTIR) [Note 7]	CTCI	0	0	0	0
	Contractor	0.01	0.06	0.06	0.05
	Total	0.01	0.05	0.045	0.025

Formula and Description:
Note1: Total Work Hours (CTCI employees use the working hours reporting system to count, and the contractors used the number of workers send-out on-site to estimate)
Note2: Fatal Hazard Category (B:Falling and Tumbling／C:Falling Objects / F : Collapse)
Note3: Recordable Work-Related Injury Cases (A:Got Hit:1 / B:Falling and Tumbling:1 / C:Falling Objects:1 / E:Clipping or Winding : 1／F : Collapse : 1)
Note4: Fatality Rate = (Number of deaths) * 200,000／Total work hours.
Note5: Major Occupational Injury Rate = (Number of Major Occupational Injuries, excluding deaths, the number of cases that could not be recovered within 6 months) * 200,000／Total work hours.
Note6: OSHA Total Recordable Case Rate (TRCR) = (Number of OSHA Recordable Cases, including all work-related death, days away, restricted or job transfer, and medical treatment) x200,000／Total work hours.
Note7: Lost-Time Incident Rate (LTIR) = (Number of Lost-Time Injuries, including fatal and lost time accidents) x 200,000 / Total work hours.

Occupational Safety & Health Penalty Statistics from 2021 to 2023

Year	Event	Fine Cases/Fine Amount	Non-Monetary Penalties
2023	General Violation Event	9 cases/ TWD 1,220,000	1 case
	Major Violation Event	0 case	0 case
2022	General Violation Event	15 cases/ TWD 1,430,000	1 case
	Major Violation Event	2 cases [Note 2]/ TWD 300,000	1 case [Note 2]
2021	General Violation Event	11 cases/ TWD 1,240,000	2 cases
	Major Violation Event [Note 1]	3 cases [Note 3]/ TWD 360,000	1 case [Note 3]

Note 1:"Major Violation Event" is caused by a "Major Occupational Accident" as defined in Article 37, Occupational Safety & Health Act.
Note 2: Among them, 2 fine cases and 1 non-monetary penalty case were the same major violation event.
Note 3:These 2 fine cases and 1 non-monetary penalty case were the same major violation event.

Healthy Workplace

Comprehensive health management

Comprehensive health management includes three major aspects: health examination, health promotion, and health risk management. CTCI has hired 10 full-time nurses, 3 contracted labor health practitioners, and 2 contracted physiotherapy practitioners to build a safe workplace and protect the health of employees.

Comprehensive health management

Health examination

1. Conducted physical examination for 1,331 Taiwanese employees
2. Health examination for 296 migrant workers (see Highlight 1 for details)
3. A total of 8 free on-site health examination were conducted, and a total of 703 people were screened for oral cancer, colorectal cancer, and B&C liver cancer (see Highlight 2 for details)

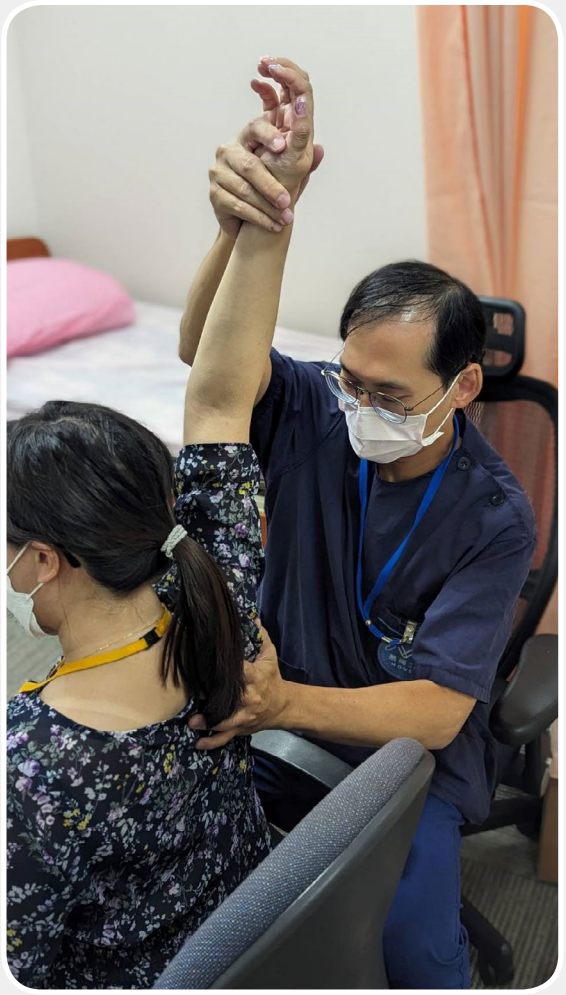
Health promotion

1. 181 health seminars with 7,733 participants
2. 31 anti-drug advocacy sessions (see Highlight 4 for details)
3. Massage service for the visually impaired: 165 people (see Highlight 3 for details)
4. 16 education promotion sessions for migrant workers (see Highlight 1 for details)
5. 1,672 physician consultations; 96 physiotherapy consultations; 3,821 nurses' health education
6. On-site assessment of human factors for 1 session

Health risk management

1. Tracked 1,056 people with health check-up abnormalities
2. Abnormal workload assessment for 632 employees
3. Human-factor hazard assessment: 100 people
4. 887 people assessed on overseas business trips
5. Health assessments conducted for 361 employees after working overtime
6. Maternal health protection assessment: 28 people
7. Managed 124 people with hyperglycemia

Note: The figures in the above table only disclose the health management data of CTCI headquarters and domestic construction sites.



Comprehensive health service

Highlight 1

They Are Our Family_ Comprehensive Health Care for Migrant Workers

Through employee health checkup and health education campaigns, migrant workers at domestic job sites are better informed about their health status. Cross-departmental teamwork is then applied to proactively seek medical treatment and control diet to keep migrant workers healthier.

Health education

Health checkup

Health diet

Highlight 2

Prevention is better than treatment, free health checkup

Free screening services for oral cancer, colorectal cancer, and B&C Hepatitis were provided to site workers (employees + contractors + migrant workers) for a total of 8 screenings. A total of 694 people were screened for oral cancer, colorectal cancer and B&C liver cancer. If abnormalities or precancerous lesions are found, the team will guide employees or contractors to seek medical attention.

One by one education

Toolbox promotion

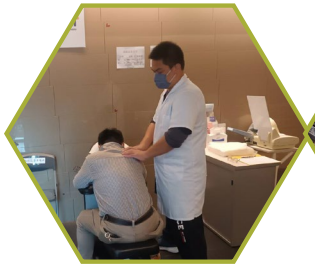
Zhongli Sewerage System BOT Project

Sunba Project

Highlight 3

Tired from work, why not get a massage for the visually impaired

In order to create a better and healthy workplace, the massage service for the visually impaired, which was suspended due to the pandemic, has been re-launched after the pandemic has eased. The service is now available on the 2nd floor of the Group's headquarters building in December 2023 to relieve the pressure of work for employees, and improve work efficiency. Three visually impaired masseuses provided massage service at the headquarters and the construction site.



The second floor of HQ1

Project site

The second floor of HQ1

Highlight 4

Anti-drug and health for all

The Company is now in its third year of drug advocacy. In addition to advocating employees' awareness of drugs and safety of drug use, the Company has implemented four major actions for the prevention and control of drug abuse. To make it easier for colleagues to identify drugs, we use diverse and interesting famous painting exhibitions, famous painting posters QA and other promotional methods to interact with colleagues, the purpose is to let colleagues have a deeper understanding of emerging drugs.

Anti-drug painting exhibition

Anti-drug propaganda at sports games

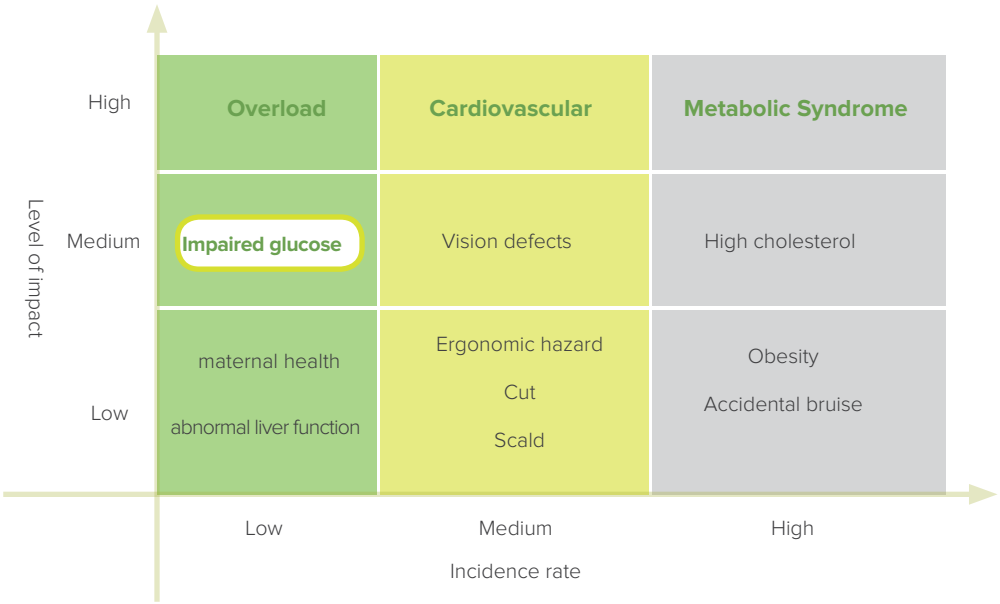
Anti-drug painting exhibition

Anti-drug health education

Health risk identification and measures

Health risk matrix: Through the use of the health risk matrix, the incidence and impact of injuries, illnesses, and impacts can be analyzed to identify the health risks of CTCI employees and to formulate health management and mitigation measures.

Health Risk Matrix



Risk value= incidence rate*degree of influence

Level of impact:

- High- unable to return to work (including death);
- Medium - return to the original job with different duties after injury or illness;
- Low- return to the original job with original duties, or return to different job with original duties after

injury or illness Incidence rate: High- higher than prevalence of Health Promotion Administration (HPA); Medium- ranging from 51% to 100% of HPA prevalence : Low- lower than 50% of HPA prevalence.HPA prevalence : Low- lower than 50% of HPA prevalence.

High

1. Track and assess risk factor and recovery progress every 3-6 months; offer professional medical advice and health education based on the assessment of professional physician.
2. Offer care and support from executives when necessary.

Medium

1. Track and assess employees' health and risk factor regularly, offer on-sitecounseling by physicians and health education by nurses.
2. Hold health promotion activities to enhance understanding of illness.

Low

1. Send health education messages via email on irregular basis, strengthen heath self-management consciousness.
2. Advocate health information on Group health and care platform on irregularly.

Risk levels and mitigation measures

2023 "Sugar reduction and health improvement"

The theme of 2023 CTCI's health management is "Sugar reduction and health improvement." The goal is to strengthen the staff's knowledge on sugar intake and related diseases through case management, multimedia and physical education courses. A total of 9 blood sugar related health education articles and two physical education sessions were held by the nurses. A total of 303 hyperglycemia colleagues were included in case management and tracking, and 95% of hyperglycemic employees have sought medical attention and taken regular drug control. The employees with low levels of cooperation implement their corresponding preventive actions through teamwork.

Multimedia health column provides various blood sugar hygiene education resources

CTCI is actively establishing a superior healthy working environment and promoting workplace health enhancement measures. In 2022, we continued to maintain certifications such as Healthy Workplace, AED Safe Site, and Excellent Breastfeeding Room. Regarding employee psychological care, we offer employee care assistance, handling of employee feedback (such as improvement proposals, employee complaints, illegal infringements, sexual harassment, and whistleblowing), labor dispute resolution, and labor condition risk assessments (e.g., extended working hours risk assessment). We also collaborate with external institutions to provide professional psychological counseling services, offering psychological consultations to 354 employees in 2023. Additionally, we commission external organizations to manage Employee Assistance Programs (EAPs) to help address psychological distress.

Consultation

Provide a free online channel for preliminary consultation and psychological counseling services (conducted by the Group's psychologists). The Company also provides self-funded consultations with professionals of each field to our employees, including mental health, medical, legal, financial, tax, and management consulting.

Establish a mental health platform

Includes online psychological self-assessment instruments (sleep, emotion, depression, and stress, etc.), mental health education, resource channel and information, etc.

Well-being classes

Organizes courses on emotional management, work/life balance, workplace physical and mental well-being, and supervisor intervention skills. In 2020, EAP health education was conducted through videos due to COVID-19.

CTCI has established Employee Welfare Committee in charge of promoting employee welfare. Budget mainly derives from corporate funding and comprises four categories: general welfare, leisure, educational support, and others. Those who enjoy employee benefits include regular, contract employees and dispatched employees.Total expenditure of employee benefits in 2023 amounted to NT$65,861,114. In addition to members elected from each department, Employee Welfare Committee has an office staffed with two administrators to provide services and consultation.

Employee welfare expenditure (NT$)

2021	55,697,617
2022	71,453,927
2023	65,861,114

Overview of CTCI Clubs

CTCI has been organized clubs for our employees to relax both physically and mentally. In 2023, with relaxation of the epidemic prevention measures, we organized 20 clubs with various activities such as lectures, courses, and outdoor activities to create a learnig and sharing workplace atmosphere. The operating funds of the association come from the annual budget planned by the CTCI United Vocational Welfare Association. In addition, the clubs can also provide ideas on different activities and creative proposals, and apply for additional subsidies for organizing and participating in various activities.

Overview of CTCI Clubs

Sports clubs

Basketball Club, Badminton Club, Table Tennis Club, Mountain climbing Club, Tai Chi Club, Fitness Club, Qigong Club

Non-sports clubs

Photography Club, Calligraphy and Painting Club, Home Economics Club, Music Club, Hope and Love Club, Buddhism Club, Reading Club, English Learning Club, Bridge Club


Basketball club


Badminton Club


Table tennis clubs


Tai Chi Club


Qigong Club


Mountain climbing club


Photography Club


English Learning Club


Calligraphy and Painting Club


Reading Club


Bridge Club


Home Economics Club


Buddhism Club


Music Club


The Faith, Hope and Love Club


Fitness Club

CTCI's Sustainable Role

CTCI's Sustainable Role IV —
A Corporate Citizen Willing to Commit

CTCI's Sustainable Role IV - A Corporate Citizen Willing to Commit

CTCI actively fulfills corporate citizenship responsibilities, taking the United Nations Sustainable Development Goals (SDGs) as a guide, and starting from its core business, harnesses the power of the CTCI Education Foundation, company resources, volunteers, and local communities to promote the sustainable development of Taiwan's engineering industry and continuously elevate it.

37.48 millionNTD
in charity expenditure

59 Associations
we participate in, including academic and professional associations

11,581 people
attended CTCI Education Foundation's events

5.60 million NTD
funding for industry-academia collaboration programs at universities

Social Impact

In the pursuit of sustainable development, CTCI is committed to injecting new vitality into Taiwan's engineering development with its own expertise and core values, while actively giving back to society. We adhere to the United Nations' Sustainable Development Goals (SDGs) for 2030, focusing on three main pillars: Application of environment friendly green techniques, Cultivating engineering talents, and Promoting sustainable engineering & social care. We are dedicated to realizing the vision of "promoting environmental sustainability and advancing green engineering construction."

In addition to participating in public construction projects, industry-academic collaborations, recognizing academic achievements and outstanding students, organizing volunteer activities, and supporting charitable organizations, we also integrate resources from the CTCI Education Foundation and local communities. We have established both internal and external public welfare networks and platforms to leverage our influence on society through practical actions.

Following the model of the London Benchmark Group (LBG), CTCI distinguishes various social investments into "activity objectives" categories and "cost categories," examining the relevant inputs, benefits, and their impacts in each aspect. This assists in rational resource allocation for enterprises, reviewing the effectiveness of resource inputs, and effectively combining financial and non-financial information to meet the expectations of multiple stakeholders, thus creating shared value.

In recent years, the focus of public welfare activities has been on community investment, including various project-based activities involving local community participation, participation in engineering-related public association activities, talent cultivation and corporate visit activities, charitable activities, etc. These efforts are combined with business-oriented initiatives relevant to CTCI's core capabilities to expand CTCI's social influence. In terms of resource allocation, CTCI primarily utilizes cash donations and manages cost categories, accounting for 48.92% and 44.66% respectively, followed by approximately 5.55% investment in volunteer manpower.

In 2023, our company invested approximately NT$3.73 million to support cultural development. This included organizing a YOYO meet-and-greet at the sports event to create a fun parent-child interaction. We co-hosted the "Shilin Cultural Festival" with Zhishan Cutural & Ecological Garden, including an opening concert to promote culture in the Shilin and Tianmu areas. Additionally, we purchased books for employees to enhance professional skills, compiled a group-exclusive book, and sponsored professional associations' publications. This not only supports domestic publishing but also encourages the public to cultivate reading habits. Other initiatives included sponsoring a climate change art competition and exhibition, subsidizing art and cultural clubs (such as the Reading Club) to organize lectures and exhibitions, and establishing public art, making cultural and artistic activities accessible to both children and adults. CTCI continues to encourage all departments to consider sustainability and cultural development when organizing activities to expand our cultural engagement efforts.

Categories Of Activity	2021		2022		2023	
	Amount Invested (in NTD)	Proportion (%) A	Amount Invested (in NTD)	Proportion (%) A	Amount Invested (in NTD)	Proportion (%) A
Charity activity	4,778,398	22%	1,860,208	9%	1,607,746	4%
Community investment	7,804,910	37%	10,991,123	53%	25,757,191	69%
Commercial activities	8,617,082	41%	7,768,582	38%	10,113,949	27%
Total	21,200,390	100%	20,619,913	100%	37,478,886	100%

Investment Method	2021		2022		2023	
	Amount Invested (in NTD)	Proportion (%) A	Amount Invested (in NTD)	Proportion (%) A	Amount Invested (in NTD)	Proportion (%) A
Cash donations	20,668,000	97.49%	17,737,413	86.02%	18,335,409	48.92%
Goods donations	41,140	0.19%	48,320	0.23%	324,480	0.87%
Volunteering	476,250	2.25%	2,106,250	10.22%	2,081,157	5.55%
Management Cost	15,000	0.07%	727,930	3.53%	16,737,840	44.66%

Three Pillar Benefits

Application of environment friendly green techniques

Purpose: To combat climate change and reduce CO_2 e and greenhouse gases emissions, we implement green management and combine eco-friendly concepts with our business management. We provide energy- saving and carbon- reduction services for our clients and offer ecofriendly advice to our clients during project quoting and executing, helping them take actions towards climate change.

Business Benefits

	2020	2021	2022	2023
Number of Green Engineering Projects	8	3	6	4
Revenue from Green Engineering (in thousand NTD)	8,171,630	6,302,938	10,540,748	8,224,140

Notes: Revenues are calculated on the basis of engineering projects with 90% completion progress that year.

Community Benefits

	2020	2021	2022	2023
Electricity saved (MWh/ year)	16,794.1	2,494.2	1,213.9	31,613
Water saved (10,000 tons/year)	309.00	231.9	158.5	13
GHG emissions reduction (tons/year)	123,930.3	8,960.1	502,948.8	45,589
VOC reduction (tons/ year)	224.30	138.06	52.9	0

Cultivating engineering talents

Purpose: CTCI understands that talents are the key behind excellent engineering projects. Through internal training and external learning, we hope to pass on expertise from generation to generation, and introduce the latest technology into the fields of design, process, construction, and among others. We endeavor to contribute to the sustainability of the Earth, and at the same time nurture more outstanding talents.

Business Benefits

	2020	2021	2022	2023
Reduce recruitment costs (%)	-- (*)	9	3	2
Employees serving as campus instructors (number of people)	6	3	21	24
Innovative technology development (number of items)	2	1	1	1

Note: Due to the Covid-19 pandemic, campus recruitment activities in 2020~2021 have been canceled or reduced.

Community Benefits

	2020	2021	2022	2023
Number of students benefited*	640	350	1,427	2,720
Number of schools that joined industrial-academia cooperation schemes	2	1	2	1
Number of students who took internship	6	1	7	10

* Students benefited include those who came to campus lectures,campus fairs and briefing sessions

Promotion of sustainable engineering and social care

Purpose: As a leader in the engineering sector, we fulfill our role as a corporate citizen, devoting to academic and professional associations and many public construction projects. We actively participate in all kinds of charity events, engage in community campaigns, care for the environment and eco-system, and exert our efforts to social charity and welfare events.

Business Benefits

	2020	2021	2022	2023
Number of international seminars on sustainable engineering we have organized	2	2	2	2
Number of ESG awards we have won	8	7	13	17
Number of times our brand was exposed through media	668	952	1,524	2,554
Number of employees that participated in sustainable activities	163	174	285	723

Community Benefits

	2020	2021	2022	2023
Number of people that took part in CSR and sustainability events	9,175	10,554	10,468	10,976
Number of external parties that we work with	89	71	102	90
Number of people that took part in 2023 Global Corporate Sustainability Forum (GCSF)	3,100	5,703	4,200	4,721

Engineering and Social Welfare

Fostering Engineering Talents

CTCI not only provide our employees with a variety of educational training resources to enhance their professional competency, but also capitalize the knowledge power of our senior engineers and senior managers, who deliver lectures in engineering departments of universities and share practical experience with the academia. Moreover, we offer students from engineering-related departments and those interested in engineering opportunities with internship opportunities to minimize the gap between the industry and the academia. In addition to traditional methods and criteria of evaluation on academic performance, we have also formulated a project research program that is related to CTCI's engineering practices. The goal of this program is to strengthen industrial and academic ties, and help students get onboard the job market as early as possible by commissioning academic engineering project research or school-based R&D project. In 2023 CTCI continued to carry out industry-academia cooperation with Cheng Shiu University and National Taiwan University of Science and Technology, with a total amount of NT5.6 million. For this cooperation, we continue with the development of our industrial pipeline flange lock bolt technology, innovative construction methods and complete module development in 2021 & 2022 to achieve precise locking, save manpower and time, improve engineering quality and execution efficiency. We also have plans for electromagnetic transient calculation and analysis of the power system, and the development of on-site hazard analysis and detection technology, which can serve as a basis for our on-site personnel to inspect the construction site and identify and prevent potential occupational hazards.

	2021	2022	2023
Collaborating Partner(s)	Cheng Shiu University	Cheng Shiu University and National Taiwan University of Science and Technology	Cheng Shiu University
Amount Devoted (thousand NTD)	**2,500**	**7,310**	**5,600**
Details of collaboration	• Research and evaluation of electromagnetic interference of lightning strikes on light-current systems： • Through the SESShield-3D model, the division of lightning protection areas is presented and discussed in detail in order to plan and provide the optimal arrangement of lightning protection equipment.	• Developing automated tools for industrial pipeline flange bolt locking: Replacing traditional torque wrench locking methods to improve engineering quality and execution efficiency. Analysis of electromagnetic instantaneous calculation in power systems: By using electromagnetic instantaneous models, the accuracy of transient electrical characteristics simulation in power systems can be improved to optimize insulation coordination configuration for less design risks and on-site adaptation time. • Analysis of construction site hazards and development of detection technology: Sub plan I: Identification and prevention of hazards from crane hanging operations and unsafe openings • Analysis of construction site hazards and development of detection technology: Sub plan II: Proof of concept of the warning zone for hanging operations and automatic detection of unauthorized personnel. • Analysis of construction site hazards and development of detection technology: Subproject III: Proof of concept of the automatic active detection and notification system for unsafe opening covers/fences.	• Develop innovative in-pipe inspection and cleaning technology that allows a more complete inspection of the inside of the pipeline and enhanced cleaning of localized areas (e.g. dents) to gripping foreign objects, which cannot be overcome by previous technology, thereby improving the quality of work.
Benefits for CTCI	• Benefits for CTCI Pipeline flange auto-bolting robot • Using the pipeline flange auto-bolting robot to perform bolt tightening operations can ensure that the bolt torque value remains within the standard. The torque value can be recorded at the same time to keep accuracy.	• **Pipeline flange auto-bolting robot** Using the pipeline flange auto-bolting robot to perform bolt tightening operations can ensure that the bolt torque value remains within the standard. The torque value can be recorded at the same time to keep accuracy The record of fastening jobs will be automatically uploaded to the cloud to prevent data loss, and a QR code can be printed and attached near the flange. Inspection personnel can access the record by scanning the QR code. • **Analysis of electromagnetic instantaneous calculation in power systems:** Through the EMTP electromagnetic transient model, various electrical characteristics of the power system at transient times can be precisely simulated to prevent potential hazards of transient surges for less design risks and optimal insulation level configuration. • **Analysis of construction site hazards and development of detection technology:** • **Plan I: Identification and prevention of hazards from crane hanging operations and unsafe openings:** The BOWTIE analysis of CTCI hanging operations and unsafe openings, the root cause analysis of 36 domestic crane related major occupational accidents disclosed by the Occupational Health and Safety Administration, and the failure mode analysis of mobile cranes and tower cranes in the cases of mechanical failures, and the graphical checklist of construction fences and frames can be used as a basis for on-site personnel to inspect the construction site to identify potential hazards. • **Sub plan II. Proof of concept of hanging operation warning zone and automatic detection of unauthorized personnel:** Personnel access to the hanging operation area can be detected in the automatic warning zone for unauthorized access to prevent occupational accidents. • **Sub plan III. Proof of concept of the automatic detection and notification system for unsafe opening covers/fences:** An automatic detection and notification system is built in the unsafe opening warning zone. When the sensor detects someone is passing through the warning zone, the alarm will sound to remind construction workers to pay attention to this area and send data to the cloud for further analysis.	• **Pipeline cleaning robot:** The system can be used to inspect and record images deep inside the pipeline. It also has the function of spot cleaning and foreign object gripping. Therefore, it is expected that more accurate interpretation data can be obtained than the traditional method, which can be used as an important reference for maintenance or process calibration.

