

2021

CTCI Sustainability Report



Total Participation in ESG
to Practice Net Zero EPC

CTCI
Discover Reliable





Cover Story

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 cycling economy and net zero emissions in EPC project executions. The color orange is used to strengthen CTCI's brand image.



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2021 Sustainability Report

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From the Management

Be the First EPC Contractor to Achieve Net Zero Emission Target and Expand Impact on Sustainability

The world has been greatly impacted by events such as the COVID-19 pandemic, geopolitical conflict and extreme weather conditions in the past year. In addition to joining hands with global partners to fight the pandemic, CTCI has also utilized innovative engineering concepts

to create a pilot plan for the net zero turnkey engineering  under the international net zero carbon emission target, playing a key role in climate transformation.

Fulfilling Net Zero EPC Mission through ESG Engagement of All Members

CTCI holds fast to the brand spirit of being "The Most Reliable Global Engineering Services Provider," and delivers engineering services and constructions with quality, safety and are friendly to the environment. Meanwhile, we promote "Fulfilling Net Zero EPC (engineering, procurement, construction) Mission through ESG (environmental, social, and corporate governance) Engagement of All Members," to support the United Nations' Sustainable Development Goals (SDGs), an important global topic. Under the leadership of our senior management, we are committed to contributing to SDGs with our four core competencies, i.e. "green engineering," "smart plant," "circular economy," and "Intelligent EPC" (iEPC)."

In order to encourage colleagues to make continuous breakthroughs and innovations in their work, we regularly hold "sustainable practices and net zero emission target improvement meetings" every month. The Group's Executive Committee reviews the sustainability proposals of various units, jointly optimizes and deeply cultivates a sustainability organizational culture, so as to make each colleague realize that doing a good job in daily work is a part of the sustainability efforts to embark on a more stable and reliable journey to sustainability.

As the largest turnkey engineering group in Taiwan with ranking among the world's top 100, CTCI established a "Sustainability and Net Zero Emissions Committee" under the Board of Directors in early 2021. At the same time, it set up an ESG office and a full-time chief sustainability officer to coordinate the group's operations related to sustainability and net zero emission target and strive to achieve various goals. In the past year, in addition to actively promoting "net zero EPC," we put forward feasible schemes for energy conservation, carbon reduction and carbon neutralization services for all stages of EPC turnkey plant construction, so as to help customers move towards the goal of net zero emission. We also joined the "Taiwan Alliance for Net Zero Emission" and the "Taiwan Net Zero Emissions Association," pledging to achieve zero carbon emissions for office premises by 2030 and zero carbon emissions for office and project sites by 2050.

At the midstream of the overall engineering industry chain, we at CTCI not only realize our ESG responsibilities, but also bring global supply chain partners to pursue sustainability and obtain mutual benefits. In addition to combining the needs of customers with our own specialties to

create green engineering, we also lead third-party manufacturers to build a complete sustainable value chain and actively promote the supplier support plan. In recent years, we have also expanded the scale of our supplier meeting to improve the sustainability of the overall industrial chain. We stay committed to the cause with our supply chain partners. Due to the COVID-19 pandemic this year, we are holding an online supplier meeting instead to ensure our sustainability efforts remain uninterrupted.

Green Engineering - the Win-win Situation for Both Environment and Economy

In the process of developing business globally, we fully acknowledge the correlation and impact between the development of the engineering industry and climate change, therefore we continue to identify business risks and opportunities through Task Force on Climate-related Financial Disclosures (TCFD), and actively invest in the development of green energy and low-carbon business sector by increasing its percentage of sales revenue of our total revenue. Under the national energy transformation policy of reducing coal-fired power generation, increasing natural gas and promoting green energy, the amount of low-carbon and environmental protection related projects contracted to CTCI increased by 450% from 2015 to 2021, becoming an important driving force for business growth.

Over the years, we are committed to the practice of sustainability through our core competencies by promoting and implementing the three major categories of "Green Engineering," namely Green Technology, Green Contracting, and Green Investment. CTCI has been successful in expanding business in the low-carbon and environmental protection related engineering fields as well as assisting our clients to achieve the goals of energy saving, carbon reduction, and cost saving to create a win-win situation for the economy and the environment with our engineering expertise.

In terms of green technology, while designing and building plants for the project owner, CTCI actively introduces green technology into the whole life cycle of the engineering project and is committed to reducing environmental impacts. In recent years, we have also actively grasped the opportunities for low-carbon and green engineering contracts, including Hsinta and Taichung combined-cycle power plants, the third natural gas receiving terminal, TCC DAKA renewable resources utilization center, the new biodiesel plant construction project in the US, and other projects conducive to sustainable development.

For green investment, CTCI undertakes projects in the form of BOO and BOT. For incinerators, there are Taoyuan bioenergy center and Changhua Industrial Park Sludge Incineration Plant. In the solar photovoltaic field, the cumulative number of cases we have invested has exceeded 126MW. In the field of water resources reuse, we have secured project including Linkou water resources recycling center, Southern Taiwan Science Park wastewater reclamation unit, and Chungli water resources recycling center in Taoyuan.



John T. Yu
CTCI Group Chairman

Committed to Sustainable Education and Expanding Social Influence

In order to drive Taiwan's engineering industry to keep up with the global sustainable development, we organized the first "Taiwan Sustainability Engineering Forum" together with the CTCI Education Foundation, focusing on intelligent green technology and sharing CTCI's performances and experiences on iEPC and Green Engineering in the hope that it would lead the way in the net-zero EPC turnkey plant construction initiative and expand the impact of sustainable projects.

CTCI established the "CTCI Education Foundation (CTCI EF)" in 2016, and continuously planned a total of 17 plans, 72 events, with 10,554 people participating in sustainable education, forums, awards and grants and other activities. Additionally, CTCI launched a digital platform, "CTCI Learning" in 2021, offering hundreds of engineering courses to the public and related academic units for free in order to pass on professional engineering knowledge and experience, with the hope of upgrading the engineering industry in Taiwan.

Conclusion

CTCI provides the most reliable engineering services in the global market and is the only engineering service company in Taiwan that ranks among the top 100 in the world. With regard to efforts in ESG aspects, CTCI also surpasses other international competitors to ranks among the best, and won various domestic and international sustainability awards, including being selected as a constituent stock of DJSI (Dow Jones Sustainability Index) in Emerging Markets category for 7 consecutive years, the only company selected from Taiwan's engineering service industry and ranking second in the global engineering industry, and evaluated as the Silver Class of 2022 Sustainability Yearbook. In the CDP (Carbon Disclosure Project) Climate Change Report, the world's largest carbon disclosure organization, it obtained B-management level for climate change rating and A- leadership level for supply engagement, while achieving BBB level on the MSCI (Morgan Stanley) ESG rating, recognized as the "Best Companies to Work for in Asia 2021" by HR Asia, winning award as among the Top 10 Domestic Companies Sustainability Model Award of Taiwan Corporate Sustainability Awards (TCSA), obtaining the Excellence in Corporate Social Responsibility Award issued by the Commonwealth Magazine, and is ranked among top 5% of the Corporate Governance Evaluation by the Financial Supervisory Commission. With respect to the brand management, CTCI was also selected as one of the "Best Taiwan Global Brands 2020" by Interbrand, an international authoritative brand value survey organization, regarded as a model enterprise for sustainable development. CTCI's outstanding performance enables us to stand on top of the world and rank among the top 100 contractors in the world by Engineering News-Record (ENR), as well as retaining top 1 position in the Contractor Sector in the Top 650 Service Enterprises list carried out by the Commonwealth Magazine, which shows CTCI's capabilities and sustainable growth.

This Sustainability report provides a detailed record of CTCI's concrete achievements in ESG aspects in the past year. I would like to thank the 7,000 colleagues for their dedication and participation, which proves that we are "The Most Reliable Global Engineering Service Provider." Looking to the future, we hope that "where there is CTCI, there is trust!" CTCI will continue to innovate green engineering, create quality and environment-friendly engineering construction for global customers with advanced technology and more diversified services, and work with global partners to implement sustainable and net zero EPC, to give full play to engineering influence and make the world a better place.

Affirmations and Awards

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

Listed in DJSI Emerging Markets

Silver Class in the S&P Global
Sustainability Yearbook 2022



**B-management level for Carbon
Disclosure Project and A- leadership
level for supply engagement**



2,000 Enterprises Survey

Remains Top Contractor in
CommonWealth Magazine's Top



Top 10 Domestic Companies Sustainability Model Award

Taiwan Corporate Sustainability Awards
(TCSA); English Reportage Bronze
Award; Growth Through Innovation
Leadership Award; Transparency and
Integrity Leadership Award; Sustainable
Development Goals Silver Award (Social
Dimension)