External Initiatives

Participation in Academic and Professional Associations

As a leader in the engineering service industry, CTCI actively participates in academic associations, associations, and unions in the engineering profession and sustainable development-related fields, enabling CTCI to interact and cooperate with other enterprises, academies, and professional groups to solve common problems, provide appropriate policy suggestions, and promote the sustainable development of the industry in an effort to enhance the nation's competitiveness. In 2023, CTCI joined a total of 59 associations as group and individual members, participating in professional training, co-organizing and sponsoring events, article contribution and sponsoring journals, and investing a total of NTD$ 3,937,835, subsidizing 514 participants.

Annual donations and expenditures (Unit: NTD)	2020	2021	2022	2023
Lobbyists/organizations, interest groups	0	0	0	0
Political organizations, candidates	0	0	0	0
Industry/trade associations, or tax-free organizations (such as think tanks)	12,990,000	17,635,000	19,195,000	17,592,000
Others (such as election proposals, referendums, etc.)	0	0	0	0
Total	12,990,000	17,635,000	19,195,000	17,592,000
Data coverage ratio (%)	100	100	100	100

Note: CTCI is politically neutral and does not donate to political parties, political figures or related institutions, and still encourages employees to exercise their civil rights.

Initiatives/issues	Participating roles and the organization's position	Amount invested in 2023 (Unit: NTD)
Enhance Taiwan's sustainable development education, cultivate sustainable and innovative talents, reward sustainable and forward-looking research, promote corporate social responsibility education, and promote the sustainable development of universities.	**Established CTCI Education Foundation and sponsored operating funds** Starting from engineering, CTCI has long been committed to enhancing the competitiveness of the industry with core engineering expertise, and working with domestic and foreign partners to fulfill its green commitment. In order to bring together the key forces to change society, promote green engineering construction, cultivate excellent talents, and help Taiwan move towards sustainable development, "CTCI Education Foundation" was established in November 2015 to deepen the social influence.	15,000,000
Adhere to the visionary concept of net zero, lead the trend of net zero in Taiwan, build social consensus on net zero, create net zero society co-prosperity, and promote international cooperation and exchanges	**Managing Director and Director, Taiwan Net Zero Emissions Association** "Taiwan Net Zero Emission Association" is a non-profit organization established by the Taiwan Institute of Sustainable Energy and 26 domestic enterprises in 2021, with the aim of helping enterprise members fulfill net-zero emissions, and bringing the communication gap between enterprises and the government to accelerate the net-zero transition in Taiwan.	150,000

Name of advocacy organization and issue	Role played	Amount invested in 2023 (Unit: NTD)
Chinese Institute of Engineers	**Managing Director and Director, Chinese Institute of Engineers** The founding mission of the "Chinese Institute of Engineers" is to connect engineers, research the engineering profession, and apply engineering and technology to promote public and social well-being, in order to move forwards and realize its vision: The purpose is to unify the power of the engineering industry and promote the excellent engineer culture through sharing experiences to create high-added value and social status for technical professionals, with the ultimate goal of facilitating the public and social well-being through applied engineering and technologies.	196,100
Sino-Indonesia Cultural and Economic Association	**Sponsored the Sino-Indonesia Cultural and Economic Association Scholarship** In response to the promotion of civil exchanges between Taiwan and Indonesia in the absence of diplomatic relations, the Sino-Indonesia Cultural and Economic Association was established in September 1971, jointly by the Ministry of Foreign Affairs, Overseas Compatriot Affairs Council, and personnel from from enterprises, the culture industry, the education industry, public opinion representatives, and overseas compatriots. The association aims to promote cultural exchanges and economic cooperation between Taiwan and Indonesia.	120,000
Taiwan Institute of Chemical Engineers	**Director, Taiwan Institute of Chemical Engineers** The "Taiwan Institute of Chemical Engineers" was established in 1953 for the purpose of connecting chemical engineering enthusiasts and chemical engineering academics to support the chemical engineering construction in Taiwan, with the hope that the chemical engineering industry can unfold a new page based on the rich research over the past years to become a leader in net zero sustainability.	100,000

Participating Identities	Academic or Professional Associations CTCI Joined in 2023
Director	Cross-Strait CEO Summit, Sino-Arabian Cultural & Economic Association, Middle East Business Association, Taiwan India Business Association, Chinese Arbitration Association, Taipei, Rail Engineering Society Of Taiwan, Automotive Industrial Development Society of Taiwan, Taiwan Welding Society, Taiwan Net Zero Emissions Association, Taiwan Institute for Sustainable Energy, Taiwan-U.S. Carbon Capture, Utilization and Storage (CCUS) Industry Promotion Alliance, Chinese Institute of Engineers, The Chinese Association of Engineering Consultants, The Taipei Federation of Engineering Consultants, Taiwan Electric Power Association, Water Affairs Organization · Taiwan, Taiwan Institute of Chemical Engineers, Nuclear Science & Technology Association, Sino-Indonesia Cultural and Economic Association, Chinese Institute of Engineers (Kaohsiung Chapter), Chinese Society of Mechanical Engineers, Taiwan Institute of Steel Construction, Chinese Society of Structural Engineering, Pressure Vessel Association
Supervisor	Taiwan Welding Society, The Chinese Association of Engineering Consultants, The Taipei Federation of Engineering Consultants, Taiwan Offshore Wind Turbine Foundation and Marine Engineering Association.

Climate-related lobbying and external engagement management system

Climate change is a major challenge facing the world today. CTCI understands the risks posed by climate change and has long supported the goals of the Paris Agreement. It has established a climate policy that "The Group all jurisdictions are unanimously and externally advocated to work with different organizations to control the increase in the earth's temperature to within a maximum of 2 degrees Celsius compared with the pre-industrial era, and strive to pursue the aforementioned standard of further tough goal of reducing the temperature increase to within 1.5 degrees Celsius". Establish a climate lobbying management system for climate-related lobbying activities. The management scope includes the company and global subsidiaries. Its structure is divided into two methods: direct lobbying and trade associations to supervise and manage the company's lobbying activities and the qualifications of trade associations, ensuring that climate-related public engagement is aligned with the goals of the Paris Agreement.

Direct Lobbying

In order to maintain transparency and neutrality, CTCI mainly provides reference for the formulation of climate-related policies and laws through industry associations. However, if there is a need for direct lobbying on policies, it will strictly comply with local lobbying regulations. CTCI's direct lobbying management system and monitoring process are as follows:
1. Lobbying content must comply with CTCI's climate policy and the Paris Agreement.
2. It needs to be evaluated by the ESG and Net Zero Team, and then submitted to the ESG and Net Zero Committee for approval before proceeding.
3. Subsequently, the Social Section of the ESG and Net Zero Team will track the implementation progress and confirm whether the policies and laws lobbied for are aligned with the goals of the Paris Agreement, such as climate change adaptation and 2050 net zero emissions. If the lobbying is aligned with goals, will continue to promote; if not, will eliminate the lobbying. Report progress and results to the Board and ESG and Net Zero Committee annually.

Trade Association

CTCI actively participates in climate-related trade associations and hopes that the associations' concepts of responding to climate change and promoting net-zero emissions will be more consistent with CTCI. CTCI's climate-related trade association management system and monitoring process are as follows:
1. Identify climate-related trade associations: The ESG and Net Zero Team conducts a survey of global trade associations that participate as members at the end of each year, identifying those whose main purpose is to respond to climate change and the Paris Agreement, or who are active in speaking out, promoting, education, advocacy, policy suggestions and other items about climate change-related issues shall be included in the management objects of this program.
2. Review and monitor whether trade associations comply with the Paris Agreement: The ESG and Net Zero Team reviews the management objects and evaluates them based on the climate policy positions publicly stated by climate-related trade associations and related speeches, promotions, education, initiatives, and policy recommendations. Whether they support and comply with the goals of the Paris Agreement, such as supporting 2050 net-zero emissions and controlling warming well below 2°C. After the evaluation, trade associations are divided into two categories: those with aligned goals and those with misaligned goals.
3. If it is found that a trade association is misaligned with the goals of the Paris Agreement, CTCI will take corresponding measures: express opinions to the association, withdraw from the association if there is no improvement within two years, or even boycott the association to express CTCI's emphasis on climate change and ensure actions are consistent and forceful.

In terms of implementing green commitments, CTCI is a founding member of the "Taiwan Alliance for Net Zero Emission" and the "Taiwan Net Zero Emissions Association" and serves as the first executive director and director; it pays special attention to carbon capture, utilization and storage technology (CCUS) and served as the convener of the "Carbon Capture Group" of the Taiwan-US CCUS Industries Promotion Alliance (TUCA) to promote the development of net-zero technology, foster the achievement of Taiwan 's 2050 net-zero transition goals, and expand research exchanges and cooperation opportunities among international industries, governments, academia and research institutions. In 2023, the Taiwan Net Zero Emissions Association hosted the CCUS Forum and the Hydrogen Energy Forum at the Asia-Pacific Sustainability Forum to discuss the latest technologies and development trends and accelerate the country's progress of achieving net-zero goals. In addition, CTCI Education Foundation has been promoting sustainable education and became the 11th NGO observer in Taiwan admitted to the UNFCCC (United Nations Framework Convention on Climate Change) in 2022, fully demonstrating the active role and achievements NGOs played at the Climate Summit. In 2023, CTCI Education Foundation was invited to being the representative of Taiwanese enterprises to attend the 28th Conference of the Parties (COP28) that took place in Dubai. The Group Chief Sustainability Officer gave a speech titled "CTCI's Road to Sustainability and Net-Zero" at a forum called "Taiwan's Experience in Developing the Green Economy" in the Palau National Pavilion.
CTCI EF also co-organized the 3rd Taiwan Sustainability Engineering Forum in 2023 with CTCI, where hundreds of industry pioneers as well as upstream and downstream supply chain vendors shared practical experiences on three main topics: Net Zero EPC, Resource Recycling, and Social Impact, jointly creating value chain influence.
In 2023, CTCI participated in a total of 59 trade associations, and 10 of them were identified as climate-related trade associations, accounting for 17%, and were included in the management objects of the climate-related trade association management system. The 10 trade associations are: Chinese Institute of Engineers, CTCI Education Foundation, Taiwan Institute for Sustainable Energy, Taiwan Net Zero Emissions Association, Taiwan-US Carbon Capture, Utilization and Storage (CCUS) Industries Promotion Alliance, Taiwan Carbon Capture Storage and Utilization Association, Taiwan Electric Power Association, Taiwan Society for Circular Economy, CommonWealth Sustainability, and Global Views Monthly 's ESG Alliance. After reviewing and monitoring, there are no trade associations with misalignment goals.

Social Care

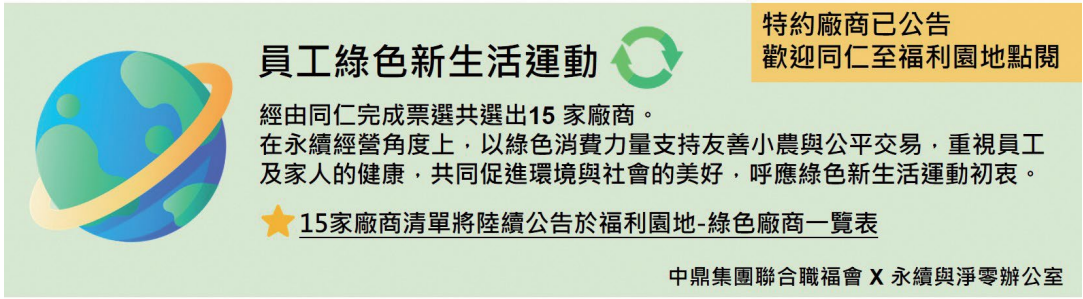
As a leader in the engineering sector, we fulfill our role as a corporate citizen, we actively participate in all kinds of charity events, engage in community campaigns, care for the environment and eco-system, and exert our efforts to social charity and welfare events.

Green New Life Movement

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

CTCI Green New Life Movement has become a promoter of green consumption.

CTCI has been promoting green new life movement through green consumption within the company, inviting employees and their families to pay attention to their health, and jointly support environmental and social care through green consumption. As an environment-friendly consumption pattern, green consumption promotes moderate consumption and priority selection of green products with lower impact on the environment, upholding the principles of green consumption, Reduce, Reuse, Recycle, Economic, Ecological, and Equitable On the World Earth Day (Apr. 22) last year, a green new life manufacturer voting activity was held, through wich colleagues selected 15 green manufacturers. Now, we have completed signing contracts with these manufacturers, and discussed relevant discounts with them via our Welfare Committee, hoping to provide colleagues with better consumption choices. In 2023, we continued to promote the Green New Life Movement within the company, supporting green consumption actions through festivals, purchasing gift boxes, and organizing activities. We also integrated public welfare cooperation. The Welfare Committee negotiated relevant discounts with suppliers and provided ordering methods, ensuring the sourcing of raw materials, examining eco-friendly products, and selecting talents. This provided colleagues with better consumption choices, supported friendly small farmers and fair trade, enhanced the health of employees and their families, and promoted a better environment and society.



Green Consumption and Fair Trade Help Protect the 3% Habitats of Taiwan

CTCI through the "Green New Life Movement," called on employees to support fair trade through green consumption. It also collaborated with ecological fair trade coffee and related products for public welfare. In 2023, it continued to donate 10% of the amount spent by colleagues at the public welfare store to the Taiwan Environmental Information Association, aiming to protect 3% of Taiwan's habitats to preserve biodiversity.

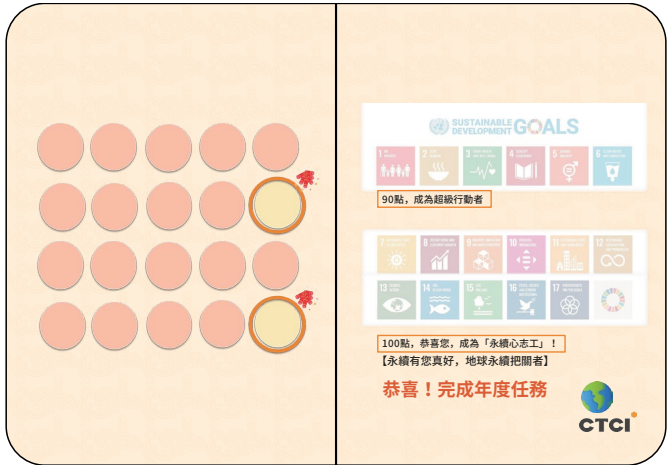
To express gratitude to the ESG work Team of the Group, in late 2023, the "2021 Social Enterprise – Lucky plum Chinese New Year Gift Box"was given for the year-end gifts (made from natural non-toxic green plums). The purchased for a total of NT$30,800, not only support green consumption actions, but hope colleagues in the group can also support sustainability through consumption in their daily lives, join hands in protecting the environment, and demonstrate the determination and commitment to sustainable development of the earth.

Participate in volunteer service Become guardians of Earth's sustainability

To encourage colleagues to participate in various environmental protection and social welfare activities for their physical and mental well-being and to promote social engagement, in July 2023, the "CTCI Group Volunteer Hours Recognition Measures" were officially issued. This encourages colleagues to participate in unpaid volunteer activities. All employees of CTCI Group are eligible, allowing the company to engage in social welfare activities on behalf of the company. The areas of participation include public welfare and charity, environmental protection, community service, and sustainable actions, totaling four categories.

Additionally, an exclusive online CTCI Group Volunteer Passport and point reward mechanism were launched for employees. Service hours are accumulated and recorded on the CTCI Group Volunteer Online Passport platform, aiming to reduce paper-based administrative procedures and achieve energy-saving and carbon reduction benefits.

In 2023, a total of 341 CTCI Group Volunteer Passports were issued, with a cumulative volunteer service hours reaching 1,892.5 hours.



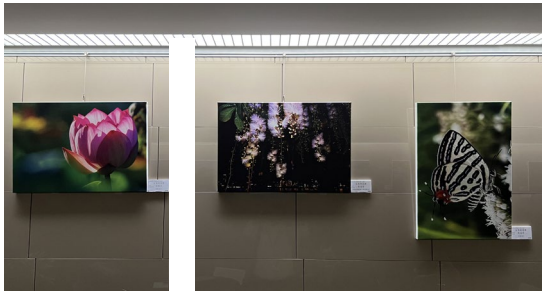
Club Partners Sustainability Together

The "Faith, Hope, Love Club" organized two sessions of Chinese classes in March and July 2023. During the first session's graduation ceremony, a special Dragon Boat Festival event was held, allowing foreign employees to understand the origin of the festival, enjoy ice dumplings, and participate in egg balancing activities.

In December, the society hosted the first "Indonesian Night," which was well-received by colleagues. Through warm food and familiar language, Indonesian colleagues felt the warmth of home. The event was primarily conducted in Indonesian, with English as a supplementary language. It featured sharing Taiwanese winter solstice festival dishes like tangyuan, ordering Indonesian dishes from Indonesian wives in Taiwan, and preparing Indonesian seafood fried noodles from an Indonesian noodle shop owner. Ice-breaking games and quizzes were also designed to create a fun and cheerful atmosphere, bringing warmth to Indonesian colleagues. The event also considered ESG principles by reducing the use of plastic utensils.



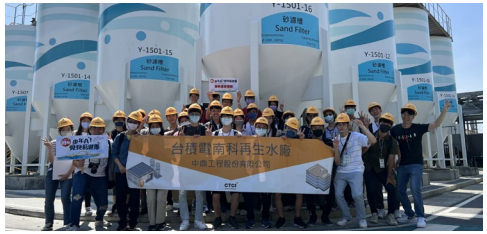
Photography Club: In August, September, and December, the club organized a series of lunchtime ecology seminars to help colleagues understand ecological photography and bird behaviors. The club specially arranged ecology seminars with topics including "What are Birds," "Introduction to Wildlife Ecology Photography," and "The Beauty of Stream Ecology Through the Lens," guiding everyone to understand our living environment through the lens of photography and fostering ecological awareness. Additionally, an ecological special prize was set up in the annual photography competition to encourage colleagues to capture the beauty of ecology.



Environmental education and social participation case studies

TSMC Tainan Science Park Wastewater Recycling Plant Project：

- The TSMC Tainan Science Park Wastewater Recycling Plant, the world's first industrial wastewater recycling plant for semiconductor processes, is located in Shanhua District, Tainan City. It was commissioned by TSMC and invested in, designed, built, and operated by CTCI for 20 years (Design, Build, Own, and Operation, DBOO). It officially commenced operations in September 2022 and obtained environmental education facility certification in December 2023, providing free environmental education programs.
- Visit outcomes: In 2023, there were a total of 16 sessions with 414 visitors. Visiting units included the Ministry of Economic Affairs, Ministry of Science and Technology, Water Resources Agency, National Science and Technology Center for Disaster Reduction, United States Environmental Protection Agency, International Water Association, etc. These visits aimed to exchange and share experiences in design and technology related to the TSMC Tainan Science Park Wastewater Recycling Plant. This initiative is linked to SDG 11 and 17, promoting interaction between public sectors and private enterprises.
- Environmental education courses: In 2023, a total of 30 sessions were conducted with 718 students and 143 teachers participating. Free environmental education courses were provided to students and teachers from domestic and international schools, emphasizing education on recycled water resources. This initiative is aligned with SDGs 4, 11, and 17. It serves as the preferred environmental education facility for recycled water resources, promoting interdisciplinary research and teaching development among school teachers and students. It also establishes interactive modes with local authorities.





Fengshan River Reclaimed Water Resource Center：

- **Environmental Education Program:** In 2023, a total of 26 sessions were conducted, with 839 students and teachers participating. Free environmental education programs were provided to the public elder then 13 years old, focusing on education about recycled water resources.
- **Sponsoring Community Events:** The neighborhood community held classes in the Water Technology Education Hall meeting room a total of 20 times. Sponsorship for neighborhood community events was provided for a total of 11 occasions.
- **Co-organizing Sustainable-related Events:** This includes participation in Smart City exhibitions, the 9th International Water Association Asia-Pacific Regional Exhibition, setting up booths at the Environmental Protection Bureau's World Earth Day Science and Technology Museum, and signing ceremonies for the Environmental Education Partnership Alliance.



Environmental education and social participation case studies

Coastal Water Resources Center:

- **Environmental Education Programs:** In 2023, a total of 10 sessions were held with 394 students and teachers participating. Free environmental education programs were provided to the public elder then 13 years old , focusing on education about recycled water resources.
- **Sponsoring Community Events:** A total of 38 events were sponsored, including co-organizing community policy promotion and environmental maintenance and cleaning activities.
- **Assisting in Event Organization:** A total of 5 events were assisted, including participation in the 2023 Smart City Forum and Exhibition and seminars organized by the Construction and Planning Agency.

Sunpower Power Project:

To care for rural students and promote sustainable education, CTCI donated 600,000 NT dollars to Shan-Shang Elementary School in Tainan City on November 27, 2023, to support after-school care expenses. CTCI is committed to giving back to the local community, helping local residents and students, and contributing to the cultivation of national talent

Support charitable organizations to create resource sharing

• CTCI has been working with Children Are Us Foundation to hold charity sales for many years

CTCI has been working with Children Are Us Foundation to hold "Children Are Us Foundation Bread Charity Sale" every two weeks, and prioritize its products for food and gift purchase in important festivals, new year greetings, and big events, with the total purchasing amount reaching nearly NT$175,000 in 2023. Meanwhile, our colleagues voluntarily initiate group buying of products made by other charities irregularly, including The Garden of Hope Foundation and Syin-Lu Social Welfare Foundation to support them. CTCI works together with its employees to promote "company-wide ESG" and deepen the "sustainable DNA."


• Carrying on with the "Your Old Computer, His New Hope" Donation Program

CTCI has been supporting the Taiwan Triple-E Institute for many years by participating in the "Your Old Computer, His New Hope" program. By 2023, we have cumulatively donated 1,582 computers and related information equipment. This year, CTCI expanded the donation by including old conputers from collegues, collecting a total of 7 computers and 7 screens. After being sorted, assembled, and refurbished, these computers were donated to low-income households in rural areas or social welfare groups, reducing the urban-rural digital gap and expanding our social impact.

• Sunshine Foundation: Sustaining Love and Sunshine

Book Donation and Exchange, Spreading Love and Sunshine Activity:

Continuing the ESG Award-winning proposal in 2022, in 2023, colleagues from domestic companies within the Group (including CTCI Corporation, CTCI Chemical Corporation, CTCI MAC, Group Intelligent Solutions Business, and Group Resource Cycling Business) collectively participated in the "Book Donation and Exchange, Spreading Love and Sunshine" activity. This time, the Group donated a total of 750 books to the Sunshine Social Welfare Foundation, spreading the warmth of knowledge to society, exerting influence, and becoming a guardian of sustainable Earth!



Support charitable organizations to create resource sharing

• Christmas Gift Sustainable Love Campaign by Sunshine Foundation and CTCI Group

This campaign continued the spirit of Sunshine Social Welfare Foundation's book donation activity and responded to the advocacy for facial equality in maintaining dignity and human rights of people who are facially-disfigured, burned, and have cancer. In celebration of Christmas to spread love to families in need and fulfill children's wish lists, the Christimas gift sustainable love campaign was held at the end of the year, delivering warmth to every corner of Taiwan and spreading the power of happiness and warmth!

• Collecting and donating invoices to Genesis Social Welfare Foundation

Collaborating with Genesis Foundation to assist the underprivileged and provide support to those in need, CTCI introduced online electronic invoices donation in 2023. In total, over 2,000 paper invoices were donated.

• CTCI is the first enterprise to join Carrefour's "Food Bank" program, also the first in launching a corporate collaborative public welfare online platform.

CTCI joined Carrefour Foundation's "Food Bank" fundraising program in 2020, and is the first enterprise to be invited by the foundation to set up "Carrefour Food Collection Station" in the office. The food collection box is located in the first headquarter building of CTCI that achieved great results. CTCI also calls on employees to take actions to support charitable activities in different festivals and holidays.

In 2023, "CTCI Group Food Collection and Love Transmission Project" was launched, which is the first corporate collaborative public welfare platform. Colleagues can easily engage in philanthropy through EIP system and "myCTCI" mobile app. The Taiwan Food Bank Association gathers and distributes supplies to help families in need, spreading love without borders to every corner. Additionally, in times of emergency, relief efforts are activated, and supplies are delivered worldwide by Tzu Chi Foundation, allowing love to endure.

Support charitable organizations to create resource sharing

- **Donating supplies to villages**

CTCI Group purchased "village safety boxes" and donated them to Huashan Social Welfare Foundation and Taiwan Fund for Children and Families. In 2023, a total of 27 safety boxes and 47 boxes of cookies were donated to Taiwan Fund for Children and Families.

- **Support Syin-Lu Social Welfare Foundation to provide job opportunities**

CTCI handed over the cleaning of employee dormitory to Syin-Lu Social Welfare Foundation, enabling people with disabilities to find their place and in society with value.

Promote sports development

- CTCI Group holds sports events every two years to promote a culture of exercise among employees, boost team morale, and strengthen cohesion. In 2023, the CTCI Group Sports Day, themed "Break the Limit. Together," was grandly held on October 21 at the National Taiwan University Sports Center. Over 3,000 participants, including executives from CTCI Group's domestic and overseas companies, colleagues from CTCI, and domestic affiliates, as well as their family members, came together to showcase their passion and vitality. In addition to the tug-of-war competition, which showcased teamwork, this year's event also highlighted CTCI's mission as "a Guardian of Sustainable Earth." The activities featured eco-friendly elements such as the use of paperless electronic passports, trophies made from recycled materials, and various fun contests centered around environmental issues, including "Carbon Reduction Battle" and "The Revival of Reclaimed Water." The event also featured a green charity market that invited vendors promoting the green liftstyle movement, where participants enthusiastically practiced green consumption and demonstrated ESG (Environmental, Social, and Governance) spirit.

Promote art and culture development

- CTCI has a total of 20 clubs. In addition to providing subsidies for each club's activities annually, evaluations are held at the end of the year, and subsidies of varying amounts are awarded based on employee votes. Activities organized by non-sports clubs include regular courses, lectures, performances, and cultural appreciation events, such as various instrument classes, painting and calligraphy classes, and public performances by the Philharmonic club in the community or at the national concert hall. Additionally, club subsidies are used to purchase cultural event tickets, spreading cultural influence to all employees and promoting educational and cultural development.
- CTCI is a long-time supporter of “Zhishan Splendor - Shilin Cultural Festival,” promoting music, humanities and arts. It also helps unify the cultural elites in the region of Tianmu and Shilin to jointly promote the regional cultural development.

Industry-Academia cooperation projects and provide internships to students

- CTCI combines the knowledge of senior engineers and senior executives within the company to serve as lecturers in engineering departments of various universities, sharing engineering practices with the academic community, and providing visits and internship opportunities for engineering-related departments and university students interested in engineering, thereby bridging the gap between the industry and the academia. CTCI hopes to cultivate and award outstanding talents through education. In 2023, 38 events have been held, with a total of 2,720 students participating.
- In 2023, the industry-academia cooperation project was with Zheng Sheng University of Science and Technology to develop innovative techniques for internal inspection and cleaning of pipelines. This collaboration involved the development of internal pipeline cleaning robots capable of deep inspection and image recording within the pipelines. These robots are also equipped with the function of local cleaning and foreign object retrieval. It is expected that they will provide more precise data interpretation compared to traditional methods, serving as important reference indicators for maintenance, upkeep, or process calibration judgments.

CTCI Education Foundation

Established in 2016, CTCI Education Foundation has a vision for Integrating UN 2030 SDGs with sustainable engineering and Taiwan's sustainable development. There are five committees under the CTCI Education Foundation: Academic Cooperation Committee, Sustainable Engineering Committee, Cross-Strait Exchange Committee, International Exchange Committee, and Social Care Committee. These five committees help the foundation operate towards its main directions, with a secretariat to organize operations and integrate different resources. The foundation's goals are to improve the value of Taiwan's engineering industry chain, to organize events for promoting sustainable development education, to educate domestic and international students and the general public, so that the sustainable development principals can be deeply rooted in Taiwan and be able to connect with the international standards.

Key Milestones for CTCI EF

2017	2018	2019	2020	2021	2022	2023
17 projects 43 events 4,020 participants 75 participating units	17 projects 92 events 8,087 participants 102 participating units	16 projects 102 events 9,774 participants 113 participating units	24 projects 172 events 9,175 participants 89 participating units	18 projects 122 events 11,502 participants 63 participating units	19 projects 155 events 10,468 participants 102 participating units	19 projects 164 events 11,587 participants 90 participating units

Company-wide Engagement to Sustainability and Integrate it Into the Core Business

Little Engineers Summer Camp

In order to enhance the professional knowledge and ability of elementary school students in the field of environmental sustainability and engineering, and build their independent learning ability, the camp team held a tour on sustainable lives, environmental education, and engineering workplace. The students play SDGs board games, take 3D printing courses and creative DIY in engineering to learn more about environmental sustainability. We combined sustainability and engineering at the camp to nurture future elites in sustainable development and engineering.

Co-organized by CTCI Group ESG Office

1 event | **70** participants | **31** schools registered

CTCI ESG Program 2.0

This plan integrates and analyzes businesses, strategies, operations, and performance of sustainable operation promotion in top domestic and international engineering companies by developing strategic milestones in data collection, brainstorming meetings, expert consultation seminars with top international engineering companies, ESG sustainable engineering workshops for CTCI's long-term ESG development.

Co-organized by CTCI Group ESG Office

3 event | **187** participants (Physical activities are parallel to online activities)

2023 CTCI Group ESG Award Event

In line with the spirit of ESG for all employees and the practice of net-zero EPC, CTCI Group continued the goal axis of last year's ESG Award to hold dual themes: " CTCI Group Climate Action" and " CTCI Group Social Impact" call for entries to actively implement sustainable actions , to become the gatekeeper for the sustainability of the earth, and encourage all colleagues to make concrete contributions to the sustainability of the earth. The sub-topics of this dual-theme content selected and concentrated each of the three major issues. The sub-topics of the Climate Action Award "Net Zero EPC, Circular Economy, Biodiversity"; Public Welfare Concern", all colleagues at home and abroad of CTCI Group are welcome to brainstorm and work together for sustainable development. Hope that lots of employees participate in 2023 CTCI Group ESG Award event.

Co-organized by CTCI Group ESG Office

64 entries

12 admissions

2 event

88 participants

Little Engineers Summer Camp

Little Engineers Summer Camp

CTCI ESG Program 2.0

CTCI ESG Program 2.0

2023 CTCI Group ESG Award

2023 CTCI Group ESG Award

Strengthen Sustainable Education and Cultivate Sustainable Talents

Scholarship programs

Diversified competitions and projects such as the "Youth Sustainability Innovation Program," "SDGS Academic Research Paper Award," and "The Living Lab Award" were held. Held the "Taiwan in My Eyes 120 Hours" competition project activity and academic paper selection to provide "CTCI Scholarship" to outstanding young students with different levels of evaluation results to promote corporate social responsibility through sustainable education. Provided "CTCI Scholarship" and demonstrate our image as the most trusted brand, and strengthen the public's knowledge in corporate sustainability (CS), and corporate social responsibility (CSR).

Co-organized by Taiwan Institute for Sustainable Energy (TAISE) and the Taiwan Academy of Corporate

3 topics | **151** winners

2023 Teachers' Training Camp for Sustainable Development Goals

We invited excellent lecturers in the "Sustainable Teaching Practice and Achievement Competition" and professors who use our books in their courses to provide ideas. We hope to work with more professors to promote sustainable development education, propose good teaching plans and apply SDGs to school courses in various fields to make sustainability part of our education. Participants: College teachers

Co-organized by Taiwan Institute for Sustainable Energy (TAISE) and the Taiwan Academy of Corporate Sustainability

2 event | **676** participants (Physical activities are parallel to online activities)

ESDG Links with the World for the Future - Proposal for School-based Curriculum on Sustainable Development, 2023

In order to strengthen our educators' understanding of sustainable development education (ESD) and achieve the United Nations Sustainable Development Goals (SDGs) in line with the lastest international trends (ESD+SDG=ESDG), we designed school-based curriculum that best demonstrated the advantages of our courses. The activity brought the teachers' attention to the characteristics and standards of ESD, and applied SDGs into school based curriculum to address global and local concerns for sustainable development. Participants: Elementary, middle and high school teachers.

Co-organized by Taiwan Institute for Sustainable Energy (TAISE) and the Taiwan Academy of Corporate Sustainability

4 Sessions | **196** registrants | **82** registrants selected | **431** participants

2023 Living Lab Awards (Conducted across years)

The concept of Living Lab is to bring the experimental environment of the laboratory into real-life scenarios through perception, prototype, verification, and improvement of various complex solutions in a diverse and evolving environment. It is hoped that this can solve sustainable issues across campus, the society, nations, and the whole world. Through communication, teachers and students are encouraged to apply relevant knowledge and capabilities to the promotion and experiments of sustainable development. To achieve global carbon reduction goals, we encouraged the participating teams to propose strategies for our net zero goals. We set up the "Sustainability and Net Zero Award" to recognize the team whose project had the highest correlation to the subject of the competition. Participants: College students.

Co-organized with the Taiwan Institute for Sustainable Energy

3 Sessions | **248** registrants | **80** registrants selected | **286** participants

The 8th SDGs Academic Paper Award, 2023

To allow practitioners in high education to better understand SDGs and CSR values, the 8th SDGs Academic Paper Award encourages them to engage more in sustainable development. Based on previous experiences, the award was conducted on three major aspects, "environment," "social," and "governance" this time, sharing the global trends of sustainable development. It was hoped to expand the participants' global views and cultivate diverse thinking skills. Our mission is to "build top businesses, lead the society, and pass on the torch of sustainability," hoping to drive more research on forward looking and inspirational ESG issues.

A total of 127 papers entered the competition this year, and 111 papers were qualified after book review. The CTCI Group Academic Exchange Scholarship sponsored a total of 9 students in the master's group, 6 in the doctoral group, and 3 in the enterprise group, with a total bonus of 360,000 NT.

Academy of Corporate Sustainability (TACS), Taiwan Institute for Sustainable Energy (TAISE) Implemented by: Center for Corporate Sustainability

127

papers entering the final selection stage

18

papers won the award

360,000

NT scholarships

Scholarship programs

2023 Teachers' Training Camp for Sustainable Development Goals

2023 Living Lab Awards

The 8th SDGs Academic Paper Award, 2023

ESDG Links with the World for the Future - Proposal for School-based Curriculum on Sustainable Development, 2023

Follow Global Trends and Expand International Horizons

2023 The 9th Taiwan in my eyes 120h — SDGs Festival

The event involves long-term team-style participation over five days of activities, during which students from colleges and universities will visit several benchmarking enterprises in their sustainability efforts, including the CTCI Group, Taipei Fubon Bank e-Family Branch, Miaoli Green Dream Factory, TSMC Southern Taiwan Science Park Reclaimed Water Plant(CTCI Water-Green-Energy Reclamation Center), and Taiwan Sugar Dong Hai Feng Agricultural Circulation Park. This year, 25 teams from 16 colleges and universities from 25 countries sign up, and 12 teams with a total of 48 people (including students from 12 schools and 21 countries) were selected in the final round. During the event, there will be a lot of free time for students to freely explore Taiwan's sustainability dimensions that interest them and shoot videos.

From 2017 to 2023, the event has been held for 9 times with a total of 560 domestic and foreign graduate students from 41 universities and 68 countries participating, visiting Taiwan and cultivating international thinking.

Co-organizer: CTCI EF, with the Taiwan Center for Corporate Sustainability and five TCCS member companies.

6 Sessions | **100** Participants | **12** teams

25 countries | A total of **68** countries have participated since 2017

2023 6th Global Corporate Sustainability Forum (GCSF)

As global governments and industries sectors actively respond to the United Nations Sustainable Development Goals (SDGs) and the Paris Agreement, commitments have been made in promote responsible investment and sustainable development. In response, the Global Corporate Sustainability Forum, Asia's largest forum on sustainability, connects academic research with the latest trends in Taiwan across various sectors while fostering interaction within the global community. This allows participants to enhance their awareness of international SDGs and CSR trends, implement sustainable development practices, and seize business opportunities at a global level.

For highlights of relevant implementation results of the forum, co-organizers, sponsors and cooperating units, please refer to the following link.

General planning:Alliance for Sustainable Development Goals (A· SDGs)
Advisors: Ministry of Foreign Affairs, Ministry of Economic Affairs
Organizer:Taiwan Institute for Sustainable Energy, CTCI EF

4,721 Participants (Including online participants) | **22** workshops

2 Award ceremonies | **46** cooperating units

2023 7th International Conference on Integrated and Innovation Solutions for a Circular Economy

In order to promote the sustainable strategy of Taiwan's circular economy and drive the development of related industries, this conference invited domestic and foreign experts and scholars to share information on practical methods of circular economy in various countries and the latest research results. This year's topics focus on three main categories of Net Zero Circular Economy, Digital Transformation and Sustainable Supply Chain Management.

The event was conducted in the form of an international and roundtable seminar. The on-site seminar along with on-line sessions attracted more than 350 representatives and opinion leaders from industry, government, academia and research to participate. Scholars and industry professionals from 13 countries and regions, including the United States, the Netherlands, Germany, Japan, South Korea, China, Hong Kong, India, Iran, Thailand, Malaysia, Vietnam and Taiwan gather to deliver lectures both onsite and online. The roundtable forum is an invitation-only event that invites relevant personnel from industry, government and academia to conduct discussions and put forward suggestions as reference materials for government policy.

Co-organizer: CTCIEF, National Tsing Hua University, National Taiwan University
Advisor: Alliance for Sustainable Development Goals(A· SDGs)

3 Sessions

343 Participants
(Some sessions were held both on-site and online)

2023 Taiwan Sustainability Engineering Symposium:Co-creating ESG Influence in the Value Chain(with breakout sessions)

Through sharing sustainability relevant information and CTCI's excellent results , the participants of this symposium build consensus through multi-party discussions and drive the industry's sustainable common good.

As the partnerships of the participants are built upon the SDGs, CTCI can drive the supply chain toward a better future. The event invites well-known experts and scholars in the engineering field, as well as industry leaders, to participate. Colleagues from the CTCI Group and others concerned about these issues are also welcome to attend and discuss matters related to sustainable development and net-zero carbon emissions.

The symposium focuses on key topics such as "Green Engineering", "Sustainable Governance" and "Supply Chain Decarburization ", and explores how to promote global sustainable development through the engineering profession.

Organizer: CTCIEF and the CTCI Sustainability & Net Zero Office

2 Sessions

568 Participants
(Some sessions were held both on-site and online)

Publications

By publishing four volumes of educational reference books titled Goals for Sustainable Development, Concept and Practices for Sustainable Industries, Practicing Circular Economy: Striving for the Sustainable Development Goals, and Education for Sustainable Development , CTCIEF hopes that readers can better understand the trends in sustainable development and SDGs practices. CTCIEF aims to raise awareness of sustainable development across various industries while elaborating on the meaning of sustainable education and how it helps promote sustainable development. This year, the second through fourth volumes will also be published e-books, allowing more readers to access the books.

Scan QRcode for the Anniversary Issue

CTCIEF

Three volumes of e-books

One Anniversary Issue

University USR X SDGs Weekly Newsletter

The university campus is an important base for sustainable development. To gain insight into domestic and international trends, share sustainable strategies and achievements of various universities and promote sustainable campus activities, the "University Sustainable USR x SDGs" weekly newsletter has been issued since April 2020. In addition to sharing the latest international and domestic educational topics and sustainable trends on campus, the newsletter also provides first-hand information on sustainability trends both domestically and internationally, expanding readers' perspectives and providing analysis, it strives to be an excellent provider of sustainability news and information.

Publisher: CTCIEF, Taiwan Institute for Sustainable Energy, Taiwan Center for Corporate Sustainability

53
Issues of Newsletter

5,350
Subscriptions

2023 The 9th Taiwan in my eyes 120h — SDGs Festival


2023 6th Global Corporate Sustainability Forum (GCSF)


2023 7th International Conference on Integrated and Innovation Solutions for a Circular Economy


2023 Taiwan Sustainability Engineering Symposium: Co-creating ESG Influence in the Value Chain (with breakout sessions)

Publications

CTCIEF Newsletter

Advocate Sustainable Value, Create a Cross-Sector Platform

2023 SDG Asia

The 2023 SDG Asia event was held at the Taipei World Trade Center from July 21 to 24. The booth, jointly set up in the NGO exhibition area by CTCIEF and other co-organizers, attracted a total of 1,000 participants over the three-day event. The theme of the booth echoed Taiwan's 2050 net-zero goals and pathways, focusing on "Towards a Net Zero Future" with the hope of assisting Taiwan's social development and fostering industry-academia cooperation.

The booth engages visitors through activities and displays such as a tour of the foundation's memorabilia, an SDG board game, a reading habits questionnaire, a Facebook fan page check-in, videos of previous activity results, an anniversary issue, trial reading of educational reference books, and more. CTCIEF also provides environmentally friendly giveaways to the public in support of sustainable practices.

Co-organizer:CTCIEF, the CTCI Group, Taiwan Institute for Sustainable Energy (TAISE)

3 Events

31,000 Participants

ECOVE Step by Step: Factories for Sustainable Environmental Education

Initiate diversified environmental education programs through collaboration with communities, schools, and various organizations. To engage students' interest, the 2023 curriculum mainly adopts "games" and "immersive experiences." In addition to demonstrating the incineration process through models, the program also uses DIY seed planting to teach students the importance of environmental protection and resource reuse. Furthermore, during the hands-on recycling activities, children are directly involved in sorting recyclable materials, with the team providing immediate corrections or pointing out recycling symbols on waste. This practical experience helps transform environmental slogans into daily actions.

Co-organizer: ECOVE Environmental Corp.

25 Sessions

25 Elementary schools

3,000 Participants

COP28

CTCIEF was recognized by the United Nations Framework Convention on Climate Change (UNFCCC) in 2022 and became the 11th observer of Taiwanese NGO organizations. In 2023, Ambassador-at-Large Eugene Chien, Chairman of CTCI EF lead a delegation and participated in the COP28, seizing the opportunity to enhance interaction with observers and government delegations around the world.

At the COP28 conference, Taiwan's Ministry of Economic Affairs invited CTCI's Chief Sustainability Officer to deliver a speech at one of Taiwan's allies, Palau's Pavilion, scheduled for December 8, aligned with Dubai time. The speech focused on how Taiwan promotes energy and industry transition, highlighting potential business opportunities in the green economy.

After COP28, two symposiums were held: the "3rd Taiwan Sustainability Engineering Symposium" and "Post COP28—What Does the First Global Stocktake Reveal?". During both events, COP28 delegates shared firsthand insights into the latest global trends with participants from various sectors. This enabled Taiwanese participants to remain up-to-date on global developments, empowering them to proactively engage in climate action and fostering discussions on supply chain cooperation to create a more influential and sustainable supply chain.

Organizer: by CTCIEF and the Sustainability & Net Zero Office

1 Session – A sharing opportunity at the Palau Pavilion

8 engaging representatives as an Observe Organization(Including 6 on-site engagement access and 2 virtual engagement access)

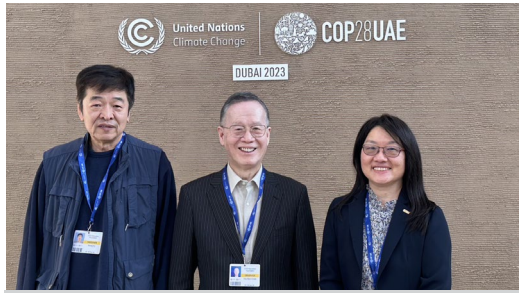
82 given speech regarding the COP28 experience

Nearly **2,400** participants (both on-site and online)

2023 SDG Asia

2023 SDG Asia

ECOVE Step by Step: Factories for Sustainable Environmental Education



COP 28

COP 28

Column

Debuting as an Observer: Insights from Attending COP28 Climate Conference

Taiwan's non-governmental organizations (NGOs) have been actively participating in global climate-related summits. The CTCI Education Foundation (CTCIEF), founded by CTCI, has been dedicated to the promotion of sustainability, and its efforts have been acknowledged by the United Nations Framework Convention on Climate Change (UNFCCC), resulting in its recognition as the 11th NGO observer in Taiwan. This fully demonstrates the vital role that NGOs play in climate action.

In 2023, the CTCI Education Foundation (CTCIEF) was invited to the 28th session of the Conference of the Parties (COP28) to the UNFCCC held at Dubai Expo City. This time, CTCIEF not only participated as an observer but was also invited by Taiwan's Ministry of Economic Affairs to deliver a speech titled "Guardian of the Sustainable Earth: CTCI Group's Road to Sustainability and Net Zero." The speech was not delivered by the Chief Sustainability Officer (CSO) of the CTCI Group at the "Taiwan's Green Economy Development Experience" Symposium held at Palau's Pavilion on December 8th, aligned with Dubai time. During this session, CTCI shared with the world how it works alongside its clients and vendors toward a sustainable future, employing methods such as organizing global resources, promoting green technology and innovation, and integrating sustainability into CTCI's core business practices and daily operations.

On December 20th, CTCI's CSO was invited by the Taiwan Institute for Sustainable Energy (TAISE) to publicly share her experiences in participating in COP28 climate actions at the "Post COP28—What Does the First Global Stocktake Reveal?" Symposium. While sharing her observations, including the latest trends on various issues, on-site commitments, and climate actions, the CSO also explained how CTCI did not take practical actions in three key aspects: environmental, social, and governance (ESG). Lastly, the CSO concluded her speech with an array of inspiring slogans she observed onsite at COP28, and her personal takeaways can be summarized in three points: "speeding up", "new technology", and "systemic change". In the future, CTCI will continue to engage with its partners through its core business of Green Engineering and Innovation, with the aim of leading a systematic change.

CTCI's CSO, Joanne (first from the right) is invited to speak at the "Post COP28—What Does the First Global Stocktake Reveal?" Symposium

The Ministry of Economic Affairs held a forum on "Taiwan's Green Economic Development Experience" at the Palau National Pavilion, and CTCI was invited to give a speech.

CTCI participates in the 28th session of the Conference of the Parties (COP28) to the UNFCCC in 2023

CH3

Accountable Governance

CTCI has stayed true to its mission for stable organizational growth and sustainable corporate development, working hard to foster a transparent corporate governance culture and diverse board of directors in order to protect the interests of our shareholders. Through a robust risk management system, we have also been able to promote risk culture throughout CTCI and introduce risk management for information security to continue improving our operational capabilities.

For 9 Straight Years

Listed in DJSI Emerging Markets

Retained the highest score in the DJSI global construction & engineering industry

For 3 Straight Years

Ranked among the top 1% in the world in the S&P Global Sustainability Yearbook

8 times

CTCI scored 8 times top 5% of Corporate Governance Evaluation system

The Dedicated Office of Risk Management

Risk Management & Control Office was established in 2022

Corporate Governance

CTCI is committed to promoting a transparent, responsible and effective overseeing corporate governance system, and implementing the diversity and independence of board members. We are looking forward to inspiring visionary decisions to respond potential risks and challenges of the Company by integrating different views. CTCI has achieved the highest recognition, 8 times in the “Top 5% of the Corporate Governance Evaluation System” and 6 times in the “Top 10% of listed companies in the non-finance and non-electronics industry with a market value of TWD 10 billion.” The performance is highly recognized and making a leader in the listed companies and corporate governance.

Composition of Board of Directors

CTCI's Board of Directors is the Company's highest decision-making team. In addition to exercising the power granted by the Company Act, the Articles of Incorporation and resolution of the shareholders' meeting and supervising the management's policy implementation results, they also oversee sustainable development's plans and execution. According to the Articles of Incorporation, the Company shall have nine to thirteen directors (including independent directors), who shall be elected through the candidates nomination system for the term of three years. The number of independent directors shall be at least two and shall be no less than one-fifth of the total number of the directors.

Directors' Diversity

CTCI's "Corporate Governance Principles" demands that the Board composition should be diverse, and that appropriate policies should be formed with regard to the Board's operations, operating dynamics and development needs, which includes but is not limited to the following two major aspects. All members of the Board should possess necessary knowledge, skills, and experience to perform their duties. To achieve the ideal goal of corporate governance, the following eight types of abilities are what we expect the Board of Directors to have:

The Overall Response Ability of the Board of Directors

- Ability to make operational judgments.
- Ability to perform accounting and financial analysis.
- Ability to conduct management administration.
- Ability to conduct crisis management.
- Knowledge of the industry.
- An international market perspective.
- Ability to lead.
- Ability to make policy decisions.

Aspects of Directors' Diversity

- Basic profile and value: Gender, age, nationality and culture
- Professionalism and skills: Professional background (law, accounting, industry, finance, marketing or technology), professional skills, and industry experience.