Corporate Governance Evaluation

Top 5% of Corporate Governance
Evaluation System by TWSE



**Excellence in Corporate Social
Responsibility Award by
CommonWealth Magazine**



ENR's Top 100
International Engineering
Companies



**"Best Companies to Work for in Asia
2021" by HR Asia**



**Distinguished Project Award, PMI
Taiwan**



**Platinum Award, Corporate Sustainability
Report Award for the Service Industry,
TCSA**



About CTCI

Group Operations

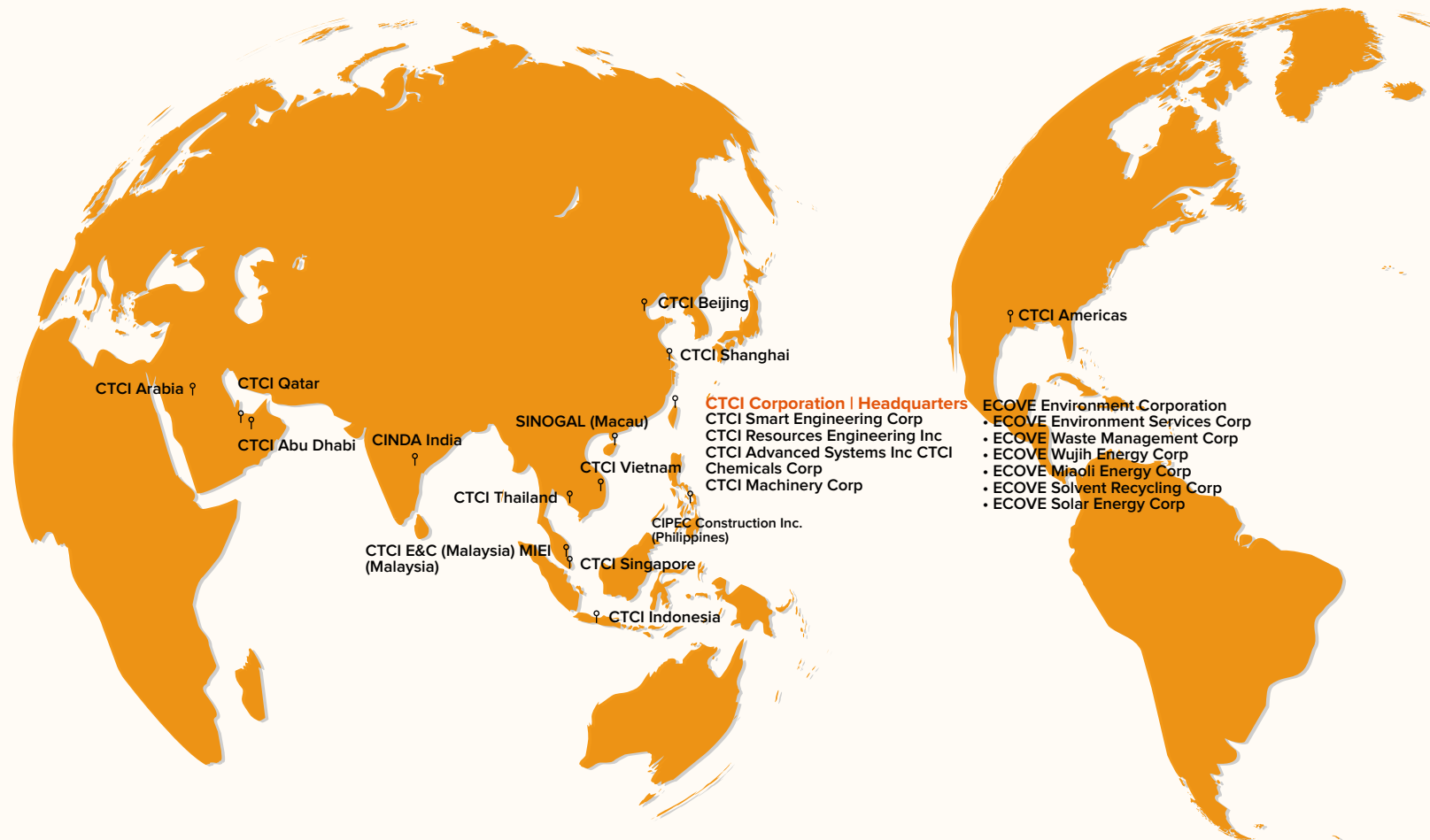
CTCI Corporation (TWSE: 9933) is a global engineering, procurement, and commissioning (EPC) company dedicated to providing the world's most reliable engineering services. Since its establishment in 1979, CTCI has continued to grow and become the pioneer in Taiwan's oil refinery and petrochemical industry. It has aggressively tapped into the international market and is active in engineering fields (plant EPC services and the follow-up Build-Operate-Transfer, operation and maintenance, etc.) related to oil refinery and petrochemical, power, environment, transportation, and the high-tech facilities. Adhering to the spirit of endless innovation and no compromise on quality, CTCI actively lives up to the vision of "the Most Reliable Global Engineering Services Provider." We have completed countless difficult tasks around the world, and have repeatedly been appointed as the most reliable partner by well-known proprietors. Our engineering achievements can be found throughout Asia, the Middle East, and the Americas. Since its establishment, CTCI has accumulated over 40 years of engineering experience and gained rich capabilities in international engineering affairs. It has about 40 affiliates in more than 10 countries around the world, and more than 7,000 employees. The paid-in capital is NT\$7.6 billion, and the consolidated revenue in 2021 was NT\$70.5 billion.

10⁺territories / countries
around the world**40⁺** yearsengineering
experienceAbout **40**affiliated
companies**NT\$ 7.6** billion

paid-in capital

7,293 headcount

employees



Originating from Taiwan, CTCI constantly expands its service area with rich experience and track records. It has reached the Middle East, Mainland China, the US, and Southeast Asia. With technology and experience well-known to the world, CTCI has become an ideal partner that major engineering companies in the world are competing for. Since 2015, CTCI has been chosen to be included in the Dow Jones Sustainability Indices (DJSI), the first and the only Taiwanese company to date being selected in the engineering category. In light of new challenges and trends, CTCI has been developing its exclusive Intelligent EPC (iEPC) turkey services engineering platform. Currently, the platform has entered its 2.0 stage, which not only optimizes the efficiency

and quality of each of the EPC stages, it also shows significant benefits to the improvement of industrial safety, the reduction of errors, and the saving of costs. We are committed to building a reputation in the industry to be known for speed, quality, industrial safety, efficiency, intellectual property protection in relation to our services. CTCI will continue to enroot itself both in domestic and international markets, maximize the existing businesses' forces and creating Unique Selling Point (USP), so that CTCI as a brand will grow more in value and distinctiveness and realize our vision of being "The Most Reliable Global Engineering Services Provider."