According to corporate principles, among the board members of the Company, Chairman Michael Yang, Director John T. Yu, Director Quintin Wu, Director Johnny Shih, Director Yancey Hai, Director An-Ping Chang, Director Wenet Pan, and Director Paul Chen are all corporate managers of listed companies from different industries. These industries include engineering consultants, plastics, textiles, electronics, optoelectronics, and cement. These members not only excel at leadership, management, decision-making, and execution. They are also prominent leaders in their respective industries. As for the independent directors, we have, former Vice Chairman of Public Construction Commission Chien-Chung Li, former Minister of Economic Affairs Yen-Shiang Shih, qualified accountant Yi-Fang Chen and former Director General of Department of Foreign Exchange of Central Bank Harry Yen. These four members are either iconic figures from their respective industries, government, or academia. This allows CTCI to attain its goals of diversity and complementarity professionals to serve on its Board. The detail of the diversity composition of the Board of Directors has been disclosed on official website.

Structure of Board of Directors

CTCI has one-tier board. CTCI's 16th board of directors has 12 directors and their average duration which directors held office was 9.98 years. The Company have four independent directors, accounting for 33% of the total; ten non-executive directors, accounting for 83% of the total; and one female director and has achieved the goal of diversity policy of at least one female director. CTCI Chairman is also the member of Managing officer and serves as Vice Chairperson of Management Strategy Committee to quickly respond to various challenges.

CTCI Board of Directors

DATE：2024/03/31

Diversity / Director	Nationality	Gender	Employee	Independence Overview									Term (year)	Operation Management	Industry Knowledge	Risk Management	Finance/ Accounting/ Economics	Crisis Management	International Market Perspective	Leadership	Decision-making Skill	GICS Level 1
				1	2	3	4	5	6	7	8	9										
Chairman Michael Yang (Note 2)	Republic of China	Male	√				√	√			√	√	8.1	√	Construction Consultant	√		√	√	√	√	Industrials
John T. Yu (Note 2)	Republic of China	Male					√	√			√	√	25.2	√	Construction Consultant	√		√	√	√	√	Industrials
Director Quintin Wu	Republic of China	Male		√	√	√	√	√	√	√	√	√	17.8	√	Plastics Industry / Petrochemical Industry	√		√	√	√	√	Materials
Director Johnny Shih	Republic of China	Male		√	√	√	√	√	√	√	√	√	13.1	√	Textile / Banking Industry	√	√	√	√	√	√	Industrials
Director Yancey Hai	Republic of China/ USA	Male		√	√	√	√	√	√	√	√	√	22.2	√	Electronics / Banking Industry	√	√	√	√	√	√	Industrials
Director An-Ping Chang (Note 2)	Republic of China	Male		√	√	√	√	√	√	√	√	√	6.8	√	Cement Industry / Investment M&A	√	√	√	√	√	√	Materials
Director Paul Chen (Note 2)	Republic of China	Male		√	√	√	√	√	√	√	√	√	4.2	√	Petrochemical Industry	√		√	√	√	√	Industrials
Director Wenent Pan	Republic of China	Male		√	√	√	√	√	√	√	√	√	10.1	√	Petrochemical Industry / Optoelectronics Industry	√		√	√	√	√	Industrials
Independent Director Chien-Chung Li	Republic of China	Male		√	√	√	√	√	√	√	√	√	0.8	√	Construction Consultant	√		√	√	√	√	Industrials
Independent Director Yen-Shiang Shih	Republic of China	Male		√	√	√	√	√	√	√	√	√	6.8	√	Engineering Consultant /Industrial Economics	√	√	√	√	√	√	Industrials
Independent Director Yi-Fang Chen	Republic of China	Female		√	√	√	√	√	√	√	√	√	3.8		Manufacturing Industry	√	√	√	√	√	√	Industrials
Independent Director Harry Yen	Republic of China	Male		√	√	√	√	√	√	√	√	√	0.8	√	International Finance	√	√	√	√	√	√	Financials

Note 1: The Company re-elected all members of the 16th Board of Directors on May 31, 2023.
Note 2: Representative of the juristic-person director.
Note 3: There are 9 Key Definitions Independent directors: are non- executive directors that are independent by meeting at least 4 of the 9 criteria (of which at least 2 of the 3 first criteria) listed below:
1. The director must not have been employed by the company in an executive capacity within the last year.
2. The director must not accept or have a "Family Member who accepts any payments from the company or any parent or subsidiary of the company in excess of $60,000 during the current fiscal year", other than those permitted by SEC Rule 4200 Definitions, including i) payments arising solely from investments in the company's securities; or ii) payments under non-discretionary charitable contribution matching programs. Payments that do not meet these two criteria are disallowed.
3. The director must not be a "Family Member of an individual who is [...] employed by the company or by any parent or subsidiary of the company as an executive officer."
4. The director must not be (and must not be affiliated with a company that is) an adviser or consultant to the company or a member of the company's senior management.
5. The director must not be affiliated with a significant customer or supplier of the company.
6. The director must have no personal services contract(s) with the company or be a member of the company's senior management.
7. The director must not be affiliated with a not-for-profit entity that receives significant contributions from the company.
8. The director must not have been a partner or employee of the Company's outside auditor during the past year.
9. The director must not have any other conflict of interest that the board itself determines to not be considered independent.

Note 4: For Directors' part-time jobs and further studies, please refer to page 16 to page 20 and page 121 to page 123 of the Company's 2023 annual report.
In 2023, our directors spent an average of 8.5 hours in further studies.

Avoiding Conflict of Interest

To archive the supervision and balance effectively, CTCI Board follows principles of integrity and avoiding conflict of interests, and has adopted " Rules Governing Procedure for Board of Directors' Meetings " to define the system of avoiding conflict of interest. Whenever a meeting proposal involves a board member, his/her spouse, a blood relative within the second degree of kinship, or any company which has a controlling or subordinated relation, he/she shall recuse himself/herself to exercise voting rights on that matter. Board members' attendance status, avoiding conflict of interest, directors' part-time jobs and major shareholders status, please refer to page 16 to page 20, page 50 to page 53 and page 148 to page 150.

Rules Governing Procedure for Board of Directors' Meetings

The Operation of Board of Directors

The Board shall convene a meeting at least once every quarter. As of the end of 2023, the average attendance rate of Board Meetings was 88.89%. In order to effectively supervise the Company's operations and risks, CTCI Board has established four functional committees "Audit Committee," "Remuneration Committee," "Nominating Committee" and "ESG & Net Zero Committee." That could enhance the quality and efficiency of decision-making as well as to strengthen sustainable development.

ESG & Net Zero Committee

Convener: Chien-Chung Li [Note 1]

Committee members: Yancey Hai, Michael Yang

One meeting was held during 2023 and the first quarter of 2024, and the attendance rate was 100%.

The Company voluntarily created the ESG Committee in 2020 and renamed to"ESG & Net Zero Committee" in 2021 to formulate the Company's sustainable and net zero development policies, including its sustainable governance, integrity management, environmental and social goals, strategies and implementation plans, and to pay attention to the concerns of all stakeholders. The committee is also responsible for supervising the review, tracking, and revision of the implementation process and to evaluate its effectiveness.

Audit Committee

Convener: Yen-Shiang Shih

Committee Member: Chien-Chung Li[Note 1], Yi-Fang Chen, Harry Yen[Note 2]

Six meetings were held during 2023 and the first quarter of 2024, and the attendance rate was 100%.

The Audit Committee was created voluntarily in 2014 to strengthen the function of supervision of the operations of the Board of Directors, to supervise the Company's financial statements, manage elections (and dismissals), to maintain independence and high performance of the certified public accountants, to effectively implement internal controls, compliance with relevant laws and regulations, and to manage existing or potential risks.

Remuneration Committee

Convener: Yi-Fang Chen

Committee member: Chien-Chung Li [Note 1], Yen-Shiang Shih, Harry Yen[Note 2]Three meetings were held during 2023 and the first quarter of 2024, and the attendance rate was 100%.

The Remuneration Committee, established in 2011, is responsible for a professional and objective evaluation of remuneration for directors and managers according to remuneration policies and structure. It is also entrusted with proposing recommendations to the Board to serve as reference during the decision-making process, thus leading the Company's financial status toward the overall benefits of the organization and bring positive impact to the Company's stringent execution of corporate governance.

Nominating Committee

Convener: Harry Yen[Note 2]

Committee member: John T. Yu, Yen-Shiang Shih, Yi-Fang Chen

Three meetings were held during 2023 and the first quarter of 2024, and the attendance rate was 100%.

CTCI voluntarily set up the Nominating Committee to consolidate the functions of the Board of Directors and strengthen its management mechanism at the end of 2016. Its main task is to plan the composition of the Board of Directors and functional committees, review qualification of directors and nominate candidates for directors, review the performance of the Board of Directors, and review succession plans for directors and managerial level.

Note 1: Newly-elected on March 31, 2023. He should attend ESG & Net Zero Committee once, Remuneration Committee twice and Audit Committee four times.
Note 2: Newly-elected on March 31, 2023. He should attend Nominating Committee twice, Remuneration Committee twice and Audit Committee four times.

To keep improving operation efficiency of the Board, there is "Regulations Governing the Board Performance Evaluation"(the “Regulation”) in place that evaluates the whole Board of Directors, individual directors and functional committees. Such internal board performance evaluation is carried out at least once a year and external board performance evaluation is carried out at least once every 3 years by an external independent professional institution or a panel of external experts and scholars. The “Regulation” was revised with the resolution of the board of directors on December 15, 2023, and “Participation in sustainable management (ESG)” was included in the evaluation indicators to strengthen the aspect of sustainable governance. The Board performance evaluations in 2023 were carried out at the beginning of 2024 by self-evaluation of individual Board members, the results of which showed that the board is operating well. As to external evaluation, the latest external evaluation is completed in June, 2021, and report to Nominating Committee and the Board of directors in November, 2021. We will arrange another external evaluation in 2024. Above results are considered by nominating the candidate of Directors. The report result has been disclosed on official website.

Regulations Governing the Board Performance Evaluation

Remuneration policy

The Remuneration Committee formulates and reviews the performance evaluation and remuneration policies of the Company's directors and managers on a regular basis. The remuneration policy, long-term incentives and payment standards for the Chairman (CEO) and all managerial officers are reviewed by the Remuneration Committee and submitted to the Board of Directors for approval. The remuneration to directors (including the Chairman (CEO)) is determined by the Board of Directors with reference to the standards of listed companies in the industry and their contribution, and the Company's operating performance (consolidated revenue, earnings per share, and return to shareholders). Managerial salaries are closely tied to the Company's operational results and performance. Each year, based on the Company's performance indicator scores and in reference to the compensation levels in the industry, the proposal for managerial remuneration is determined. For the details of the remuneration policy, standard, and combination of the Company, the association in setting remuneration, and the correlation with the business performance and future risk, please refer to of the 2023 CTCI Annual Report.

CTCI connects the CEO's and other senior executives' performance to sustainability targets in order to integrate the Company's operational goals with sustainability outcomes. Financial objectives include the "Green Engineering Contract Amount Achievement Rate,"(10%) while non-financial objectives include the "Environmental Protection (Incl. Net Zero Results)"(15%) and the "Net Zero EPC Achievement Rate."(10%)In addition, for the variable remuneration of the Chairman (CEO), the performance score is obtained by comparing the consolidated revenue, return on equity (ROE), and earnings per share (EPS) data for the current year with the values of the past 5 years. The basis for achieving the financial performance indicators. In 2023, CTCI's highest personal annual income is 23.35 times the median annual total remuneration of other employees, and the highest personal annual income growth rate is 1.35 times the median of other employees' annual total remuneration.

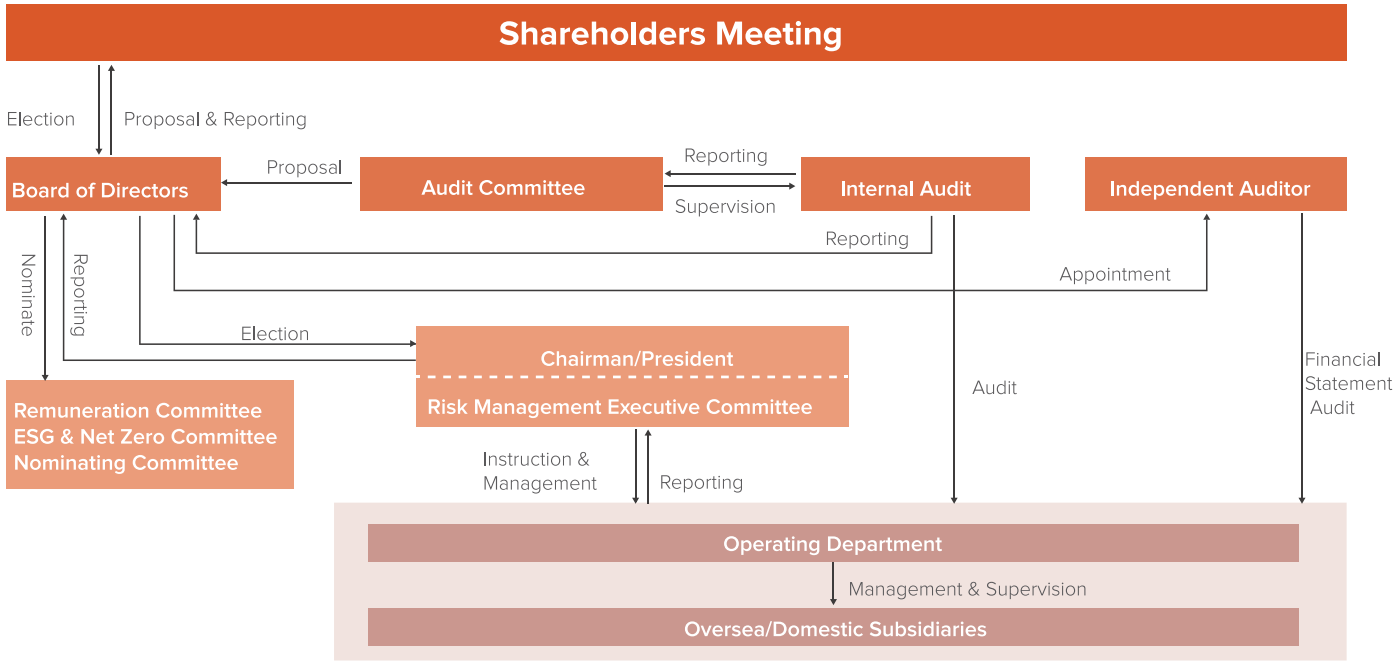
KPI Items		%	Corresponding to ESG material issues
Financial Goal 65%	Gross Profit Achievement Rate	50%	
	Contract Amount Achievement Rate	10%	
	Green Engineering Contract Amount Achievement Rate	10%	Net Zero EPC and Green Engineering
	Revenue Achievement Rate	20%	
	Operation (Proposal) Expense Saving	10%	
Non-Financial Goal 35%	Occupational Safety and Health/ Quality Work	25%	Safety and Health in Workplace
	Environmental Protection(Incl. Net Zero Results)	15%	Climate Strategy and Net Zero Implementation
	Project Key Position Readiness	20%	Career Development and Train
	External Customer Satisfaction	10%	Brand Management Customer Service and Management Social Influence Enhancement
	Talent Turnover Rate	10%	Talent Recruitment and Retention
	Net Zero EPC Achievement Rate	10%	Innovative Technology and Services Supply Chain Sustainable Management
	Risk Control and Management Rate	10%	

Internal Audit And Compliance

CTCI's internal control system is based on Financial Supervisory Committee's regulation, namely Regulations Governing Establishment of Internal Control Systems by Public Companies. Through the components of the control environment, risk assessment, control activities, information and communication, and monitoring activities carry out integrated control and assessment measures. Our internal control system is designed by managers, passed by the Board of Directors, and managed by the Board of Directors, managers and other employees. Its purpose is to promote the sound operation of the Company and to ensure the achievement of operational effectiveness and efficiency, as well as the reliability, timeliness, transparency of information reporting and compliance with relevant laws and regulations.

CTCI has the Audit Department, which is under the Board of Directors, and is staffed by dedicated chief audit executive and internal auditors. It assists the Board and managers in checking and reviewing the lack of internal control systems and measuring the effectiveness and efficiency of operations, and provides suggestions for improvement in a timely manner to ensure the continuous and effective implementation of the internal control system.

Chart of Corporate Governance & Internal Control



The Audit Department draws up an annual audit plan based on the risk assessment results yearly. After it is approved by the Board of Directors, the audit department implements audit operations in accordance with the annual audit plan, discloses the missing and abnormal items found in the internal control system in the audit report, traces them after the report is submitted, and compiles tracking reports at least quarterly until the issue is solved to ensure that the relevant units have taken appropriate improvement measures in a timely manner. In addition to the monthly report on the implementation results of the audit plan to the Independent Directors and communicating individually on internal control and audit related matters and responds to the independent Directors' inquiries at least quarterly, the chief audit executive also attends the Audit Committee and the Board meetings to submit an audit report to implement the audit results.

Since 2019, the CTCI Group has implemented a corporate compliance system to ensure compliance with applicable laws and regulations. The Company constantly monitors domestic and international policy and legal changes, develops a legal compliance self-assessment and testing system, and provides training and self-assessment testing to personnel involved in various business operations. This ensures compliance with applicable regulations and standards. Fines for environmental protection and occupational safety were reported in 2023. For details, please refer to the chapters on Environment and Energy Resources Management, and Safety and Health in Workplace.

Risk Management

In an environment where competition is fierce and changing rapidly, effective risk management can improve organizational resilience and promote sustainable development of enterprises. CTCI has implemented a strong risk governance framework and management process that includes stages such as risk identification, risk analysis, risk evaluation, risk response and treatment, residual risk evaluation, and improvement tracking. This framework enables the Company to implement risk-management strategies and measures such as prevention, reduction, transfer, or assumption when confronted with internal and external uncertainties. The goal is to increase risk awareness and tolerance while also strengthening competitive advantage and value creation capabilities.

Risk Management Framework

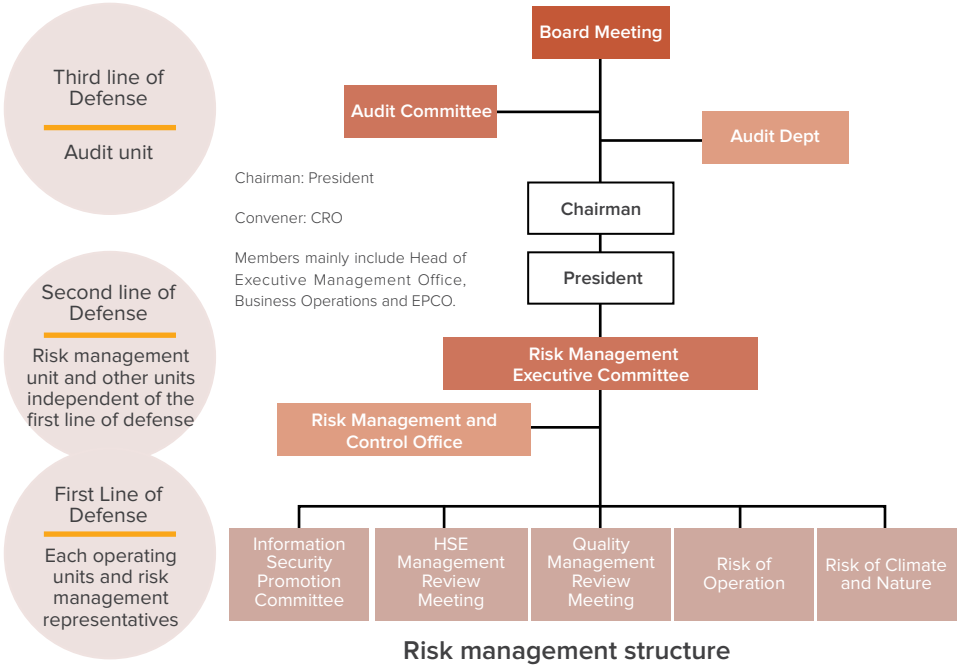
CTCI follows the COSO Enterprise Risk Management-Integrated Framework and ISO 31000 Risk Management framework and procedures to conduct comprehensive risk assessment and management, set risk management and control goals, and closely integrate risk management with the Company's goals to ensure the stability and sustainable development of business operations. The three-line of defense model of enterprise risk management is adopted. Each operating unit is responsible for grasping and managing risks in daily operations and implementing relevant risk control measures; the Risk Management Executive Committee is responsible for formulating relevant risk management standards, risk appetite, and supervising risk implementation to ensure the achievement of risk management objectives; and an independent audit unit is used to ensure the implementation of risk management policies.

Governance Structure

The Company's "Risk Management Policy" and "Risk Management Regulations", approved by the Audit Committee and Board of Directors in 2020, are the supreme guideline for risk management; in 2023, in response to the "Risk Management and Control Office" established on November 1, 2022 and the publication of 2023 The Taskforce on Nature-related Financial Disclosures (TNFD), the name of the "Climate Change Risks" was changed to "Climate and Nature Risks", the "Risk Management Regulations" has been revised and sent to the Board of Directors for approval.

The Board of Directors at CTCI is the highest governing body responsible for the Company's risk management. Among the board members, 6 non-executive directors have professional backgrounds in risk management. The Audit Committee, under the Board of Directors, supervises the risk management operations. Additionally, there is an Executive Risk Management Committee that reports the annual risk management performance to the Audit Committee each year. The 2023 risk management status has been reported to the Audit Committee and the Board of Directors on November 1, 2023.

Risk Management Organization, Roles and Responsibilities



Risk management structure

In terms of risk management operations and Implementation, each responsible unit is responsible for identifying, analyzing, evaluating, treatling and reporting risks related to its business. Each operating unit and its risk management representatives act as the first line of defense and is responsible for promoting, supervising and managing major risks, and to report major risks and related improvement plans.

The "Risk Management Executive Committee" is a supervisory role at the company level. The President serves as the chairman, the Chief Risk Officer serves as the convener, and the Head of the Executive Management Office, the Heads of each Business Operations, and the Head of EPCO serve as the committee members. Regular meetings are held once every six months. The committee's major responsibilities are to examine risk management policy, examine risk management report, strategy and improvement plan of the Company, supervise execution of risk control measure and improvement plan, and examine and assess the effectiveness of risk management measure and implementation of improvement plan.

To ensure the independence of risk management, CTCI has set up a dedicated risk supervision and control unit, the "Risk Management and Control Office ", which is responsible for promoting various risk management operations such as the establishment of a risk management mechanism and culture, participation in the treatment and prevention of emergency risk events. The Chief Risk Officer is responsible for communicating risk policies, establishing and promoting risk control systems, supervising the implementation of risk control, disclosing risk information, etc., and reporting to the President.

The Audit Department plays an independent and detached role. It evaluates the effectiveness of risk monitoring in the first and second line of defense, and provides timely improvement suggestions; refers to the risk evalustion results to plan an annual audit plan, conducts internal audits accordingly and reports on a regular basis Audit Committee.

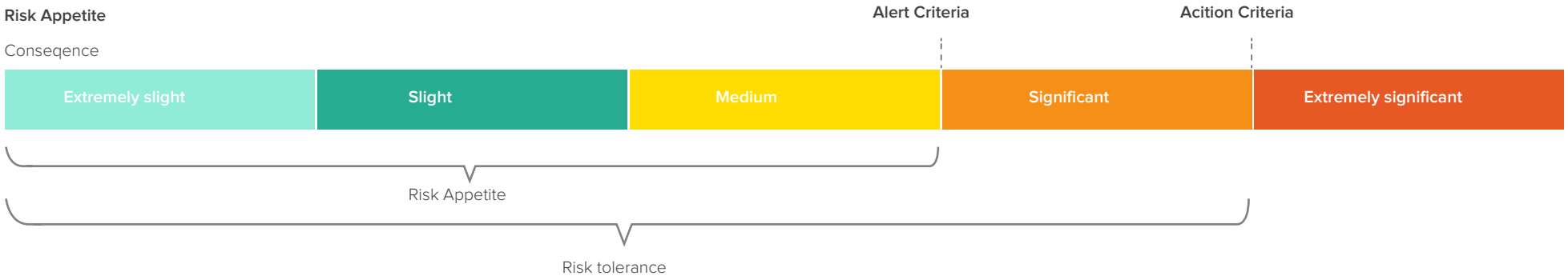
Risk Management Mechanism

In order to reduce the impact of internal and external uncertainties on operations, CTCI has a complete risk management process to systematically identify, evaluate and respond to threats (or opportunities) that may bring to the Company to avoid or mitigate the impact on business operations. All employees are also responsible for identifying and reporting risks. If any material risk event that may affect the Company's operations is discovered, they shall be reported to their supervisors immediately.

CTCI divides risks into three major categories based on the Group's operations, strategies, internal/external issues, etc. These include events and behaviors that may affect the Company's expected business goals, execute strategies, or even threaten the Company's survival or potential issues are within the scope of the Company's risk management. The Company's risk category and main risk aspects are as shown in the picture on the right.