Corporate culture

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.)
Stock Code (TWSE)	9933
Consolidated Sales Revenue in 2020	NT\$ 70.5 billion
2020 total Group contract amount	NT\$ 125.9 billion
Total number of group employees at the end of 2020	7,293 employees
Paid-in Capital	NT\$7.6 billion
Number of affiliated companies	About 40
Top 225 International Design Firms	Ranking 86th
Top 250 Global Contractors	Ranked 151st
Top 250 International Contractors	Ranked 69th





Core Business and Target Market

With rich experience in global turnkey project management and tangible achievements, CTCI is able to satisfy clients' customized demands. In order to pursue excellence, improve technology, increase engineering efficiency and control time and cost, we implement the design, procurement, and construction to create a "one-stop" engineering service. Customer satisfaction encourages us to pursue excellence. We will continue to improve our technologies and set the goal and development guidelines for iEPC, which in turn successively delivers intelligent solutions that improve work efficiency and design quality. iEPC also helps improve project execution efficiency as well as time and cost reduction. These results have earned high praise from our clients, commending on CTCI's "Most Reliable" engineering quality.

CTCI's mission is "To Satisfy Our Customers with Optimized Engineering Services." The fact that we continue to win major projects from domestic and foreign customers every year is the best recognition for our service. In the future, CTCI aims to continuously provide diverse services of uttermost quality by our most competitive team, and proactively strive to achieve our vision of becoming "The Most Reliable Global Engineering Services Provider."

● Business areas and professional services

Hydrocarbon

- Feasibility studies for new or existing refinery and petrochemical facilities
- Oil refinery/petrochemical plant construction/expansion project
- Liquefied natural gas receiving terminal construction/expansion project
- Engineering, integration, implementation, installation and expansion of instrument and control systems

Transportation

- Power supply systems
- Trackwork project
- Railway communication systems
- Supervisory Control and Data Acquisition (SCADA)
- Airport baggage handling systems
- Airport E&M systems

Power

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

Industrial

- Construction of steel and non-ferrous metal plants
- Cleanroom facility work
- Industrial automation and control system integration
- Intelligent solutions for newly established and existing plants
- MEP and HVAC system

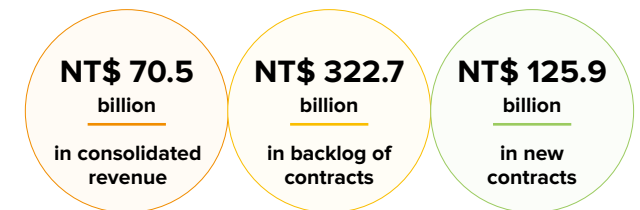
Environmental

- Feasibility study
- Assessment of environmental impacts
- Engineering, procurement, fabrication, and construction
- Operation and maintenance service
- Project management consultation
- Expansion and renewal of existing waste treatment plants

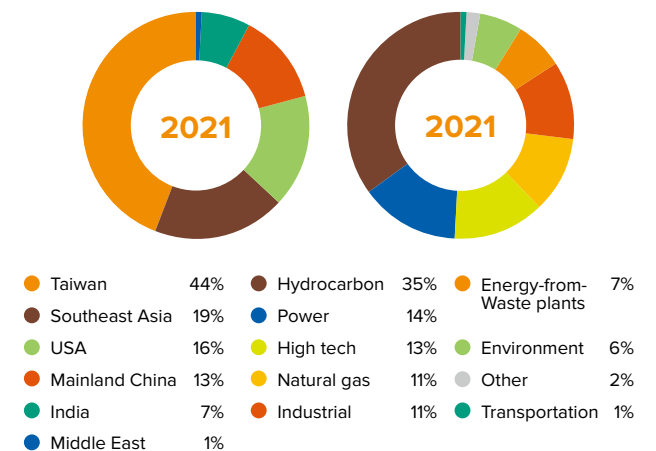
Advanced Technology Facilities

- Feasibility study of advanced technology facilities (new or revamping)
- Construction of advanced technology facilities (new or revamping)
- Front-End Engineering Design (FEED) of advanced technology facilities
- Procurement and construction management of advanced technology facilities
- Engineering, procurement, construction and commissioning (EPCC) of advanced technology facilities
- Cleanroom design, engineering, and construction