Risk categories	Risk categories
Climate and Nature Risk	Physical Risks：Acute, Chronic Transition Risks：Policy and Regulatory, Technological, Market, Reputation, Liability Aspects Systemic Risks：Ecosystem Stability, Financial Stability
Corporate Operational Risk	Policy/Economic Environment, Strategy/ Goal, Integrity Management, Finance/Tax, Legal Compliance/ Intellectual Property, Corporate Image/ Goodwill, Human Resource, Information Security, Quality, HSE, Procurement, Engineering Technology
Project Risk	Proposal Stage：Region, Project Features, Customer/ Partner, Contract Terms Execution Stage：Project Profit, Project Schedule, Contract Control, Project Quality, Project HSE, Engineering Technology

Key risk items have been identified and defined for each major risk aspect of "Corporate Operational Risk" and "Project Risk." Alert Criteria" is the Company's risk appetite and "Action Criteria" is the Company's risk tolerance, and they are submitted to the Risk Management Executive Committee for review and approved by the President before implementation. The approved risk appetite is incorporated into the relevant internal Regulations (SOP) to serve as the criteria for risk monitoring, treatment and control. For daily risk appetite management, risks of medium severity or lower are within the Company's risk appetite; risk's consequence higher than medium means reach alert criteria, risk's consequence higher than significant means reach action criteria. If the risk reach the alert criteria, it shall be reported to the supervisor of the affiliated unit within one week and listed in the weekly report for management and tracking. If the risk reach the action criteria, a response team must be formed to handle the risk event, and notify the Risk Management and Control Office and Chief Risk Officer, the Risk Management and Control Office will also track the handling of the risk event.



Risk Management Implementation Procedures

CTCI identifies potential risks within each department's business scope through regular seminar meetings, and based on the"consequence/probability matrix method," draws a risk matrix to determine the risk rating by considering financial and non-financial indicators of the consequence of risk consequences and the likelihood of the event. When it is difficult for us to clearly or timely evaluate the consequence and probability of the identified risk items using the "consequence/ probability matrix method," we will use the "Risk Index method" as the basis to evaluate rate risks. If the existing risk is rated as "High risk" and "Slightly High risk," an improvement plan should be immediately developed, and continuous tracking and improvement should be carried out after the implementation of various risk response measures to properly manage the risks.

Risk identification	• Identify significant risk item (including emerging risks)
Risk analysis	• Analyze the likelihood of risk occurrence and the degree of impact
Current risk evaluation	• Confirm overall risk rating by “the method of severity rating and probability index” or by “the method of Risk Quantitative Index” • Critical risk conduct sensitivity analysis and stress testing
Actions planning	• Formulate and implement mitigation plans based on risk control methods
Residual risk evaluation	• Evaluate the rating of residual risk after completing the improvement plan
Improvement tracing	• Progress tracing of improvement plan • Evaluate effectiveness of improvement plan

Risk Management Process

Risk Management Review

Each unit must perform risk identification, risk analysis, risk evaluation, and risk control processes at least every six months to identify the risks it may face within its business scope, analyze the risk occurrence probability and consequence, evaluate the risk rating accordingly, and select appropriate measures for each risk. Risk control methods and formulating mitigation measures accordingly, and compile the risk management report. After confirmation and approval by the supervisor, submit it to the "Risk Management Executive Committee" to review the risk exposure situation and the implementation effectiveness of the action plan, etc., for continuously tracking risk improvement status. Matters reviewed and directed by the Risk Management Executive Committee are promoted and tracked by the Risk Management and Control Office.

After compiling the risk management report and obtaining confirmation and approval from the supervisor, it should be submitted to the Risk Management Executive Committee for review. The committee reviews the risk exposure situation and the effectiveness of action/ mitigation plans to continuously track risk improvement. The Risk Management and Control Office is responsible for promoting and tracking the deliberations and instructions of the Risk Management Executive Committee.

For projects, project risk review meetings are convened by the risk representatives of each project on a quarterly basis to discuss newly identified risks, review the progress of existing risks and agreed countermeasures, and evaluate the effectiveness of risk strategies. Major risk issues are also reported to the corresponding BU and top management through regular Project Review Meetings.

Risk Management Implementation Status

Risk Identification, Analysis, Evaluation and Treatment

According to the scope covered by the risk management framework, CTCI identified significant risk items and evaluated their risk rating in the 2023 risk assessment results. Based on these risk rating, appropriate control methods and necessary mitigation measures were planned and implemented. The identified major issues, which are communicated with stakeholders (see Materiality and Stakeholder Communication), were included in the risk assessment scope. The main risks monitored in 2023 are listed in the table below.

Blue words indicate: related to major sustainability issues

Risk categories	High Risk	Slightly high Risk	Medium Risk	Low Risk
Climate and Natural Risk	None	• Customers may spend less on high carbon missions investment (Transition - Market)	• Suppliers are levied carbon tax/ carbon fee, which are passed on to CTCI (Ttransition - Policy and Regulatory)	None
Operational Risk	• Young talent loss (Human Resources) • Key talent loss (Human Resources) • Manpower shortage (Human Resources)	• Cyber Attacks (Information Security) • Operation without following the procedures (Quality) • Domestic supply shortage (Procurement)	• The Paid Guarantee Deposit has expired but not completed the contract yet, resulting in the guarantee liability not ending (Finance/Taxation) • Sub-contractor failed to perform contract performance (Procurement)	• Insufficient new contracts entered (Strategy/Goal) • Exchange rate fluctuation losses (Finance/Taxation) • Brand identity and communication errors (Corporate image/Goodwill) • Incomprehensive SOP (Quality) • Leakage of confidential documents (Information Security) • System interruption (Information Security) • Procurement and sub-contracting exceeding budget (Procurement) • Insufficient quantity of Rule-based development (Engineering Technology) • Self-developed software was not effectively used in the project (Engineering Technology)
Project Risk	• Fatal occupational accident affects the work progress (Project HSE)		• Customer complains about poor safety performance (Project HSE)	• COVID-19 affects the the number of workers on site and the planned completion date, resulting in the risk of delay liquidated damages (Project Schedule) • The quality of outsourced design is not good, resulting in delay and must be rework by CTCI (Project Schedule, Project Quality) • Litigation/arbitration and other disputes affecting revenue and reputation (Contract Control)

Remarks: Material topic - social influence enhancement was not considered as a risk after identification and thus not included in the scope of risk assessment.

Based on the risk assessment results, appropriate risk control methods are selected and corresponding the control and improvement mitigation measures. The responsible units respond to and handle the risks according to the planned mitigation measures, and continuously manage and monitor the execution of these mitigation plans to ensure their proper implementation. The main risk mitigation measures for high-risk and slightly-high-risk items are described in the following table.

Risk Categories	Risk Item	Risk Mitigation Actions
Climate and Natural Risk	Customers may spend less on high carbon missions investment	· **Net zero EPC technology development, implementation of carbon capture and energy circulation conversion Technology.** · **Business transformation to enhance the expansion of low-carbon green engineering business.** · **Net zero EPC achievement rate and green engineering contract .amount achievement rate are included in department KPIs**
Operational Risk	Young talent loss	· **Salary adjustment from the overall system aspect:** 1.Adjusting entry-level salaries for two consecutive years in response to market trends. 2.Implementing a structural salary adjustment linked to entry-level salaries. · **Major talent retention measures taken by each unit:** 1.Intensifying career consultations with junior colleagues and establishing IDPs based on their aptitudes. 2.Assessing competencies and providing diverse job assignments and internal rotations for junior colleagues.
	Key talent loss	· **Mitigating measures for the overall system:** 1.Strengthening of KPI communication and establishing a highly linked performance and compensation mechanisms. 2.Implementing a structural salary adjustment linked to entry-level salaries. · **Major talent retention measures taken by each unit:** 1.Regularly organizing learning workshops in various knowledge domains to enhance and exchange professional knowledge. 2.Aligning with IDPs and increasing opportunities for external training. 3.Conducting regular career consultations, caring for colleagues' job rotations, and assessing their willingness to take on overseas assignments
	Manpower shortage	· **Facilitate efficient utilization of human resources from the Group's subsidiary: comprehensive scheduling and deployment.** · **Increase recruitment of foreign engineers: through overseas subsidiaries and recruit foreign students in Taiwan.** · **Vary recruitment means: internal referrals by employees, engageheadhunter, and utilize LinkedIn.** · **Hire retired or former employees with talent to serve as project consultants and pass down their experience.**
	Cyber Attacks	· **Implementing Managed Detection & Response (MDR) to establish a 24/7 continuous cybersecurity protection from the service providersContinued matters:** 1.Advanced Defense for E-mail. 2.Extending protection to mobile user in order to establish an always-on secure connection.
Operational Risk	Operation without following the procedures	· **Continue establishing training material of project management procedures, request relevant project members to attend the courses, and 100% pass the exams to ensure their awareness. Quarterly analyze the major audit findings, and incorporate these findings into the main check items of the Project Quality Manager (PQM)' s routine check in next quarter, and review the check results weekly for improvements.**
	Domestic supply shortage	· **For difficult to outsource work items (such as civil, piping prefabrication and installation, steel structure and equipment installation, etc.), a different approach is adopted：** 1. All self-perform 2. Semi-self-perform: direct outsourcing by professional worker class(civil subcontract) 3. Introducing a large number of foreign labors, in addition to the CN coordinating the use of self-perform, and encouraging contractors to use foreign labors to promote the efficiency of the use of foreign labors. 4. Signed long-term contracts for construction materials.
Project Risk	Fatal occupational accident affects the work progress	· **Enhance the reporting of Near near-miss incidents on-site, develop Lesson & Learned for potential hazards that happen very often quarterly, and strengthen the promotion on-site.** · **Set up safety classroom training on-site, with five major topics (personal protection, hanging work, confined space, electrical safety, and work at heights), and supplemented with promotional posters and systematic introductions to strengthen the impression of workers and enhance safety awareness.** · **All workers on-site are required to comply with the CTCI Life-saving Rules. Any offenders will be punished by the regulations, and the severest cases will be ejected from CTCI's project site.** · **Continuous Improvement:** 1.Continue to conduct HSE education and training, and promote CTCI colleagues and contractors workers to receive the Taiwan Safety Card Training. 2.Continues to conduct weekday and weekend audits. In 2023, a total of 227 audits were conducted. And conduct reviewing meetings to track the improvement results with Business Units quarterly.

Sensitivity Analysis and Stress Testing

The Company attaches great importance to internal and external issues and their potential risks and opportunities to the Company's continuous operations. The responsible units gather new information on a regular basis and report it to the supervising authority in order to identify and discuss significant or potential risk factors. Critical issues are evaluated to determine connections to important risk items and their their impacts. The Company conducts sensitivity analysis and stress testing to assess how critical issues' key attributes and variables impact its operations, providing helpful information for decision-making. In 2023, the Company prudently conducted risk analysis and evaluate on financial and non-financial issues of different dimensions. The results of the sensitivity analysis and stress test were passed, indicating that the Company has a stable risk tolerance under changes in the internal and external environment.

Risk Description	Summary of Sensitivity Analysis and Stress Testing Scenarios	Impact Evaluation upon Occurrence of Risk	Stress Test Result
Financial Risk	The impact of extension of bond caused by deferment on project leads to high utilization ratio of credit line.	Available credit line	Passed
Operational Risk	The impact of failure at getting in on the ground floor of bidding for desalination plants in Taiwan leads to increase in market share.	Market share in the desalination plants may approximately to 0 The annual growth rate of of infrastructure, environment and power (IEPBO) market share may be negative	Passed
Operational Risk	The impact of the Red Sea security crisis negatively affects execution costs of projects and CTCI's profits.	Profitability and company gross profit	Passed
Cyber Security Risk	The impact of serious cyber security incidents on operation.	System recovery time	Passed
Supply Chain Risk	The impact of failure tendering to increase subcontracting cost on operation.	The percentage of re-contracting at a premium	Passed

Emerging risks

CTCI classifies the long-term (over 3-5 years) risks with the most significant future business potential impact as emerging risks, and incorporates emerging risks into the risk management cycle, regularly identifies emerging risks every year, and pays attention to changes in the global environment. In addition to actively control the potential negative impact of emerging risks, we will also seek opportunities from future trends. The assessment results for 2023 show as next page.

Issue	Risk Description	Potential impact	Mitigating Actions
Risk in Project Execution Caused by Clashes in the Red Sea arising from Geopolitical Dynamics in the Middle East	Israel's war in Gaza started on October 7, 2023 exacerbates instability the Middle East area, creating complications and showing no signs of easing. In terms of clashes in the Red Sea, clashes involving attacking merchant ships and naval vessels in the Red Sea have increased since the war in Gaza. In the aftermath of recent attacks in the Red Sea, vessels are opting to bypass the Suez Canal and navigate around South Africa's Cape of Good Hope. For CTCI, lead times on products imported from Europe have been extended by one or two weeks as a direct result of freight liners being diverted by the Cape of Good Hope. As a result of the longer shipping route and the protection required, CTCI suffers a rise in shipping prices and potential delays in many projects. In such cases, CTCI is facing a risk of numerous liquidated damages or other penalties.	Among the projects executed by CTCI, the proportion of key equipment imported from Europe are categorized by industry below: Industry / The proportion of contracting (2022, 2023) / Critical material/ Key equipment Transportation: 1.5%, 1.6% — Underfloor Wheel Lathe, Mobile Flash Butt Wedding Machine LNG: 5.9%, 4.9% — Cryogenic valve Power: 19.8%, 22.1% — Transformer, Turbine engine, Small-diameter control valve Hydrocarbon: 29.7%, 30.1% — Equipment of asphalt Total: 56.9%, 58.7% • Orders for materials/equipment placed — The Time for Completion of each project involved is deferred. Veson Nautical shows that the journey around the Cape of Good Hope will roughly add 1 or 2 weeks and 6,500 nautical miles per journey. The scheduled installation is deferred as a direct result of freight liners being diverted by the Cape of Good Hope. In such cases, CTCI is facing a risk of numerous liquidated damages or other penalties. • Orders for materials/equipment to be placed — Increases in costs due to rise in shipping prices. –Certain key materials/equipment can only be supplied by vendors from Europe in order to meet standards or requirements of clients. –Rise in shipping prices as a result of the longer shipping route (about 6,500 nautical miles).	For ordered key materials/equipment: • Continue to enter into open-end contracts with the most-famous cargo shipping companies over a period of time without a change in the price. • Sort the ordered key materials/equipment by vendors and take into account the longer shipping route while expediting. • If time doesn't allow, turn to air freight to avoid the longer Red Sea diversions around Africa's Cape of Good Hope. Reschedule installation to an alternative time and try to negotiate with client for extension of time for those that can't be shipped by air freight. For key materials/equipment to be ordered: • Ask vendors from Europe to assemble equipment with parts from worldwide in third countries other than European and Mediterranean countries and ship it out directly to site to reduce costs and lead time. For future: • When negotiating terms and conditions with clients, push for adding piracy into the list of Force Majeure Events.
Cyber Securityand Intelligence Property Risks posed by Development and Deployment of Generative Artificial Intelligence (AI)	In response to development and deployment of Artificial Intelligence (AI), the European Parliament passed an amendment version of the AI Act on June 14, 2023. In October 2022, the White House Office of Science and Technology Policy (OSTP) published a Blueprint for an AI Bill of Rights ("Blueprint"), which shared a nonbinding roadmap for the responsible use of AI. Taiwan also issued Guidelines for use of generative AI by Executive Yuan and its subordinate agencies on August 31, 2023. Hackers are already employing AI to create new zero-day ransomware and malware, and to improve the content within their social engineering methods. It amplifies the risk of account compromise, especially for those with high-privilege account. If clients or suppliers use generative AI technology to handle CTCI related business, CTCI's confidential information may be indirectly exposed to public domains or other servers, resulting in the risk of leakage of CTCI's trade secrets. If employees apply Generative AI in their daily work routines, their inputs could be used as training data for the bot and its future output could include or resemble CTCI's confidential information or trade secrets. As generative AI technology becomes more mature, the risk of incidents will also increase. If relevant control mechanisms are not laid out in advance, cybersecurity, competitiveness and even company operations may be affected when related incidents occur.	• Internal data indicates steep rise in number of malware intercepted in recent years. The proportion of malware intercepted to emails received in 2023 was: –Spam: 5.02% –Phishing emails: 0.65% –NXDOMAIN (Non-existent Domain): 1.99% • If competitors or interested parties with opposing positions obtain CTCI's relevant trade secrets or confidential information. It undermines competitiveness and risks eroding CTCI's share of the global market (for example: know-how is plagiarized, trade secrets leaked confidentiality (e.g., partners or supply chains blocked technology, etc.). • Employees cannot make sure whether the information obtained from generative AI doesn't involves competitors' trade secrets, and there may be concerns about infringement; competitors can also obtain CTCI's confidential information through generative AI, and the confidentiality of CTCI's business secrets has declined.	• Strengthen Cyber security Posture use cloud firewalls provided by CHT to filter traffic from a variety of sources and enhance database access control policies; –Strengthen Cybersecurity Posture prevent unauthorized access or damage to computers or data using wireless networks and protect the wireless network itself from adversaries seeking to damage the confidentiality, integrity, or availability of the network; –manage sensitive data and encrypt highly sensitive data in order to protect it from unauthorized or unlawful access (hacking), exposure, theft, and damage. • Perform Cybersecurity Health Check by external specialist to identify weakest security areas and take the appropriate actions to mitigate any potential risks discovered. • Strengthen social engineering attack simulation drills, intellectual property awareness assessments and information security training for all employees to enhance information security protection and confidential document/information protection awareness. • It is prohibited to upload confidential files to external generative AI (such as Chat GPT); and plan enterprises to build our own generative AI application solutions. • Promote TIPS (Taiwan Intellectual Property Management System) to review and strengthen the intellectual property rights management system.

Risk Management Audit

Internal Audit

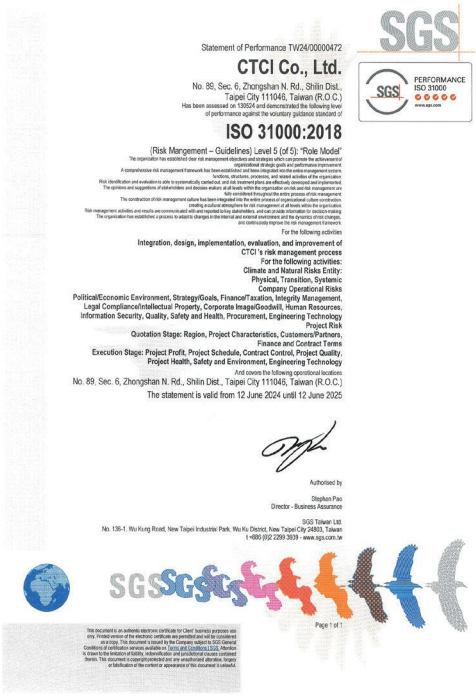
A sound internal control system enables more effective risk management, which in turn helps strengthen the foundation of enterprise operational resilience. CTCI's internal audit unit (Audit Department) prepares an annual audit plan based on the results of risk assessments to monitor the Company's risk management. It also evaluates the self-assessment reports of each unit and subsidiary to be evaluated by the President and Chairman as the basis for issuing the internal control system statement. The implementation of relevant internal control systems is subject to spot checks from time to time by the competent authority.

Regarding the requirements of various ISO standards (including ISO 9001 Quality Management System, ISO 14001 Environmental Management System, ISO 27001 Information Security Management System, and ISO 45001 Occupational Health and Safety Management System) in risk management, the responsible units also plan an annual audit schedule to conduct regular internal audits. These audits assess the compliance and effectiveness of the risk management processes. All nonconformities found during the audits are reviewed and improved, with root cause analysis conducted to prevent similar defect. The findings from the 2023 internal risk management audits have all been improved.

Furthermore, the Risk Management and Control Office follows the ISO 31000 Risk Management - principles, framework, and processes, as well as the Company's risk management related SOPs, to monitor that risk management processes carried out by various risk control units are compliant. Internal risk audits are conducted at least every two years. The most recent audit revealed an average compliance rate of approximately 94% across all risk control units. Any noncompliance issues have been improved, and the frequency of reminders has been increased to help with the implementation and tracking of risk mitigation improvements.

External Audit

To ensure the effectiveness and compliance of the Company's risk management processes, the relevant SOPs require a third-party audit of risk management principles, process architecture, and execution at least every two years. This is to confirm that the Company's risk management system complies with the international risk management standard ISO 31000. Furthermore, in order to assess the Company's risk management practice and improve overall risk management capabilities, SGS, an external verification 3rd party, conducts a risk maturity audit in 2024. The audit result was " Role Model," indicating that our company has a good understanding of risk management, has a well-developed risk management system, and performs risk management at an exceptional level.


Statement of Performance TW24/00000472

CTCI Co., Ltd.

No. 88, Sec. 6, Zhongshan N. Rd., Shilin Dist., Taipei City 111046, Taiwan (R.O.C.)

Has been assessed on 13/05/24 and demonstrated the following level of performance against the voluntary guidance standard of

ISO 31000:2018

(Risk Mangement – Guidelines) Level 5 (of 5): "Role Model"

Integration, design, implementation, evaluation, and improvement of CTCI 's risk management process

For the following activities:

Climate and Natural Risks Entity: Physical, Transition, Systemic

Company Operational Risks

Political/Economic Environment, Strategy/Goals, Finance/Taxation, Integrity Management, Legal Compliance/Intellectual Property, Corporate Image/Goodwill, Human Resources, Information Security, Quality, Safety and Health, Procurement, Engineering Technology Project Risk

Quotation Stage: Region, Project Characteristics, Customers/Partners, Finance and Contract Terms

Execution Stage: Project Profit, Project Schedule, Contract Control, Project Quality, Project Health, Safety and Environment, Engineering Technology

And covers the following operational locations:

No. 89, Sec. 6, Zhongshan N. Rd., Shilin Dist., Taipei City 111046, Taiwan (R.O.C.)

The statement is valid from 12 June 2024 until 12 June 2025

Authorised by

Stephen Pao

Director - Business Assurance

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Continuous Improvement

The Company has implemented a Lessons & Learned (L&L) mechanism. For major emergency risk events, the responsible units should submit risk treatment reports and L&L for review and approval. After the LL has been reviewed and approved, the Risk Management and Control Office distributes it to relevant units so that necessary preventive measures can be implemented. The Risk Control and Management Office will also review and revise the relevant management mechanism depending on the preventive measures derived from L&L. Emergency risk events handled in 2023 have been reviewed and included in the Company's risk bottom line, key risk items, and alert criteria and action criteria to ensure the continuous improvement of the risk management mechanism and risk prevention.

Deepening the Risk Culture

The Company is committed to establishing and deepening a comprehensive risk culture. In addition to continuing to promote the Company's risk management regulations and procedures to colleagues through all levels of management, the Company ensures that colleagues are aware of risk management policies and risk management and control related requirements, so that they can be used in daily operations In addition to the compliance and implementation, the supervisors at all levels and all colleagues also regularly organizes promotion or training activities to enhance the risk awareness of all colleagues.

Risk Management Indicators and Rewards

In order to improve the effectiveness of risk management, CTCI considers the direction of risk control and the purpose to be achieved each year, and develops the group's annual Risk Management and Control Objective, requires each risk management unit to implement risk control, and conducts measurement and control of the risk management and control objective. The management and control objectives are also included in the annual key performance indicators (KPI) of managers at all levels. The Group's risk management and control objective for 2023 is "high treatment effectiveness of regular operational risk" to link the effectiveness of high/slightly-high risk resolution responses to the KPIs and rewards (performance bonuses) for supervisors and employees.

Safety behavior is one of the main items in the Company's risk culture. The annual performance evaluation of all employees includes behavior indicators such as safety. Employees are required to strictly abide by SOP, identify situations that may affect safety, and respond to them immediately. Furthermore, to strengthen the implementation of a risk culture, CTCI has established financial incentive measures for risk management metrics. For example, in the CTCI “CP-319 Employees Reward and Punishment Regulations” and “CP-322 Proposal Reward Regulations”, upon Reward and Punishment Benchmark, different levels of commendations and bonuses are established based on the accumulated hours of site safety, with a focus on safety and health in critical risk items.

In addition, the risk assessment process and indicators are also included in the product or service development process. Before the Company implements each project, the project team conducts risk assessment during proposal stage and execution stage (cover AEPCK Project Life Cycle), identification and management of foreseeable risks and opportunities, in order to reduce unfavorable factors and promote the realization of project goals.

Risk Management Training for Directors and Senior Management

In order to enhance the risk awareness of the Group's directors and senior executives, the Risk Management and Control Office and Secretariat of the Board regularly review current affairs and internal control needs every year, and plan relevant risk training courses. In response to the concerns and risks of digital technology development, as well as the data privacy and security risks posed by artificial intelligence, two risk management training sessions were held for Group board directors (include non-executive directors), supervisors and Senior Executives in 2023. Strategic perspectives of global CEOs, new opportunities for corporate transformation, introduction to emerging digital technologies, hidden concerns and risks of digital technologies, and discussion of the metaverse and future development of virtual worlds in relation to the virtual world explosion. Additionally, on May 3, 2024, external experts were invited to conduct training on "2024 World Economic Trends, Risk Indicators, and Response Strategies" for directors (including non-executive directors) and senior executives.