Sales analysis of CTCI's main services in 2021

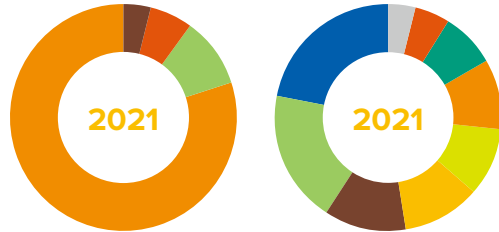


NT\$ **70.5** billion in consolidated revenue



NT\$
322.7 billion

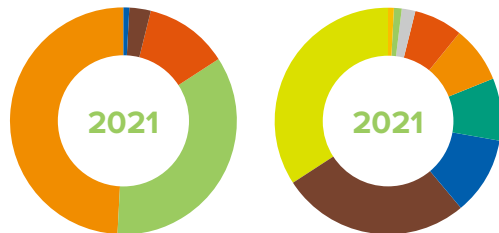
in backlog of contracts



Taiwan	80%	Power	22%	Energy-from-Waste plants	10%
US	10%	Environment	19%		
China	6%	Hydrocarbon	12%	Transportation	8%
Southeast Asia	4%	Natural gas	11%	Industrial	5%
		High tech	10%	Other	4%

NT\$
125.9 billion

in new contracts



Taiwan	49%	High tech	34%	Industrial	7%
US	35%	Hydrocarbon	27%	Other	2%
China	12%	Power	11%	Environment	1%
Southeast Asia	3%	Transportation	9%	Natural gas	1%
Middle East	1%	Energy-from-Waste plants	8%		

2021

Completed Projects

Area	Number of Backlog of Contracts	Number of Completed Projects*
Taiwan	360	52
Southeast Asia	30	8
USA	14	1
India	10	3
Mainland China	70	9
Middle East	8	1
Others	5	
	497	74

Notes

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

Financial Performance

Year	2021	2020	2019	2018	2017	Unit	Notes
Debt to assets ratio	76.48	73.11	72.16	73.04	69.97	%	
Return on total assets	2.36	1.42	1.87	2.67	4.24	%	
EPS (Earnings per share)	2.15	1.01	1.54	2.40	3.68	NT\$	
Total consolidated revenue	70,540,414	55,558,409	58,211,022	64,069,542	71,606,604	NT\$ thousand	
Consolidated net income before tax	3,033,528	1,764,020	2,230,315	3,065,273	3,991,353	NT\$ thousand	
Market capitalization	28,415,729	29,160,348	29,082,425	33,889,359	34,461,814	NT\$ thousand	Calculated on a year-end share price basis
Individual income tax expense (Gains)	203,678	143,928	183,219	347,595	397,749	NT\$ thousand	
Total Individual assets	55,536,683	47,789,384	44,653,812	50,902,900	46,213,625	NT\$ thousand	
Individual capital	7,638,637	7,633,599	7,633,182	7,632,738	7,632,738	NT\$ thousand	
Average operating revenue per employee	9,672	8,113	8,285	9,119	9,634	NT\$ thousand	Year-end number of group employees
Total individual revenue	30,782,149	25,873,770	28,430,333	35,684,680	48,591,380	NT\$ thousand	
Individual operating expenses	30,001,051	25,216,772	26,600,454	33,530,648	45,727,905	NT\$ thousand	Operating costs+ Operating expenses
Individual retained earnings	5,169,971	5,191,503	5,985,087	6,540,307	7,105,963	NT\$ thousand	
Total individual salaries	3,096,662	2,878,712	3,177,377	4,116,590	4,547,745	NT\$ thousand	
Total individual employee benefits	3,699,149	3,509,472	3,866,929	4,837,348	5,220,741	NT\$ thousand	
Total individual pensions	122,993	134,169	147,008	155,839	167,841	NT\$ thousand	



Industry Development and Strategy

According to the International Monetary Fund (IMF)^① announced on January 2022, the updated version of the World Economic Outlook report pointed out the global economic growth is not as good as expected. As the mutated new coronavirus Omicron strain continues to spread, most countries have reintroduced measures to restrict the movement of people. In addition, inflation rose more than expected, especially in the U.S. and emerging markets, driven by higher energy prices and continued supply chain disruptions. Global economic growth is expected to slow from 5.9% in 2021 to 4.4% in 2022. Among them, the economic growth rate of developed countries is estimated to be 3.9%, while that of emerging markets and developing countries is 4.8%. In the part of individual economies, the IMF predicts that the economic growth rate of the United States will be 4.0% in 2022 and 2.6% in 2023; the euro zone's economic growth rate is 3.9% in 2022 and 2.5% in 2023. In Asia, Japan's economic growth rates in 2022 and 2023 are 3.3% and 1.8%; the rates in China are 4.8% and 5.2%.

The Ukrainian-Russian conflict and the sanctions against Russia that broke out in February 2022 will have a significant impact on the global economy and financial markets, and will also have significant spillover effects on other countries, which will add more variables to the outlook for economic growth.

The Company is engaged in the engineering, procurement and construction ("EPC") industry, which is closely tied to the overall economy outlook of our target markets. Because many projects are initiated by the governments, the economic growth rates of the Company's target markets are one of major indicators for business opportunities. The table below is conducted by IMF, showing global growth forecasts. The Company will retain a progressive bidding strategy in every target and potential markets.

Notes

① Reference: IMF, World Economic Outlook Update, January 2022

2021

- Global economic growth rate 5.9%
- Developed countries 5.0%
- Emerging markets 6.5%

2022 IMF Predictions

- Global economic growth rate 4.4%
- Developed countries 3.9%
- Emerging markets 4.8%

In 2022, CTCI will actively pursue all possible bids, continue to cultivate the global market, develop new technologies, explore new fields to provide more innovative services and differentiate our services from competitors to provide customers with better services.