General Management (Line Manager) Training

To promote the Group's risk control, a workshop was held in 2023 to further explain important aspects of risk control promotion and the Group's risk control SOP, ensuring that each risk management unit understands the relevant regulations and can carry out various operations. In the workshop, the current implementation status and related viewpoints also be discussed in order to continuously improve the implementation and effectiveness of risk management and control.

In addition, in 2023, a general management training session on managing corporate reputation risks was held. Because the first signs of a reputation crisis can emerge in the daily operations of each unit, external strategic consultants were invited to share case studies on managing corporate reputation crises. The training also included explanations of the group's corporate reputation risk control related SOP to improve crisis awareness and response capabilities among supervisors at all levels. The goal was to ensure that each unit is sufficiently alert and prepared for unexpected events. The shared content includes: Reputation crises have become the norm for businesses, analysis of the media environment in Taiwan, CTCI Group's corporate reputation crisis map, CTCI Group's corporate reputation crisis management mechanism, and Dos and Don'ts of corporate reputation management. A total of 90 participants included the Group's domestic risk control representatives and project divisions/department Heads.

Risk Training for All Employees

Every year, the Company organizes company-wide risk advocacy activities or training courses focused on specific risk dimensions or issues. In 2023, we planned and conducted the training on climate and natural, strategy/goals, legal compliance/intellectual property, integrity management, and HSE for all employees. These initiatives aim to increase risk awareness among all group members and integrate risk management knowledge into employee behaviors and daily operations.

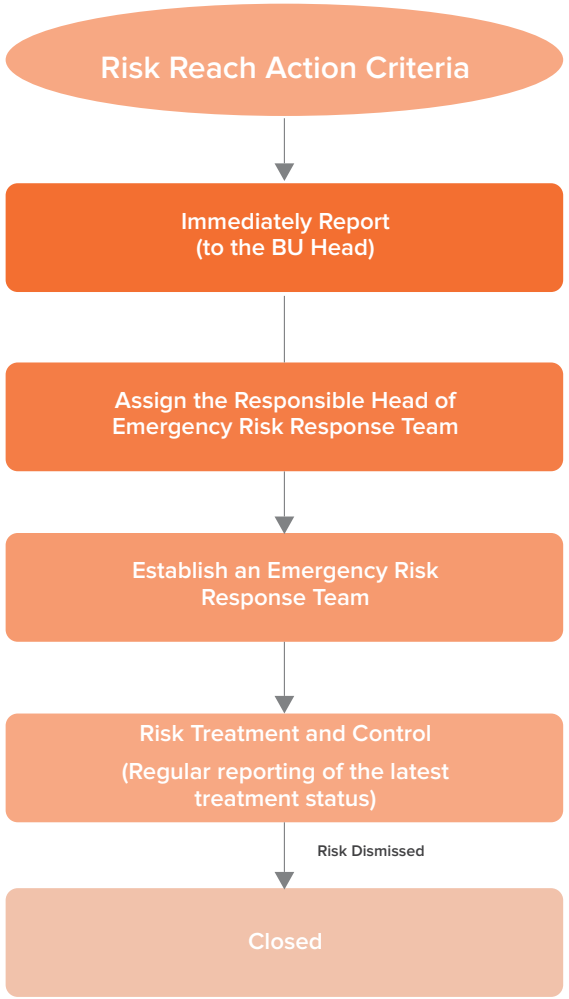
Risk type/aspect	Courses	Training subjects
Climate and Natural	Trends in Net Zero Carbon Emissions, Impacts on Enterprises, and Opportunities	Group executives and employees
Strategy/ Goal	2023 Group Strategy Consensus	Group executives and employees
Legal Compliance/Intelligent Property	2023 Group Evaluation of Intellectual Property (IP) Awareness	Group executives and employees
Integrity Management	Employee Integrity and Ethics Code (including Personal Data Protection Act)	All employees of CTCI Corporation
HSE(including at project sites)	Firefighting and evacuation seminar for all employees	CTCI Corporation and domestic affiliates
	On-site hazard notification and safety and environmental awareness training, high-risk operations (such as hot work, electric shock, confined spaces, heights, elevated work, excavation, lifting operations, etc.), and work permit for high-risk operations.	Managers at all levels, colleagues and sub-contractors of CTCI Corporation

Continuous Operation and Emergency Response

CTCI is mainly engaged in design, procurement and construction, and all operations rely on the information system as the main platform. In order to ensure the continuous operation of the business and reduce the impact of major accidents or disasters on key businesses, the Company implements relevant operations in accordance with the Business Continuity Plan (BCP) to reduce operating risks. The business continuity plan drills for 2023 took place in May and October, with a focus on testing 12 key systems related to design, procurement, construction (Engineering, Procurement, Construction, EPC), and project management. The results were all successfully completed.

In addition, the Company has established an emergency risk event control mechanism, and established alert criteria and action criteria for key risk items of each risk aspect. When an emergency risk event occurs, the responsible unit for the risk event should identify and evaluate the level of the emergency risk event in accordance with the above criteria in order to activate the emergency risk event control mechanism. In addition to developing necessary countermeasures, the responsible unit should also follow through on the countermeasure and mitigation results on a weekly basis to reduce adverse influences and impacts. Depending on the severity of the emergency risk event, supervisors should also join the team in the emergency risk event reponse efforts. The control of emergency risk events are illustrated in the figure shows as right.

Furthermore, CTCI regards its employees as the Company's most valuable asset, and it places a high value on their personal safety in the workplace as well as their ability to respond to emergencies. In order to reduce the Company's operation risks, CTCI has made the "Emergency Response Management Procedure," which covers the first and second headquarters buildings, as well as project construction sites. It focuses on specific major risk events such as fires, natural disasters, environmental impact events, abnormalities in air conditioning, water supply disruptions, power outages, earthquakes, wind disasters, floods, protests, or riots. Through crisis scenario drills, colleagues will be more familiarized with contingency measures to better reduce impact in the event of a disaster. In March and September 2023, self-defense teams received fire safety training, and employees in the first and second headquarters buildings participated in annual fire evacuation drills.

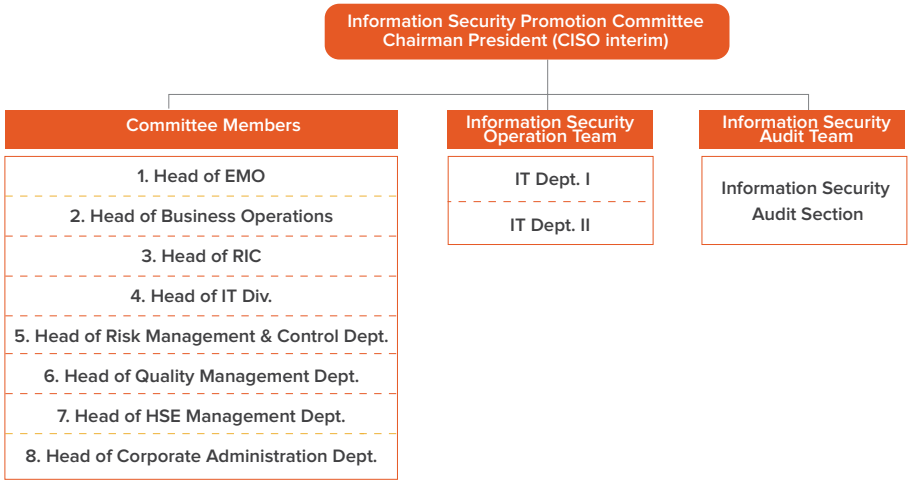


Information Security

Information Security Governance and Organization

The role of information security is crucial to the operation of CTCI. Therefore, we have incorporated Information Security into the company's overall risk management framework. We have established the Information Security Promotion Committee, with the President serving as the chairman. The committee is responsible for reporting annually to the Board of Directors on the effectiveness of information security management and the direction of information security strategies. Oversight is provided by Director Johnny Shih[Note] ,who possesses a background in information security, offering professional insights and recommendations. This ensures alignment between the direction of information security initiatives and the sustainable development goals of the company.

Information Security Team-Information Security Promotion Committee



We have established Information Security Policy Statement as the basis for promoting information security management. In terms of execution, the Information Security Promotion Committee is responsible for formulating information security objectives, strategies, and management procedures. At least once a year, the committee convenes an Information Security Management Review Meeting to review information security management matters, conduct a risk assessment report, and review risk treatment plans. Additionally, recognizing the increasing importance of information security and to comply with the requirements of Taiwan's Financial Supervisory Commission for secondary exchange listed company, CTCI has established an Information Security Audit Section under the Information Security Promotion Committee to carry out IT audit operations.

Ensure information security

Consolidate the ISMS, protecting the company's information assets from internal or external threats of being stolen or disclosed, either maliciously or inadvertently.

Raise information security awareness among staff

Conduct information security education and training program, keep staff educated to prevent information disclosure that may impact business operation.

Persistent improvement of ISMS

Persistent supervision, measurement, evaluation and analyzing of information management activities will ensure the robustness and reliability of the ISMS, thus improving the effectiveness of the system.

Compliance with regulatory and contractual requirement

Operating information of all contracted engineering projects, including planning, design, procurement, construction, etc., is secure and compliant with government regulations, company policies and standards, and the contractual requirements.

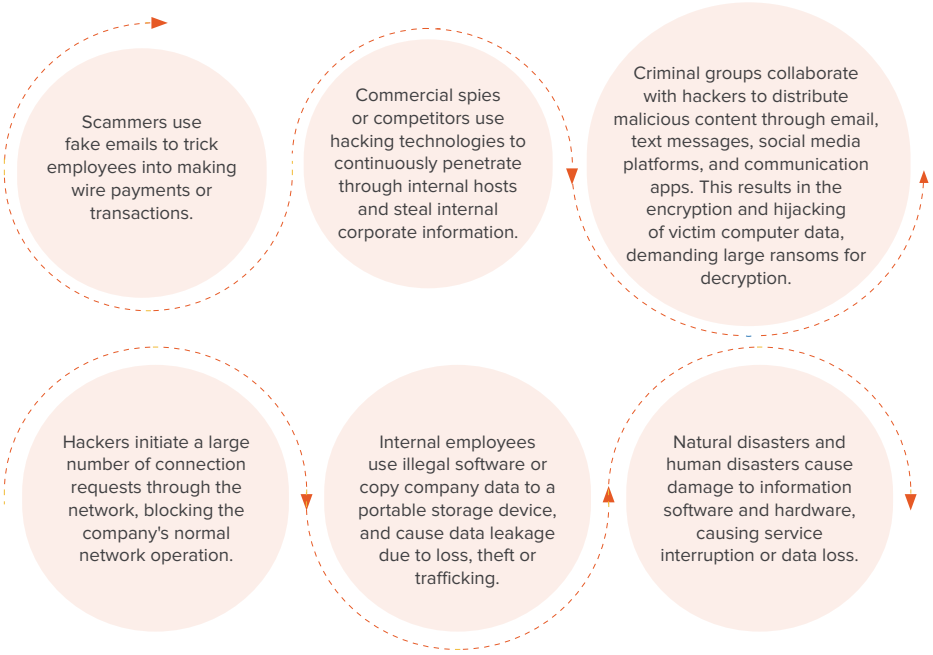
Four objectives of the information security policy

Note:Director Johnny Shih holds a Master's degree in Computer Science and Business Administration from Columbia University in the United States, with a professional background in Information Technology (IT).

Enhancing Information Security Protection

Information Security Risk Assessment

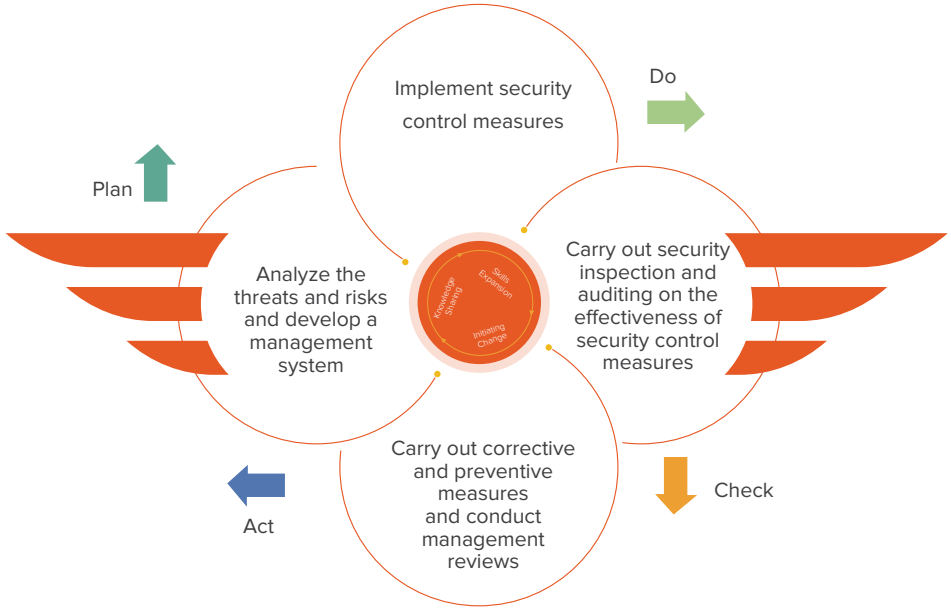
CTCI has incorporated information security into the company's overall risk management framework, conducting at least one annual information security risk assessment. For risks exceeding acceptable thresholds, risk treatment plans are proposed, implementing risk management measures to continuously monitor and ensure the completion of improvements.



Key Items of Information Security Risk in 2023

Information Security Management and Control Measures

CTCI deeply understands the critical importance of avoiding any lapses in managing information security risks. Therefore, we continuously strive for improvement by employing the PDCA (Plan-Do-Check-Act) management system cycle to ensure effective implementation of risk control. Additionally, we enhance the effectiveness of information security management through three key initiatives: expanding skills, initiating change, and sharing knowledge.



ISMS implementation cycle of CTCI - The management cycle of information security system

Information Security Awareness Enhancement

In response to constantly evolving information security threats and tactics, we continue to enhance the information security awareness of our colleagues. In 2023, we conducted information security training for both IT Division staffs and general employees, totaling 694 hours. Professional information security training included ISO 27001 internal auditor training, information security risk assessment, and participation in events such as the CYBERSEC Taiwan Cybersecurity Conference. General information security training covered topics such as recognizing social engineering attacks and information security focus, reinforcing information security concepts among our colleagues.

Key Information Security Management Measures

Regularly perform internal and external audits; conduct internal audit once every six months and external audits once a year. Pass and maintain the ISO 27001 certification, and improve the information security management system operations.

Continue to conduct social engineering attack exercise every quarter and provide information security training to enhance employees' awareness of information security protection regarding email.

Install anti-virus and monitoring software, block the connection of USB storage devices, and restrict installation of software without prior consent. Another measure is to provide personal cloud services to back up important data.

CTCI introduced Chunghwa Telecom's cloud services to the networks in combination with firewalls to manage network traffic and applications. Another measure is to develop internal network protection and mechanisms on monitoring and management of data collection.

Protect the confidentiality of documents through sensitive document control management system and disk encryption technology.

Ensure a centralized management of host computers, establish environmental control and alert mechanisms for data centers, conduct regular data backup, and carry out biannual disaster recovery drills.

In expanding skills, we encourage colleagues from the IT Division to participate in various types of cyber security seminars, such as CYBERSEC, and invite vendors to introduce the latest information security trends and solutions. Regarding initiating change, we introduce various control measures for information security risk items, such as USB blocking, digital sensitive document management, restrictions on personal wireless networks, and physical isolation of test areas. We also strengthen backup management and engage external experts for third-party vulnerability analysis and simulated hacker attacks to reduce the likelihood or impact of risks. In terms of sharing knowledge, in addition to conducting physical education and training, we also record courses on identification of social engineering attacks and learning of the information security focus as digital materials, providing colleagues with opportunities for online learning

Information Security Training

Course Name	Intended audience (Division and Job Category)	Number of People	Hours	Total Hours
ISO 27001 Internal Auditor Training	Qualified personnel for information security internal auditor	21	16	336
Information Security Risk Assessment Implementation Guidelines	Internal information security auditee members	19	1	19
CYBERSEC Taiwan Cybersecurity Conference	Information Security Audit Section	2	16	32
Enhance the Identification of Social Engineering Attacks and Learn the Information Security Focus.	Mid-high risk personnel identified during social engineering exercise	307	1	307
		Total		694

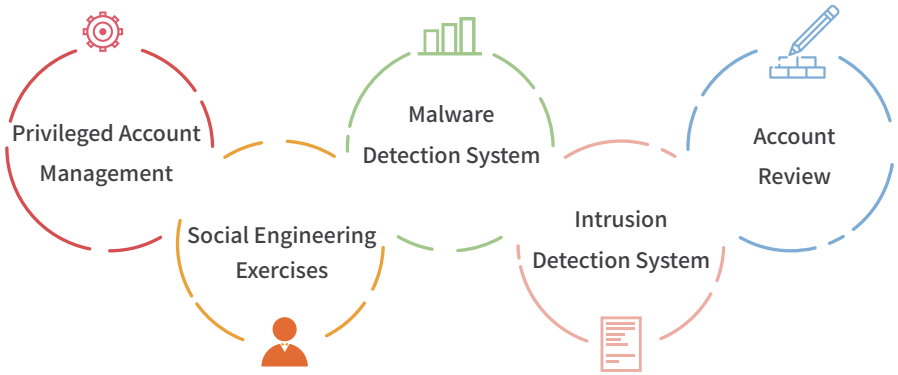
Information Security Exercise

CTCI continuously strengthens its information security measures each year. In addition to the prevention of information security incidents through the engagement of external experts for third-party vulnerability analysis and penetration testing (simulated hacker attacks), the company also conducts biannual Business Continuity Plan exercise at the backup data center in Kaohsiung. For critical systems, weekly off-site backups, storage, and testing are performed. Additionally, vulnerability scans are conducted twice annually to ensure ongoing implementation of information security protections.

Frequency of Information Security Exercise

Every week	Off-site backup
Every 6 months	Business Continuity Plan exercise Vulnerability scans
Every year	Third-party vulnerability analysis from external experts Penetration testing (simulated hacker attacks) Privileged account review User account review

In response to the growing threat of Advanced Persistent Threats (APTs) in recent years, CTCI has implemented relevant control measures to mitigate the potential risks.



APT Monitoring and Control Measures

To enhance the information security awareness among all employees, we use the corporate intranet to post announcements on information security-related information. In the face of increasing threats, we have also established a social engineering prevention service, checkmyemail@ctci.com, through which employees can report suspicious emails, thereby enhancing the security of email communications. Given the severe threats posed by malicious and phishing emails, we conduct social engineering exercise quarterly for 50% of our employees, ensuring that each employee participates at least twice a year. In 2023, CTCI continued conducting social engineering email exercise using themes aligned with the latest current events and fabricated system notifications to enhance employees' awareness. As a result, the mid-high risk personnel decreased compared to previous years, indicating the gradual integration of information security awareness into the work environment of all employees.

Social Engineering Exercise

	2020	2021	2022	2023
High risk occurrence (personal information disclosure)	2.47%	3.43%	3.47%	1.14%
Medium risk occurrence (email links clicking)	7.37%	11.22%	7.36%	4.18%

Information Security Promotion Achievements

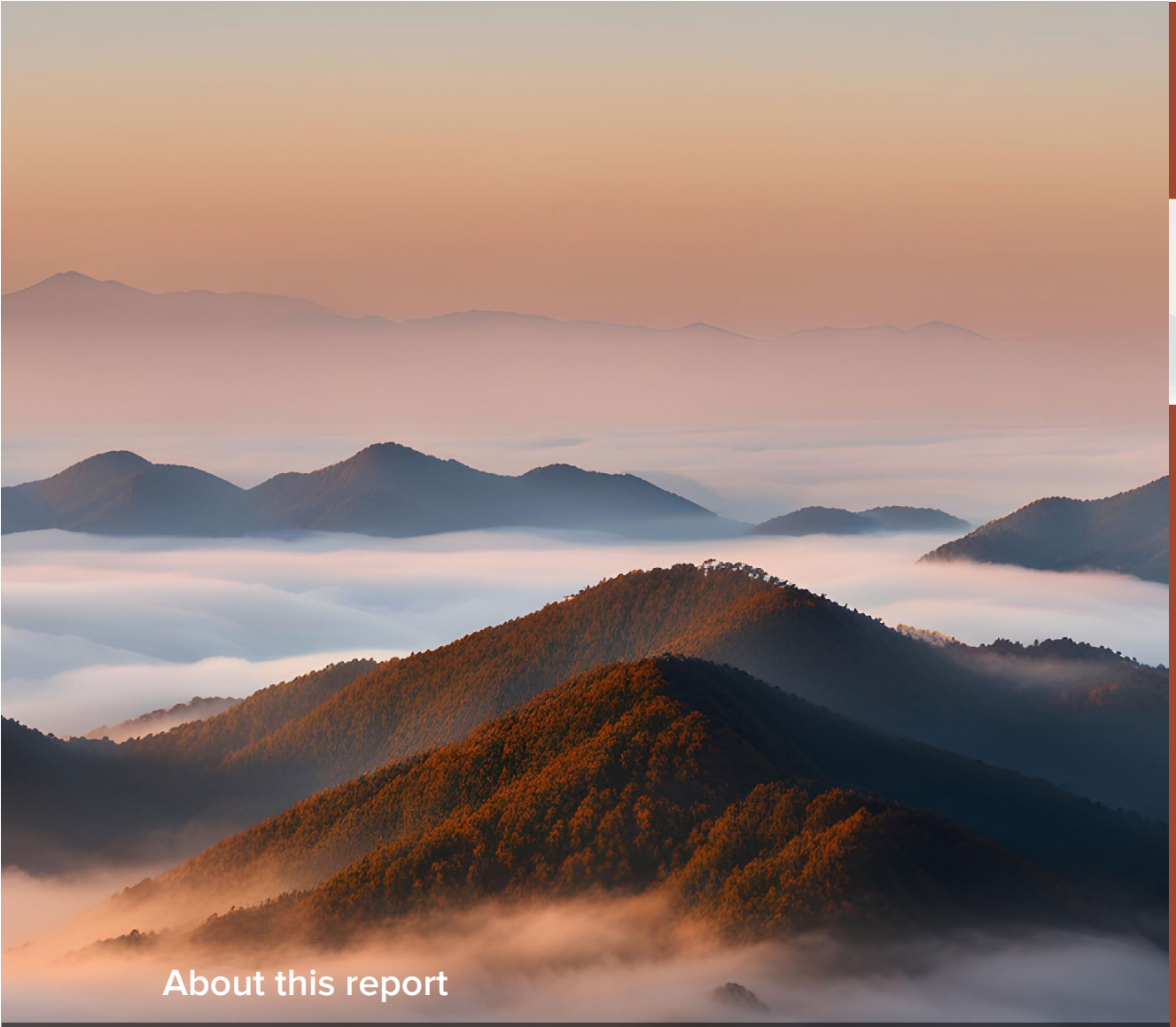
CTCI continues its proactive efforts in promoting information security, firmly adhering to the four main objectives in information security policy. We are dedicated to safeguarding the confidentiality, integrity, and availability. These efforts not only reflect our strength in the field of information security but also highlight our high regard and commitment to corporate operations and information security of customer.

Information Security Promotion Achievements in 2023

Information Security Risk Assessment	• Identifying 6 Key Information Security Risks • Conducting 1 Information Security Management Review Meeting
Information Security Management and Control Measures	• 100% Coverage of ISO 27001 Certification • 2 Internal Audits, 1 External Audit • 1 Network Security Assessment • 1 Simulated Hacker Attacks
Information Security Awareness Enhancement	• Participation In Information Security Education and Training Amounted to 694 Hours • 4 Social Engineering Exercises
Information Security Exercise	• 2 Business Continuity Plan Exercises

KPI of Information Security

	2020	2021	2022	2023
Total number of major information security incidents	0	0	0	0
Total number of customers and employees affected by information security incidents	0	0	0	0
Total number of cases involving violations of the customer's privacy	0	0	0	0



About this report

The name CTCI is used in this report to indicate content that is related to the scope of CTCI Corporation, while the name CTCI Group indicates content that is related to the scope of the entire group (the scope of operations as indicated in the consolidated financial report). Since the preparation of the 2007 Sustainability Report in 2008, CTCI has issued sustainability reports for 17 consecutive years. It is the first company in the domestic engineering service industry to invest in non-financial information disclosure, and proactively conveys the company's effort in sustainabilityto all stakeholders who care about CTCI so as to duly communicate with the stakeholders while maintaining their need. The sustainability report, published annually, had its previous edition released in June 2023, with the next report expected in June 2025.