Short-Term and Long-Term Business Development Goals

● Short-term Business Development Goals

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 the US, and will explore further to those new territories including East Europe, North Africa and South America. 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.

Participating in Global Power Plant and LNG Receiving Terminal Projects Aggressively

According to the nuclear-free government policy in Taiwan, Taipower has planned several gas-fired power plant projects in next couple years. And the demand for LNG also lead to several LNG receiving terminal projects. In addition, contributed by a promising economy in Southeast Asian region, strong power demand has been predicted, which draws attention for new power plant projects in the coming few years as well. The Company will be involved actively in Taiwan and overseas market consistently.

Energy Transition and Carbon Zero

In sync with the Government's energy policies, the Company has continued to focus on the potential business opportunities with the large demand of new LNG receiving terminals and LNG storage tanks, as well as the gas-fired power plants. At the same time, the Company is also on top of the green energy development plan, forming strategic alliance with Van-Oord for the offshore wind power EPC works on top of the sub-sea piling works. With the aging incinerators approaching de-commissioning, the Company is offering eco-friendly incinerating technologies to help replacing the old incinerator power plants, contributing to the 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.

Semiconductor and Advanced Technology

The escalation of the US-China trade war has resulted in tensions that cannot be resolved in a short period of time. In addition, as the novel coronavirus has created bottlenecks in the supply chain, the US government has begun to think carefully and change its practices, especially for the import and export of high-tech industries of China, with some degree of restriction to protect U.S. interests. The Taiwan market has complete industrial chain facilities and sufficient experience, so that well-known companies in the technology industry from various countries have increased the investment scale of the Taiwan market. In response to this trend, CTCI will step into this field in view of the current demand in the domestic market and will master the construction projects of semiconductor and electronic industries all over Taiwan, and meet the opportunities such as large foreign companies to build data centers in Taiwan.

● Long-term Business Development Goals

Targeting New Business

In addition to existing business lines, the Company has developed new fields recently such as LNG, green energy, recycling resources, etc. These new businesses are expected to contribute a significant and stable profit in the long run, particularly in emerging markets.

Innovating Service Patterns to differentiate competitiveness against rivals

By integrating of EPC service vertically and horizontally for an incessant expansion, the Company consistently devotes to an improvement in various aspects such as engineering technology, procurement, research and development, quality/HSE, etc. Through an active introduction of intelligent technology, the Company aims to create an intelligent technology platform -"IEPC" for its turnkey service and build big data bank for an intelligent turnkey service to a variety of customers. Through IEPC, the Company will be able to optimize the efficiency of project execution and originate a synergy for future business development aggressively.

In all, the Company aims to become one of the top 30 engineering companies in the world, and to create an esteemed brand name for the Taiwanese engineering consulting service industry.



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Sustainable Management

CTCI has long held true to our sustainability commitment. We have set up long-term goals for sustainable development in 2025 and have reviewed its progress year by year. Meanwhile, CTCI's four core competencies of "green engineering," "smart plant," "circular economy," and "intelligent EPC (IEPC)" have echoed SDGs (sustainable development goals). Through "Full Participation in ESG Implementation", the Company continues to enroot CSR into its corporate DNA, exerting deeper influence and delivering greater value. As for Net Zero climate action, we 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 our headquarters as well as offices worldwide by 2030, 100% net zero emissions of our headquarters, offices as well as production sites worldwide by 2050. Besides, we are 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. We also ranked among Business Weekly top 100 Carbon Reduction Companies. CTCI has joined the SBTi (The Science Based Targets initiative), promises to use a 1.5°C target as the framework for setting a carbon reduction schedule to accelerate progress towards net zero emission by 2050.

Highlights

NEW

In 2021, we renamed ESG Committee, a functional committee, to ESG & Net Zero Committee, set up a group-level ESG & Net Zero office and appointed a dedicated Chief Sustainability Officer to pursue relevant affairs.

2nd

Place in the World

2021 DJSI Ranking in the Construction & Engineering Sector and S&P Global Sustainability Yearbook

7

For Straight Years

Listed in DJSI Emerging Markets

32

Goals

Long-term Sustainability Goals

Policy and Organization

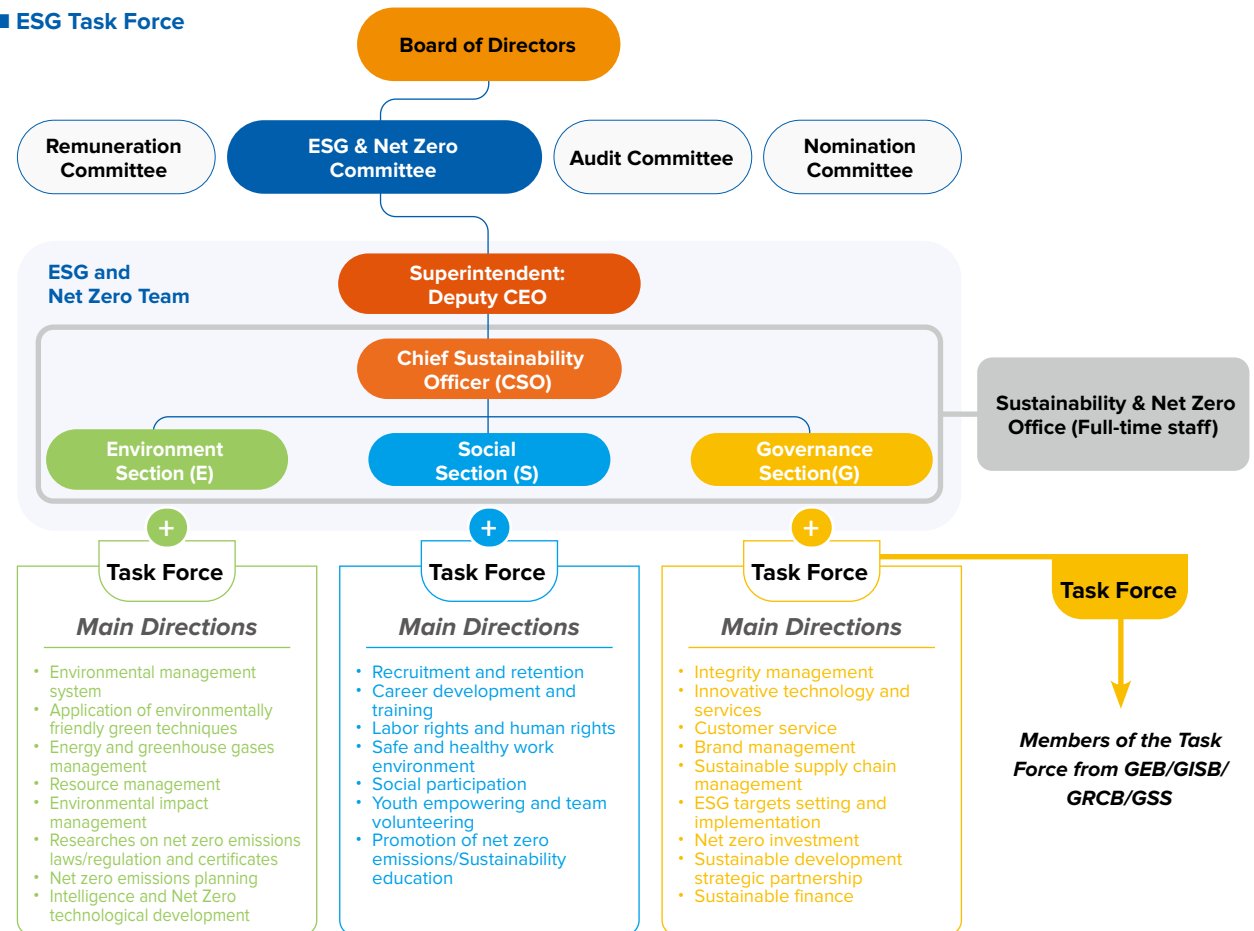
Sustainable development is ingrained in CTCI's DNA. We have established a CSR Committee as early as 2008 and have defined our corporate social responsibilities (CSR) policies, which are dedicated to strengthen the company's operations, realize the green engineering vision, and fulfill our duties as a social citizen. In 2014, the Board of Directors also approved the "CTCI Sustainable Development Best Practice Principles" as the fundamental principles to promote sustainable development and to continuously improve the results in every aspect. In order to continuously promote sustainable development, CTCI established a functional committee called "ESG Committee" under the Board of Directors in 2021 and renamed it to "ESG & Net Zero Committee" for better quality and performance of decision making, greater capacity for ESG & Net Zero development. The Committee is responsible for 1) formulating sustainable development policies, sustainable development goals and strategies, and implementation plans; 2) reviewing, tracking and revising the implementation and effectiveness of sustainable development; and 3) reporting to the Board of Directors on a regular basis. The Committee meets at least once a year and as often as necessary. In 2021, the Committee held the regular meeting on December 10 with Evon Chen, independent director, assuming the role of the convener while Yancey Hai, director, and Michael Yang, Chairman at CTCI Corporation assuming the role of the supervisors. Besides, we set up a group-level ESG & Net Zero office and appointed a dedicated ESG officer, responsible for 1) formulating strategies, planning actions, pursuing affairs on sustainable development and Net Zero emission; 2) jointly promoting environment protection, social participation and corporate governance with ESG & Net Zero task force; 3) making overall planning on the control and accountability of five major fields: policy, system, engagement, disclosure, and progress; 4) tracking and reviewing the progress and effectiveness of sustainable development and Net Zero emission; 5) reporting to the monthly group ESG & Net Zero meeting under the supervision of the President; and 6) reporting to the Group Chairman for ongoing tracking and improvement.

■ Terms of reference 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, including shareholders, customers, suppliers, employees, the government, non-profit organizations, communities, and the media, and oversee communication plans.

CTCI actively invests in sustainable development and has been recognized by the world. Since 2015, the Company has been chosen every year for inclusion in the Dow Jones Sustainability Emerging Market Index, and in 2021 the company ranked second place among its global peers in the construction & Engineering category in the world, while continuing to advance towards the international sustainability benchmark.