CH4

APPENDIX

About this Report

This report follows the reporting principles of the GRI Standards (2021) and transparently discloses management apporach related to material issues. It also refers to standards such as the Sustainability Accounting Standards Board (SASB) - Engineering & Construction Services industry standards, the Task Force on Climate-Related Financial Disclosures (TCFD), and the United Nations Sustainable Development Goals (SDGs) as guiding principles and directions for future long-term development.

Timeframe of information disclosure	Scope of information collection: within the organization	Scope of information collection: outside the organization	Information quality management	GRI Level	Assurance level	Contact
January 1, 2023 to December 31, 2023	• CTCI and its construction sites at home and abroad	• Shareholders/ Investors • Suppliers/Contractors/ Partners (co-contractors) • Customers • Employees • Media • Community/ Government/Experts and Scholars	• Financial data - PricewaterhouseCoopers (PwC) • Quality Management - ISO 9001: 2015 • Environmental Management - ISO 14001: 2015 • Greenhouse Gas Inventory ISO 14064-1: 2018 • Occupational health and safety management：ISO 45001: 2018 • Sustainability information - AA 1000 AS V3 • Information Security Management - ISO 27001: 2013	GRI Standards 2021	AA 1000 AS V3 TYPE II High level of assurance	Stella Shih Sustainability & Net Zero Specialist ESG Office 886-2-28339999 Ext. 18602 stella.shih@ctci.com

Scope of information

- **Within the organization** — The timeframe of the information disclosed in this Report covers CTCI Corporation's various operations and statistical performance from January 1 to December 31, 2023, in areas ranging from operational management, environmental protection, to social participation. The scope of this Report generally covers CTCI and its construction sites at home and abroad, and excludes its branches and subsidiaries (Qatar, Abu Dhabi, Italy). However, some information does include CTCI's overseas operations. Two of CTCI's subsidiaries, ECOVE Environment Corporation and CTCI Advanced Systems Inc., have already published their own Sustainability Reports.
- **Outside the organization** — External scope of disclosure includes shareholdersand investors, suppliers/contractors/ partners (co-contractors), customers, employees, media, community/ government/ experts and scholars.

Review

- **Internal review** — The information and statistics found in this Report were collected and compiled by CTCI employees from various departments. They were first verified by departmental supervisors before being confirmed by the Reporting Team. We also commissioned external consulting team to offer suggestions for improvements. After all the data and statistics were fully prepared, they were separately reviewed by managers from each department, and then finally verified by the President, and passed by the board of directors on May 3, 2024. Information and statistics in this Report follow standardized format as part of our internal control to ensure reliability of the numbers and information quality.
- **External review** — The financial data found in this Report comes from audited financial statements in our Annual Report, which have been audited by CPA from Pricewaterhouse Coopers (PwC) and are expressed in New Taiwan Dollars (NTD). The environmental management system (ISO 14001), quality management system (ISO 9001), greenhouse gas inventory (ISO 14064-1), occupational safety and health management system (ISO 45001), and the information pertaining to sustainability found in this Report have all been verified by an impartial third party. In addition, the sustainability information in this Report is in accordance with AA1000 AS V3, TYPE II High level of assurance, and has been certified by an impartial third party.

CTCI's Sustainable Performance

CTCI's Sustainable Performance

CTCI's Role in Sustainability	Sustainable KPIs	Unit	2020	2021	2022	2023
The Most Reliable Global Engineering Services Provider	Contract Amount	100 million NTD	1,302	1,259	1,025	1,118
	Operating Income	100 million NTD	258.7	307.82	317	459
	Shareholders' Equity	%	27	24	23	21
	Ratio of Signing Codes of Ethical Conduct	%	100	100	100	100
	Coverage rate of Codes of Ethical Conduct Training (Taiwan)	%	100	100	100	100
	Cases number of Employee Opinion Platform	-	3	4	2	11
	Number of Official Cases on Employee Opinion Platform	-	3	2	2	1
	Coverage Rate of Risk Management Training	%	100	100	100	100
	Technological R&D expenditure	NTD	100,437,000	144,801,000	137,132,000	133,850,000
	Score of Customer Satisfaction	-	8.29	8.17	8.16	8.20
	Number of Suppliers	-	11,820	11,846	11,877	11,927
	Number of Tier 1 Suppliers	-	280	167	192	140
	Number of Significant Suppliers in Tier 1	-	53	46	55	44
	Proportion of Significant Suppliers in Tier 1	%	18.93	27.54	28.65	31.42
	Proportion of procurement amount from Tier 1 suppliers	%	95	95	95	95
	Proportion of procurement amount from Significant Suppliers in Tier 1	%	62.00	74.72	73.11	76
	Desk assessment ratio of Tier 1 Suppliers	%	82.2	86.8	89	91
	Desk assessment ratio of Significant Suppliers in Tier 1	%	100	100	100	100
	High risk ratio of Tier 1 Suppliers	%	4.6	6.6	3.6	2.1
	High risk ratio of Significant Suppliers in Tier 1	%	11.1	10.3	12.7	0
	Greenhouse Gas Emissions (Scope 1+2)	Tons of CO_2e	9,942	9,599	10,987 (market-based)	9,494 (market-based)
Guardian of Sustainable Earth	EUI of headquarters building 1	kWh/square meter	120.0	116.4	111.1	113.1
	Energy intensity at globe construction sites	kWh/million working hours	571,876	781,831	1,058,736	1,179,944
	Energy intensity at headquarters building and global construction sites	Tons of CO_2e/million operating income	0.38	0.31	0.35	0.21
	Cost saved from energy conservation at headquarters (power)	NTD	205,521	571,445	1,238,090	416,282
	Water consumption at headquarters	Cubic Meter	17,551	16,439	19,788	23,489
	Waste generated at headquarters (general waste)	kg	60,495	56,307	55,040	65,324

CTCI's Role in Sustainability	Sustainable KPIs		Unit	2020	2021	2022	2023
Guardian of Sustainable Earth	Recycling at headquarters	Paper	kg	14,020	12,060	10,802	9,832
		Metals	kg	255	288	665	452
		Plastic	kg	271	429	911	672
		Kitchen waste	kg	4,678	4,786	5,298	5,507
The Best Employer That Builds a Happy Workplace	Voluntary turnover rate		%	8.95	9.33	8.83	5.95
	Involuntary turnover rate		%	0.89	0.52	0.59	0.64
	Turnover ratio due to receiving poor results in performance appraisal		%	0.51	0.11	0.33	0.03
	Total turnover rate		%	10.35	9.96	9.75	6.62
	Recruitment ratio of indigenous people (excluding foreign migrant workers)		%	0.35	0.46	0.46	0.46
	Recruitment ratio of people with disabilities (excluding foreign migrant workers)		%	1.15	1.33	1.33	1.33
	Number of nationalities of employees (excluding R.O.C. nationality)		-	10	12	12	12
	Female employee ratio		%	23.97	25.34	27.29	28.63
	Female supervisor ratio		%	13.54	13.82	14.27	14.97
	Replenishment rate of job vacancies filled internally		%	60.00	65.52	66.67	76.47
	Average training hours		hour	68.26	70.04	65.2	73.01
	Human Capital ROI (CTCI Group)		%	16.58	19.83	23.79	22.98
	Parental leave application rate		%	23.48	21.88	26.72	19.27
	Health check rate		%	89.9	86.4	90.5	91.9
	CTCI's rate of recordable work-related injuries		-	0.03	0	0	0
	Subcontractor's rate of recordable work-related injuries		-	0.09	0.12	0.10	0.08
	Number of Occupational illnesses		-	0	0	0	0
A Corporate Citizen Willing to Commit	Social investment		NTD	15,301,934	21,200,390	20,619,913	37,478,886
	Category	Charity activity ratio	%	3	22	9	4
		Community investment ratio	%	45	37	53	69
		Commercial activities ratio	%	52	41	38	27
	Type of contribution	Cash donation ratio	%	85.90	97.49	86.02	48.92
		Goods donation ratio	%	0.65	0.19	0.23	0.87
		Volunteer ratio	%	13.43	2.25	10.22	5.55
		Management cost ratio	%	0.02	0.07	3.53	44.66

Material Issues Target Progress

Material Issues	2023 Target	Status	2024 Target
Innovative technology and services	KPI 1 - Complete the rule-based design; development target: 100%	Achieved	KPI 1 - Complete the rule-based design; development target: 100%
	KPI 2 - Intelligent EPC projects development; development target: 100%	Achieved	KPI 2 - Intelligent EPC projects development; development target: 100%
	KPI 3 - Design training course for professional technical skills; development target: 100%	Achieved	KPI 3 - Design training course for professional technical skills; development target: 100%
	KPI 4 - Introduction of new technologies and new skills: 3 items	Achieved	KPI 4 - Research, introduce, or implement new technologies and techniques: 3 items
Supply chain sustainability management	KPI 1 - Tier 1 suppliers who have completed written audits: 90% (199 firms)	Achieved	KPI 1 - Tier 1 suppliers who have completed written audits: 92%
	KPI 2 - On-site audit achievement rate of ESG high-risk suppliers: 100%	Achieved	KPI 2 - On-site audit achievement rate of ESG high-risk suppliers: 100%
	KPI 3 - The rate of improvement to deficiencies identified in audit of ESG high-risk suppliers: 80%	Achieved	KPI 3 - The rate of improvement to deficiencies identified in audit of ESG high-risk suppliers: 80%
	KPI 4 - Cultivate the greenhouse gas management capabilities of suppliers and complete the capacity building of 100 suppliers.	Achieved	KPI 4 - Cultivate the greenhouse gas management capabilities of suppliers and complete the capacity building of 160 suppliers.
Integrity management	KPI 1 - Completion rate of integrity management courses among employees: 90%	Achieved	KPI 1 - Completion rate of integrity management courses among employees: 90%
Brand management	KPI 1 - A total of 200 reports on CTCI by the media	Achieved	KPI 1 - A total of 200 reports on CTCI by the media
Customer service and management	KPI 1 - Customer satisfaction: 8 points	Achieved	KPI 1 - Customer satisfaction: 8 points
	KPI 2 - Response rate of customer satisfaction survey: 100%	Achieved	KPI 2 - Response rate of customer satisfaction survey: 100%
Climate strategy and net zero results	KPI 1 - Reduction of 15% in headquarters carbon emissions	Achieved	KPI 1 - Reduction of 25% in headquarters carbon emissions
Net zero EPC and green engineering	KPI 2 - Total carbon emissions in the headquarters reduced by 12.6% (Note: Total carbon emissions are the total carbon emissions of headquarters and global construction sites)	Achieved	KPI 2 - Total carbon emissions in the headquarters reduced by 16.8% (Note: Total carbon emissions are the total carbon emissions of headquarters and global construction sites)
	KPI 1 - The proportion of projects that adopt at least one green process: 80%		KPI 1 - The proportion of projects that adopt at least one green process: 80%
Safe and healthy work environment	KPI 2 - The proportion of undertaking low-carbon and green engineering project: 30%	Achieved	KPI 2 - The proportion of undertaking low-carbon and green engineering project: 30%
	KPI 1 - Frequency of OSHA total recordable case rate (TRCR): ≤0.1	Achieved	KPI 1 - Frequency of OSHA total recordable case rate (TRCR): ≤0.1
Career development and training	KPI 2 - Health abnormalities tracking rate: 92%	Achieved	KPI 2 - Health abnormalities tracking rate: 93%
	KPI 1 - Core competencies and inventory and confirmation of key positions: 100%	Achieved	KPI 1 - Core competencies and inventory and confirmation of key positions: 100%
	KPI 2 - Position/job description: 100%	Achieved	KPI 2 - Position/job description: 100%
	KPI 3 - Completion rate of training blueprint architecture: 100%	Achieved	KPI 3 - Completion rate of training blueprint architecture: 100%
Talent recruitment and retention	KPI 4 - Completion rate of career development and job rotation: 100%	Achieved	KPI 4 - Completion rate of career development and job rotation: 100%
	KPI 1 - Retention rate for key positions: 90%	Achieved	KPI 1 - Retention rate for key positions: 90%
	KPI 2 - Employer brand and recruitment pipeline enhancement: cooperation with 12 universities	Achieved	KPI 2 - Employer brand and recruitment pipeline enhancement: cooperation with 12 universities
	KPI 3 - Tailor-made training and planning architecture: 100%	Achieved	KPI 3 - Tailor-made training and planning architecture: 100%
Social Influence Enhancement	KPI 1 - Event themes: 19 items	Achieved	KPI 1 - Event themes: 20 items
	KPI 2 - Event sessions: 110 sessions	Achieved	KPI 2 - Event sessions: 130 sessions
	KPI 3 - Total event participants and submissions: 11,000 people and 75 submissions	Achieved	KPI 3 - Total event participants and submissions: 11,000 people and 80 submissions
	KPI 4 - Number of partners: 85	Achieved	KPI 4 - Number of partners: 90

Management Approach

	Innovative technology and service	Supply chain sustainability management	Integrity management	Brand Management
Impact description	● Technology R&D and innovation are beneficial to the upgrade and development of industrial technology ● Assist customers in bringing more successes and application cases through innovative technology and services ● Increase direct employment and job opportunities	● Joint supply chain cooperation in technology R&D and innovation is beneficial to the development and application of industrial technology ● Increase industrial output value and indirect job opportunities through procurement needs ● Social cost of carbon from supply chain greenhouse gas emissions, including economic disruption, human health damage, ecosystem degradation, etc.	● Lead suppliers or partners to raise awareness and knowledge of integrity management ● Provide employees with the core value of integrity management to avoid damage to the Company's culture and operations ● Lack of awareness of the code of conduct may result in improper use of data or customer privacy	● Strengthen the cooperative relationship with customers through brand management to create company revenue and business growth ● False reports and negative public opinion may damage the image and reputation of the Group ● Use the brand to communicate sustainable trends and issues of public concern to achieve common participation and action
Commitment	Provide enhanced engineering quality, improved efficiency of project execution, and differentiated services to clients through research and development and increasing access to intelligent technology to strengthen expertise	Through supplier sustainability management system to strength the effieciency of supplier sustainability management and form a positive cycle to expand the sustainability influence of suppliers	Corporate culture of integrity management helps bring a sound business operation and risk management, laying the foundation of sustainable business.	Build the "Most Reliable" brand image and enhance brand recognition around the globe through brand management; increase customer adhesion and help develop businesses into new markets.
Strategy	● Rule-based (Rules) design development ● Intelligent EPC (EPC turnkey) project development ● Cultivate colleagues' awareness of new technology application ● Keep enthusiasm in innovation and R&D to foster digital transformation	● Promote advocacy of sustainable development through supplier meetings ● Foster an assessment system capable of conducting assessments ● Implement local procurement	● Enhance awareness on the core value of integrity management ● Implement performance assessment and reporting mechanism	● Strengthen reputation management of the Group and enhance brand image
2030 Goals	KPI 1 - Complete the Rule-based Design and Design Chip; Development progress: 100% KPI 2 - Enhance engineering design capabilities; Development progress: 100% KPI 3 –Digital transformation projects development; Development progress: 100% KPI 4 – Development progress: 100% Number of technologies and techniques developed, introduced or imported each year: 5 items	KPI 1 - Tier 1 suppliers who have completed written audits: 100% KPI 2 - On-site audit achievement rate of ESG high-risk suppliers: 100% KPI 3 - The rate of improvement to deficiencies identified in audit of ESG high-risk suppliers: 100% KPI 4 - Cultivate the greenhouse gas management capabilities of suppliers and complete the capacity building of 500 suppliers.	KPI 1 - Completion rate of integrity management courses among employees: 100% KPI 2 - Review integrity management regulations and mechanisms every year and conduct trainings on integrity management for business partners at least once a year	KPI 1 -A total of 300 reports on CTCI by the media
Program	● Data digitalization, process optimization, and automation ● Development of engineering technology	● Enhance awareness of code of conduct ● Convene supplier meetings ● Perform audit and corrective measures	● Employee education and training ● Code of conduct promotion	● Improve media relations ● Enhance digital marketing ● Foster fast response capability in crisis management
Responsibility	Engineering Division, Group Research & Innovation Center	Procurement Division	Human Resource Department, Procurement Division	Brand Management Department
Mechanism	External evaluation, customer satisfaction survey	DJSI evaluation, customer feedback	Corporate governance evaluation, External reporting mechanism	Group Press Release Management Regulations

	Customer service and management	Climate strategy and net zero results	Net zero EPC and green engineering	Safe and healthy work environment
Impact description	● Utilize product or technology R&D and innovation to assist customers in achieving more successful cases and applications to generate revenue ● Increase after-tax profit and financial capital of investors through customer service and management ● Assist customers in generating environmental benefits during operation through Net Zero EPC and green engineering technologies	● Implement Net Zero EPC and green engineering technologies to create environmental benefits for products or services, including water saving, carbon reduction, energy saving, waste reduction ● Social costs of carbon derived from greenhouse gas emissions, such as economic disruption, human health damage, ecosystem degradation, etc. ● Energy consumption and pollution emissions that affect human health and the ecosystem	● Technology R&D and innovation of net zero EPC and green engineering are helpful to the development of technology in the engineering industry ● Assist clients in creating environmental benefits during operation, including water saving, carbon reduction, energy saving, and waste reduction ● Drive procurement demand through innovative technology, resulting in the output value of the engineering industry chain	● Operations and the supply chain may risk human rights impact ● Occupational injury that causes physical or mental suffering to CTCI employees and consumes medical resources ● Occupational injury that causes physical or mental harm to suppliers/contractors' employees and consumes medical resources
Commitment	Uphold the corporate mission "To Satisfy Our Customers with Optimized Engineering Services" to constantly overcome obstacles and challenge ourselves in order to take CTCI to the global stage, and provide customers with the best and most reliable services	As global climate change exacerbates, CTCI will transform into low-carbon business model, aiming to save energy consumption and reduce operation cost by taking energy-saving measures and utilizing renewable energy.	Promote low-carbon green engineering through the development of innovative net zero EPC technology, and the introduction of carbon capture & storage technology and circular energy transition technology	Provide a safe and secure workplace, promote various health promotion activities, lower the rate of occupational injury and construction risks, create a healthy workplace, and enhance employee loyalty.
Strategy	● Standardize operation procedures ● Integrate internal and external units to bring effective customer communication	● Strengthen energy management ● Use renewable energy	● Increase resource recycling and reuse ● Energy-saving plan for application system ● Promote green engineering improvement proposals	● Implement self-management of HSE at construction sites ● Ingrain the HSE culture into the minds of all employees ● Increase employees' capability and awareness of HSE ● Develop and introduce Group Health Care Platform
2030 Goals	KPI 1- Customer satisfaction score: 8 points KPI 2- Response rate of customer satisfaction survey: 100%	KPI 1 - 100% reduction in headquarters carbon emissions KPI 2 - 45% reduction in total carbon emissions (Note: Total carbon emissions are from headquarters and global construction sites; the amount of emission includes scope 1 and scope 2 emissions)	KPI 1 - The proportion of projects that adopt at least one green process: 80% KPI 2 - The proportion of undertaking low-carbon and green engineering project: 30%	KPI 1 - Frequency of OSHA total recordable case rate (TRCR): ≤0.1 KPI 2 - Health check abnormalities tracking rate: 95%
Program	● Improve standards / procedures of service quality ● Hold competitions to enhance employees' awareness ● Conduct satisfaction surveys on 24 projects	● Climate risk management ● Greenhouse gas inventory and reduction	● Promote low-carbon projects ● Research and development of green technology	● Conduct construction sites audits in weekdays and weekends ● Increase safety awareness at construction sites and agile education training ● Workplace health promotion
Responsibility	Project & Sales Department	The entire company	Engineering Division	HSE Management Department and AGS Department
Mechanism	Customer Opinion Task Force, Quality management review meeting	DJSI external evaluation, CDP external evaluation and ISO 14064	ESG & Net Zero Committee, Customer satisfaction, External evaluation	ISO 45001

	Career development and training	Talent recruitment and retention	Social Influence Enhancement
Impact description	● Provide employees with a decent lifestyle and well-being thourgh salary paymeny and pay rise ● Increase employment and job opportunities to bring about skill upgrades ● Support the Company's momentum in product or technology R&D and innovation	● Increase direct employment and job opportunities ● Manpower in key positions helps the Company's business growth and raises investors' financial capital ● Manpower in key positions supports the R&D and innovation momemtum of the Company's products and technologies	● Enhance the environment or life quality of the community through social participation or charity input ● Cultivate sustainable engineering talents to bring skills upgrade and increase employment and job opportunities ● Organize engineering-related activities and seminars to promote the innovation and application of engineering industry technology
Commitment	Plan a complete and comprehensive training blueprint, and a systematic and planned career development path to achieve the purpose of promoting, cultivating, and discovering talents for the company based on different organizational structures and levels	Improve the rate of talent recruitment and retention with the aid of new technologies and behavioral-structured interviews; provide comprehensive and competitive compensation plan, friendly and healthy workplace, and comprehensice learning development to achieve the goal of talent retention	Based on professional core competencies, CTCI is committed to giving back to the society, promoting green technology application, as well as cultivating talents for sustainable engineering, so as to enhance the Company's brand image and connect with the development of green business innovation
Strategy	● Support from supervisors at all levels ● Systematic framework (e.g.,CTCI University) ● Referential-related evaluation, integration and application of virtual reality ● Conduct 1:1 teaching and coaching	● Diverse recruitment channels ● Competitive salary and friendly workplace ● Well-rounded training and job rotation ● Career development based on company growth and personal interests	● Cooperate with external organizations to organize events ● Combine the concept of public welfare in its core operational competencies ● Host international cooperation seminars ● Take part in sustainability initiatives
2030 Goals	KPI 1 - Achievement rate of professional competence assessment: 95% KPI 2 - Implementation rate of personal development plan: 90% KPI 3 - Completion rate of career planning path: 85%	KPI 1 - Enhance the technical capability of key personnel; key personnel achieving a 5.0 (Master level) competency rating: 80% KPI 2 - Define market positioning standards for compensation; check and adjust compensation system each year KPI 3 - Make plans of long-term incentive compensation tools such as restrictive stocks	KPI 1 - Event themes: 20 items KPI 2 - Event sessions: 150 sessions KPI 3 - Number of participants: 15,000 KPI 4 - Number of parties involved in the industry, government, and university cooperation: 120
Program	● Promote CTCI University ● The development plan of elites	● Campus / international talent recruitment ● Incentives for long-term retention ● Employee engagement survey	● ESG events participation of all employees ● Promotion of campus and youth sustainability activities
Responsibility	Human Resources Department	Human Resources Department	CTCI Education Foundation
Mechanism	Committee of human resources development	Human Resources Development Committee	External evaluations and feedback from stakeholders

GRI Standards Index

Statement of Use：CTCI has reported in accordance with the GRI Standards for the period from January 1, 2023 to December 31, 2023.

GRI 1 used：GRI 1: Foundation 2021

Applicable GRI Sector Standard：N/A

GRI Standard	Disclosure		Corresponding Chapter(s)	page
General disclosures				
GRI 2: General Disclosures 2021	2-1	Organizational details	Group Operations	8
	2-2	Entities included in the organization's sustainability reporting	Group Operations (The entity reported in this report is CTCI, excluding other entities with consolidated financial statements; ECOVE and CTCI Advanced Systems Inc. have published sustainability reports separately.)	209
	2-3	Reporting period, frequency and contact point	About this Report	209
	2-4	Restatements of information	Environmental and Resource Management (The energy intensity of the sites in 2023 included in the usage of gasoline and diesel, and the 2020-2022 data updated to match the actual energy usage)	93
	2-5	External assurance	Third-Party Assurance Statement (Conduct external third-party verification in accordance with CTCI Sustainability Promotion and Report Publication Management Regulations)	227
	2-6	Activities, value chain and other business relationships	Group Operations / Sustainable Supply Chain Management	8、54
	2-7	Employees	Talent Recruitment and Retention	121
	2-8	Workers who are not employees	Talent Recruitment and Retention	121
	2-9	Governance structure and composition	Corporate Governance	188
	2-10	Nomination and selection of thehighest governance body	Corporate Governance	188
	2-11	Chair of the highest governance body	Corporate Governance	189
	2-12	Role of the highest governance body in overseeing the management of impacts	Policy and Organization	18
	2-13	Delegation of responsibility for managing impacts	Policy and Organization	19
	2-14	Role of the highest governance body in sustainability reporting	Policy and Organization / About this Report	19
	2-15	Conflicts of interest	Corporate Governance	19
	2-16	Communication of critical concerns	Policy and Organization	19
	2-17	Collective knowledge of the highest governance body	Corporate Governance	189
	2-18	Evaluation of the performance of the highest governance body	Corporate Governance	191

GRI Standard	Disclosure		Corresponding Chapter(s)	page
General disclosures				
GRI 2 : General Disclosures 2021	2-19	Remuneration policies	Corporate Governance	191
	2-20	Process to determine remuneration	Corporate Governance	191
	2-21	Annual total compensation ratio	Corporate Governance	191
	2-22	Statement on sustainable development strategy	From the Management / CTCI 2030 Sustainability Goals / Materiality and Stakeholder Communication	4、34、25
	2-23	Policy commitments	Integrity Management	38
	2-24	Embedding policy commitments	Integrity Management / Sustainable Supply Chain Management	38、54
	2-25	Processes to remediate negative impacts	Management Approach / Integrity Management	214、40
	2-26	Mechanisms for seeking advice and raising concerns	Integrity Management	40
	2-27	Compliance with laws and regulations	Internal Audit and Compliance / Safe and Healthy Working Environment / Environmental and Resource Management / Management ApproachEngineering and Social Welfare	192、142、91、214
	2-28	Membership associations	Materiality and Stakeholder Communication	165
	2-29	Approach to stakeholder engagement	No significant change	25
	2-30	Collective bargaining agreements		-
Material topic				
GRI 3: Material Topics 2021	3-1	Process to determine material topics	Materiality and Stakeholder Communication	25
	3-2	List of material topics	Materiality and Stakeholder Communication	25
Material topic_Innovative technology and service				
GRI 3: Material Topics 2021	3-3	Management of material topics	Materiality and Stakeholder Communication	25
Particular Topic	-	-	Innovative Technologies and Services	41
Material topic_Supply chain sustainability management				
GRI 3: Material Topics 2021	3-3	Management of material topics	Materiality and Stakeholder Communication	25
GRI 2: General Disclosures2021	2-6	Activities, value chain and other business relationships	Group Operations / Sustainable Supply Chain Management	8、54
GRI 308: Supplier Environmental Assessment	308-1	New suppliers that were screened using environmental criteria	Sustainable Supply Chain Management	56
	308-2	Negative environmental impacts in the supply chain and actions taken	Sustainable Supply Chain Management	56
GRI 414: Supplier Social Assessment	414-1	New suppliers that were screened using social criteria	Sustainable Supply Chain Management	56

GRI Standard	Disclosure		Corresponding Chapter(s)	page
Material topic_Integrity management				
GRI 3 : Material Topics 2021	3-3	Management of material topics	Materiality and Stakeholder Communication	25
GRI 2: General Disclosures 2021	2-27	Compliance with laws and regulations	Internal Audit and Compliance / Safe and Healthy Working Environment / Environmental and Resource Management / Management Approach	192、142、91、214
GRI 205 : Anti-corruption	205-1	Operations assessed for risks related to corruption	Integrity Management	39
	205-3	Confirmed incidents of corruption and actions taken	Integrity Management	39
Material topic_Brand Management				
GRI 3 : MaterialTopics 2021	3-3	Management of material topics	Materiality and Stakeholder Communication	25
Particular Topic	-	-	Group Operations / Sustainable Supply Chain Management	8、54
Material topic_Customer service and management				
GRI 3 : Material Topics 2021	3-3	Management of material topics	Materiality and Stakeholder Communication	25
GRI 418 : Customer Privacy	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	No such events occurred in 2023	-
Material topic_Efforts on climate strategy and Net Zero emissions				
GRI 3 : Material Topics 2021	3-3	Management of material topics	Materiality and Stakeholder Communication	25
GRI 201 : Economic Performance	201-2	Financial implications and other risks and opportunities due to climate change.	Strengthen Climate Resilience	79
GRI 302 : Energy	302-1	Energy consumption within the organization	Strengthen Climate Resilience	91
	302-3	Energy intensity	Strengthen Climate Resilience	93
	302-4	Reduction of energy consumption	A Trailblazer of Application of Environmentally-Friendly Technologies	94
	302-5	Reductions in energy requirements of products and services	A Trailblazer of Application of Environmentally-Friendly Technologies	94
GRI 305 : Emissions	305-1	Direct (Scope 1) GHG emissions	Strengthen Climate Resilience	87
	305-2	Energy indirect (Scope 2) GHG emissions	Strengthen Climate Resilience	87
	305-3	Other indirect (Scope 3) GHG emissions	Strengthen Climate Resilience	88
	305-4	GHG emissions intensity	Strengthen Climate Resilience	93
	305-5	Reduction of GHG emissions	A Trailblazer of Application of Environmentally-Friendly Technologies	86
	305-6	Emissions of ozone-depleting substances (ODS)	No Emissions	-
	305-7	Nitrogen oxides (NO_x), sulfur oxides (SO_x), and other significant air emissions	Based on CTCI's main operational attributes, the major gas emissions are suspended particulates (dust). However, due to the nature of the operations, monitoring is not required, and no relevant data has been obtained. To mitigate dust, various operational sites have implemented control measures such as water spraying and dust nets.	-

GRI Standard	Disclosure		Corresponding Chapter(s)	page
Material topic_Net Zero EPC and Green Engineering				
GRI 3 : Material Topics 2021	3-3	Management of material topics	Materiality and Stakeholder Communication	28
GRI 302 : Energy	302-1	Energy consumption within the organization	Environmental and Resource Management	92
	302-3	Energy intensity	Environmental and Resource Management	93
	302-4	Reduction of energy consumption	Environmental and Resource Management	94
	302-5	Reductions in energy requirements of products and services	Environmental and Resource Management	68
Material topic_Safe and healthy work environment				
GRI 3 : Material Topics 2021	3-3	Management of material topics	Materiality and Stakeholder Communication	25
GRI 403 : Occupational Health and Safety (2018)	403-1	Occupational health and safety management system	Safe and Healthy Working Environment	143
	403-2	Hazard identification, risk assessment, and incident investigation	Safe and Healthy Working Environment	144
	403-3	Occupational health services	Safe and Healthy Working Environment	153
	403-4	Worker participation, consultation, and communication on occupational health and safety	Safe and Healthy Working Environment	147
	403-5	Worker training on occupational health and safety	Safe and Healthy Working Environment	144
	403-6	Promotion of worker health	Safe and Healthy Working Environment	153
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Safe and Healthy Working Environment	151
	403-8	Workers covered by an occupational health and safety management system	Safe and Healthy Working Environment	151
	403-9	Work-related injuries	Safe and Healthy Working Environment	152
	403-10	Work-related ill health	Safe and Healthy Working Environment	152
Material topic_Career development and training				
GRI 3 : Material Topics 2021	3-3	Management of material topics	Safe and Healthy Wavironment	25
GRI 404 : Training and Education	404-1	Average hours of training per year per employee	Career Development and Training	132
	404-2	Programs for upgrading employee skills and transition assistance programs	Career Development and Training	136
	404-3	Percentage of employees receiving regular performance and career development reviews	Career Development and Training	129

GRI Standard	Disclosure		Corresponding Chapter(s)	page
Material topic_Recruitment and retention				
GRI 3 : Material Topics 2021	3-3	Management of material topics	Materiality and Stakeholder Communication	25
GRI 202 : Market Presence	202-1	Ratios of standard entry level wage by gender compared to local minimum wage	Talent Recruitment and Retention	124
	202-2	Proportion of senior management hired from the local community	Talent Recruitment and Retention	122
GRI 401 : Employment	401-1	New employee hires and employee turnover	Talent Recruitment and Retention	118
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Talent Recruitment and Retention	123
	401-3	Parental leave	Talent Recruitment and Retention	125
Material topic_Social Influence Enhancement				
GRI 3 : Material Topics 2021	3-3	Management of material topics	Materiality and Stakeholder Communication	25
GRI 203 : Indirect Economic Impacts	203-1	Infrastructure investments and services provided supported	Engineering and social welfare	163
	203-2	Significant indirect economic impacts	Materiality and Stakeholder Communication	25
GRI 413 : Local Communities	413-1	Operations with local community engagement, impact assessments, and development programs	Social Influence (Implemented in all locations)/Project Evaluation	160、49
	413-2	Operations with significant actual and potential negative impacts on local communities	Social Influence (No significant actual or potential negative impact)	160

GRI 300: Environmental Series				
Series	Disclosure		Corresponding Chapter(s)	page
GRI 201 : Economic Performance	201-1	Direct economic value generated and distributed	Financial Performance	12
GRI 204：Procurement Practices	204-1	Proportion of spending on local suppliers	Sustainable Supply Chain Management	54
GRI 206：Anti-competitive Behavior	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	Business Ethics & Integrity Management	39

GRI 300: Environmental Series				
Series	Disclosure		Corresponding Chapter(s)	page
GRI 301：Materials	301-3	Reclaimed products and their packaging materials	Circular Economy	90
GRI 306：Waste(2020)	306-2 (Management Approach)	Management of significant waste-related impacts	Materiality and Stakeholder Communication、Environmental and Resource Management	25、91
	306-3	Waste generated	Environmental and Resource Management	100
	306-4	Waste diverted from disposal	Environmental and Resource Management	100
	306-5	Waste directed to disposal	Environmental and Resource Management	100

GRI 400: Social Series				
Series	Code	Disclosure	Corresponding Chapter(s)	page
GRI 402：Labor/Management Relations	402-1	Minimum notice periods regarding operational changes	In the case that the Company experiences major changes that may affect the rights of the employees, we will safeguard our employees' interests in accordance with Article 16 of the Labor Standards Act and the time of notification will be clearly stated in the employee handbook.	-
GRI 405：Diversity and Equal Opportunity	405-1	Diversity of governance bodies and employees	Corporate Governance / Talent Recruitment and Retention	189、118
	405-2	Ratio of basic salary and remuneration of women to men	Talent Recruitment and Retention	124
GRI 406：Non-discrimination	406-1	Incidents of discrimination and corrective actions taken	No incidents of discrimination occurred in 2023	-
GRI 407：Freedom of Association and Collective Bargaining	407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	Sustainable Supply Chain Management A total of 253 employees in CTCI and the domestic subsidiaries under the Group Engineering Business participated in the Company's union, ccounting for 6.88%.	54
GRI 408：Child Labor	408-1	Operations and suppliers at significant risk for incidents of child labor	Sustainable Supply Chain Management / Labor Rights and Human Rights	54、137
GRI 409：Forced or Compulsory Labor	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	Sustainable Supply Chain Management / Labor Rights and Human Rights	54、137
GRI 415 Public Policy	415-1	Political contributions	We are politically neutral and have not donated to any political parties, politicians, or related institutions.	164

Notes：For the above articles, GRI Standards 2018 is referred to by GRI 403, GRI Standards 2020 is referred to by GRI 306 and GRI Standards 2016 is referred to by all other goals.

SASB Index

Topic	Code	Category	Accounting Index	Chapter	page
Project's environmental impact	IF-EN-160a.1	Quantity	Number of cases in violation of environmental permits, standards or regulations	Environmental and Resource Management	91
	IF-EN-160a.2	None	Discussion on the influence of the project's design, site selection and construction on environmental risk management and assessment process.	A Trailblazer of Application of Environmentally-Friendly Technologies	68
Structural integrity and safety of the construction	IF-EN-250a.1	Amount	Reconstruction costs related to defects and safety	No such events occurred in 2023	-
	IF-EN-250a.2	Amount	The total monetary cost of legal proceedings due to defects and safety-related reconstruction	No such events occurred in 2023	-
Workers' health and safety	IF-EN-320a.1	Ratio	1. Employees' accident and death rates	Safe and Healthy Work Environment	152
			2. Contractors' accident and death rates	Safe and Healthy Work Environment	152
Life cycle assessment of constructions	IF-EN-410a.1	Quantity	1. The number of projects that have passed the third-party sustainability certification	A Trailblazer of Application of Environmentally-Friendly Technologies	75
			2. The number of projects seeking such certification	A Trailblazer of Application of Environmentally-Friendly Technologies	75
	IF-EN-410a.2	None	Discussion on incorporating operational energy and water usage efficiency factors into project planning and design	Strengthen Climate Resilience	76
Climate impact	IF-EN-410b.1	Amount	Total monetary amount of fossil fuel and renewable energy projects in the backlog of contracts	A Trailblazer of Application of Environmentally-Friendly Technologies	75
	IF-EN-410b.2	Amount	Total monetary amount of fossil fuel projects being cancelled in the backlog of contracts	A Trailblazer of Application of Environmentally-Friendly Technologies	75
	IF-EN-410b.3	Amount	The total monetary amount of non-energy projects related to climate change mitigation in the backlog of contracts	A Trailblazer of Application of Environmentally-Friendly Technologies	75
Business ethics	IF-EN-510a.1	Quantity,Amount	The number and monetary amount of backlog of contracts in the 20 lowest ranking countries on the Transparency International's Corruption Perception Index	Business Ethics & Integrity Management	39
	IF-EN-510a.2	Amount	The total monetary cost of legal proceedings arising from violations of bribery/corruption and anti-com petitive behavior laws and regulations	Business Ethics & Integrity Management	39
	IF-EN-510a.3	None	Describe policies and specific actions to prevent (1) bribery/corruption and (2) anti-competitive behavior during the bidding process	Business Ethics & Integrity Management	39

Topic	Code	Category	Accounting Index	Chapter	page
Activity indicators	IF-EN-000.A	Quantity	Number of backlog of contracts	Group Operations	12
	IF-EN-000.B	Quantity	Number of completed projects	Group Operations	12
	IF-EN-000.C	Amount	Monetary amount of backlog of contracts	Group Operations	11

TCFD Index

Elements	Recommended Disclosures	Chapter	page
Governance	Describe the board's oversight of climate-related risks and opportunities	Policy and Organization、Strengthen Climate Resilience	18、76
	Describe management's role in assessing and managing climate-related risks and opportunities.	Policy and Organization、Strengthen Climate Resilience	18、76
Strategy	Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	Strengthen Climate Resilience	79
	Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	Strengthen Climate Resilience	79
	Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	Strengthen Climate Resilience	79
Risk Management	Describe the organization's processes for identifying and assessing climate-related risks.	Strengthen Climate Resilience	79
	Describe the organization's processes for managing climate-related risks.	Strengthen Climate Resilience / Risk Management Policy and Procedure、Risk Management Implementation Mechanism	79、193、194
	Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	Strengthen Climate Resilience / Risk Management Policy and Procedure、Risk Management Implementation Mechanism	79、193、194
Metrics and Targets	Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	Greenhouse Gas Management / Environmental and Resource Management	86、91
	Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	Greenhouse Gas Management / Environmental and Resource Management	87、91
	Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	Greenhouse Gas Management / Environmental and Resource Management	86、92

TNFD Index

Elements	Recommended Disclosures	Chapter	page
Governance	Describe the board's oversight of nature-related dependencies, impacts, risks and opportunities.	Climate-Related Financial Disclosures	76
	Describe management's role in assessing and managing nature-related dependencies, impacts, risks and opportunities.	Climate-Related Financial Disclosures	76
	Describe the organisation's human rights policies and engagement activities, and oversight by the board and management, with respect to Indigenous Peoples, Local Communities, affected and other stakeholders, in the organisation's assessment of, and response to, nature-related dependencies, impacts, risks and opportunities.	Climate-Related Financial Disclosures	76
Strategy	Describe the nature-related dependencies, impacts,risks and opportunities the organisation has identified over the short, medium and long term.	Biodiversity	102
	Describe the effect nature-related dependencies, impacts, risks and opportunities have had on the organisation's business model, value chain, strategy and financial planning, as well as any transition plans or analysis in place.	Biodiversity	102
	Describe the resilience of the organisation's strategy to nature-related risks and opportunities, taking into consideration different scenarios.	Biodiversity	105
	Disclose the locations of assets and/or activities in the organisation's direct operations and, where possible, upstream and downstream value chain(s) that meet the criteria for priority locations.	Biodiversity	111
Risk Management	(1) Describe the organisation's processes for identifying, assessing and prioritising nature-related dependencies, impacts, risks and opportunities in its direct operations. (2)Describe the organisation's processes for identifying, assessing and prioritising nature-related dependencies, impacts, risks and opportunities in its upstream and downstream value chain(s).	Biodiversity	105 104
	Describe the organisation's processes for managing nature-related dependencies, impacts, risks and opportunities.	Biodiversity	105
	Describe how processes for identifying, assessing, prioritising and monitoring nature-related risks are integrated into and inform the organisation's overall risk management processes.	Biodiversity	106
Metrics and Targets	Disclose the metrics used by the organisation to assess and manage material nature-related risks and opportunities in line with its strategy and risk management process	Biodiversity	109
	Disclose the metrics used by the organisation to assess and manage dependencies and impacts on nature.	Biodiversity	109
	Describe the targets and goals used by the organisation to manage nature-related dependencies, impacts, risks and opportunities and its performance against these.	Biodiversity	105

ASSURANCE STATEMENT

SGS TAIWAN LTD.'S REPORT ON SUSTAINABILITY ACTIVITIES IN THE CTCI Corporation's SUSTAINABILITY REPORT FOR 2023

NATURE AND SCOPE OF THE ASSURANCE

SGS Taiwan Ltd. (hereinafter referred to as SGS) was commissioned by CTCI Corporation (hereinafter referred to as CTCI) to conduct an independent assurance of the Sustainability Report for 2023. The scope of assurance is based on the SGS Sustainability Report Assurance methodology and AA1000 Assurance Standardv3 Type 2 High level to assess whether the text and data in accompanying tables contained in the report and complies with the GRI Standards and AA1000 Accountability Principles (2018) during on-site assurance from 2024/03/05 to 2024/04/12 in CTCI headquarter. The boundary of this report includes CTCI Taiwan and oversea operational and service sites' specific performance data included the sampled text, and data in accompanying tables, contained in the report presented. The assurance process did not include the evaluation of specific performance information outside the scope, such as Task Force Climate-related Financial Disclosures (TCFD) and Task Force Nature-related Financial Disclosures (TNFD).
SGS reserves the right to update the assurance statement from time to time depending on the level of report content discrepancy of the published version from the agreed standards requirements.

INTENDED USERS OF THIS ASSURANCE STATEMENT

This Assurance Statement is provided with the intention of informing all CTCI's Stakeholders.

RESPONSIBILITIES

The information in the CTCI's Sustainability Report of 2023 and its presentation are the responsibility of the directors or governing body (as applicable) and management of CTCI. SGS has not been involved in the preparation of any of the material included in the Sustainability Report.

Our responsibility is to express an opinion on the report content within the scope of assurance with the intention to inform all CTCI's stakeholders.

ASSURANCE STANDARDS, TYPE AND LEVEL OF ASSURANCE

The SGS ESG & Sustainability Report Assurance protocols used to conduct assurance are based upon internationally recognized assurance guidance and standards including the principles of reporting process contained within the Global Reporting Initiative Sustainability Reporting Standards (GRI Standards) GRI 1: Foundation 2021 for report quality, GRI 2: General Disclosure 2021 for organisation's reporting practices and other organizational detail, GRI 3: 2021 for organisation's process of determining material topics, its list of material topics and how to manages each topic, and the guidance on levels of assurance contained within the AA1000 series of standards.

The assurance of this report has been conducted according to the following Assurance Standards:

Assurance Standard Options	Level of Assurance
A	SGS ESG & SRA Assurance Protocols (based on GRI Principles and guidance in AA1000)
B	AA1000ASv3 Type 2 High Level (AA1000AP Evaluation plus evaluation of Specified Performance Information)

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SCOPE OF ASSURANCE AND REPORTING CRITERIA

The scope of the assurance included evaluation of quality, accuracy and reliability of specified performance information as detailed below and evaluation of adherence to the following reporting criteria:

Reporting Criteria Options	
1	GRI Standards (in Accordance with)
2	AA1000 Accountability Principles (2018)
3	SASB (ENGINEERING & CONSTRUCTION SERVICES)

- The evaluation includes AA1000 Assurance Standard v3 Type 2 evaluation of the report content and supporting management systems against the AA1000 Accountability Principles (2018).
- The evaluation of the reliability and quality of specified sustainability performance information in CTCI's Sustainability Report is limited to determined material topics or those clearly marked in the report as conducted in accordance with type 2 of AA1000AS v3 sustainability assurance engagement at a high level of scrutiny for CTCI and moderate level of scrutiny for its subsidiaries or joint ventures,
- The evaluation of the report against the requirements of GRI Standards, includes GRI 1, GRI 2,
- GRI 3, 200, 300 and 400 series claimed in the GRI content index as material and is conducted in accordance with the standards.
- The evaluation of the report against the SASB Disclosures and Metrics included in the I ENGINEERING & CONSTRUCTION SERVICES Sustainability Accounting Standard (VERSION 2023-12) and conducted alongside an evaluation of accuracy assurance at high level of scrutiny.

ASSURANCE METHODOLOGY

The assurance comprised a combination of pre-assurance research, interviews with relevant employees, superintendents, Sustainability and Net-Zero committee members and the senior management in Taiwan; documentation and record review and validation with external bodies and/or stakeholders where relevant.

LIMITATIONS AND MITIGATION

Financial data drawn directly from independently audited financial accounts and Task Force on Nature-related Financial Disclosures (TNFD) has not been checked back to source as part of this assurance process.

STATEMENT OF INDEPENDENCE AND COMPETENCE

The SGS Group of companies is the world leader in inspection, testing and assurance, operating in more than 140 countries and providing services including management systems and service certification; quality, environmental, social and ethical auditing and training; environmental, social and sustainability report assurance. SGS affirm our independence from CTCI, being free from bias and conflicts of interest with the organisation, its subsidiaries and stakeholders.

The assurance team was assembled based on their knowledge, experience and qualifications for this assignment, and comprised auditors registered with ISO 26000, ISO 20121, ISO 50001, SA8000, RBA, QMS, EMS, SMS, GPMS, CFP, WFP, GHG Verification and GHG Validation Lead Auditors and experience on the SRA Assurance service provisions.

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ASSURANCE/VERIFICATION OPINION

On the basis of the methodology described and the assurance work performed, we are satisfied that the disclosure with inclusivity, materiality, responsiveness, and impact information in the scope of assurance is reliable, has been fairly stated and has been prepared, in all material respects, in accordance with the reporting criteria.
We believe that the organisation has chosen an appropriate level of assurance for this stage in their reporting.

AA1000 ACCOUNTABILITY PRINCIPLES (2018) CONCLUSIONS, FINDINGS AND RECOMMENDATIONS

Inclusivity

CTCI has exemplified its dedication to stakeholder inclusivity and engagement by integrating stakeholder engagement processes into governance, strategy, and pertinent decision-making procedures. This endeavor seeks senior management involvement via cross-functional and cross-geographical. As a result, this commitment to engaging with stakeholders has yielded positive outcomes, nurturing a culture of transparency and accountability throughout the organization.

Materiality

CTCI has integrated multidimensional methodological developments to assess the economic, environmental, and human rights impacts, incorporating both monetized and non-monetized approaches. This has facilitated the construction of an impact-based significant analysis process to identify material issues for CTCI, while also enabling the simultaneous establishment of long-term sustainable goals.

Responsiveness

The report includes coverage given to stakeholder engagement and channels for stakeholder feedback. CTCI has responded to its material sustainability topics, related impacts and stakeholders in a comprehensive, accurate, timely, accessible and balanced manner. Measurable targets have been established to track its sustainability performance.

Impact

CTCI has demonstrated a process on identifying impacts that fairly encompass a range of environmental, social and governance topics from a wide range of sources, such as activities, policies, programs, decisions and products and services, as well as any related performance. Besides, a structured analysis of the probability of impacts has been included. Impacts related to material topics were in place at target setting with qualitative and quantitative measurements and evaluation.

GLOBAL REPORTING INITIATIVE REPORTING STANDARDS CONCLUSIONS, FINDINGS AND RECOMMENDATIONS

The report, CTCI's Sustainability Report of 2023, is adequately in accordance with the GRI Universal Standards 2021and complies with the requirements set out in section 3 of GRI 1 Foundation 2021, where the significant impacts on the economy, environment, and people, including impacts on their human rights are assessed and disclosed following the guidance defined in GRI 3: Material Topic 2021, and the relevant 200/300/400 series Topic Standard related to Material Topic have been disclosed. In the report, the information regarding CTCI's contributions to sustainable development has been adequately disclosed. The implementation and high level of integration of ESG have exerted their internal influence, with cross-organizational integration effectively aligning and evaluating its performance. It is recommended that CTCI could consider developing a real-time platform to observe dynamic changes in trends and effectively analyze global information of CTCI for top management to adjust its sustainable strategy whenever necessary.

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SASB CONCLUSIONS, FINDINGS AND RECOMMENDATIONS

CTCI has referenced with SASB's Standard, ENGINEERING & CONSTRUCTION SERVICES, VERSION 2023-12 to disclose information of material topics that are vital for enterprise value creation. The reporting boundaries of the disclosed information correspond to the CTCI's Sustainability Report. CTCI used SASB accounting and activity metrics to assess and manage the topic-related risks and opportunities, where relevant quantitative information was assessed for its accuracy and completeness to support the comparability of the data reported. Process to identify, assess, and manage topic-related risks and opportunities were integrated into CTCI's overall management process. Regularly monitoring peer disclosure could assist CTCI in gaining a deeper understanding of evolving expectations among investors and other stakeholders, ensuring the provision of comparable information.

Signed:
For and on behalf of SGS Taiwan Ltd.

AA1000
Licensed Report
000-8/V3-RG9WX

Stephen Pao
Business Assurance Director
Taipei, Taiwan
14 May, 2024
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CTCI

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