■ ESG Task Force



■ CTCI ESG policy statement

Fulfilling corporate social responsibilities with due faith has always been a target of our company's operations. Apart from pursuing maximum profits for our shareholders, we also aim to attend to the rights of the stakeholders, conform to the ethical codes, and mitigate climate change impact by promoting energy saving and carbon reduction. Through these actions, we hope that we can help create a society that is just and fair jointly with the stakeholders, as well as a sustainable living environment. Based on such visions, we try to promote ESG through three aspects, which are "Operations and Governance," "Social Participation," and "Environmental Protection." This is how we commit to strengthening organizational structure, assume our duties as a corporate citizen, and realize environmental protection.



Strengthening Organizational Structure

Steady growth and sustainable development are the basic requirements for performing CSR. 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, we provide employees with steady career development, shareholders with stable profits, and clients with satisfactory project quality.



Performing ESG with Due Faith

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. We also provide employees diverse communication channels and safe and health work environment. At the same time, we maintain positive neighborhood relations with the local communities and do our best to care for and to advocate for social welfare.

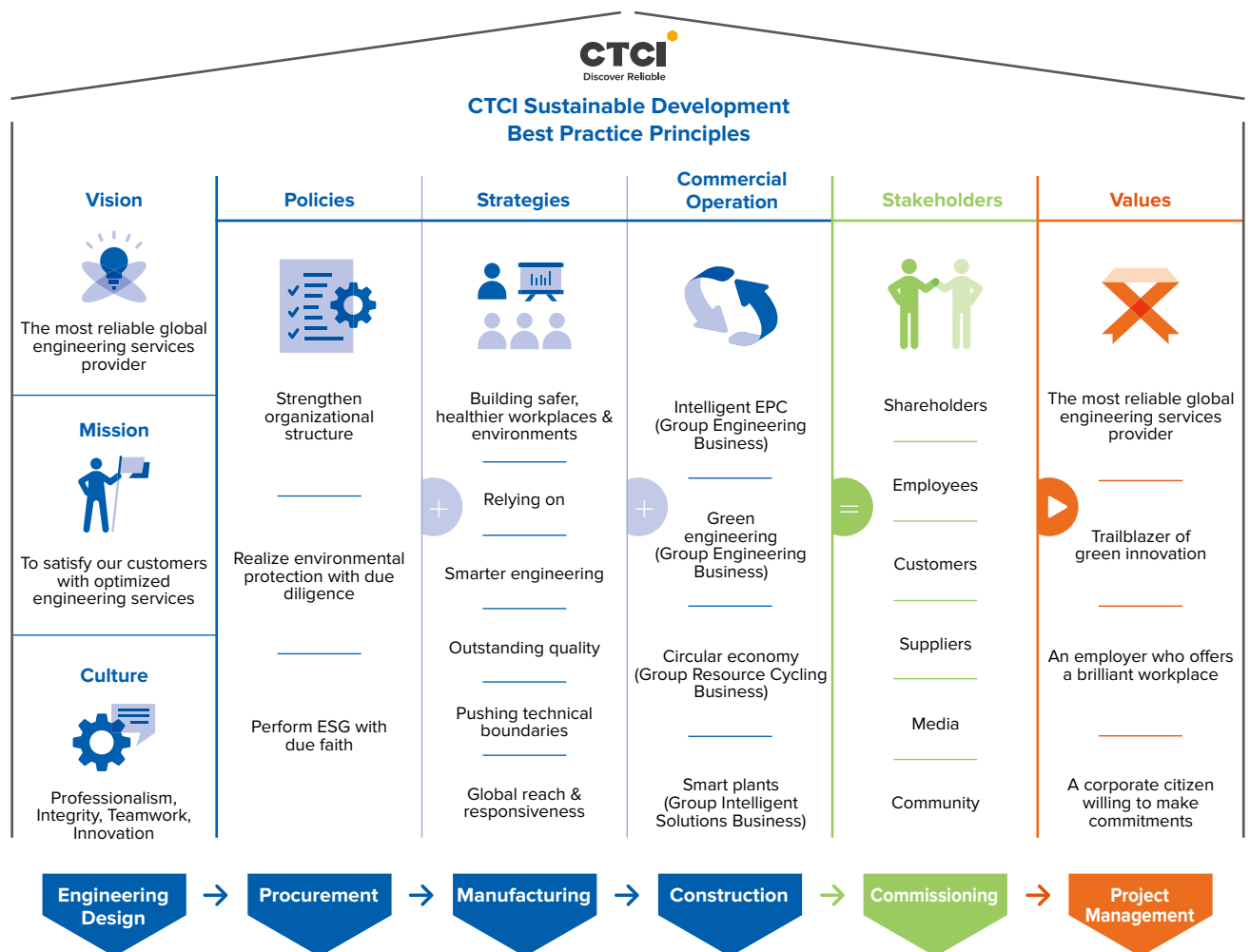


Realizing the Vision of Green Engineering

We have been committed to the development of various green engineering technologies, providing customers with cost-effective and feasible eco-friendly and energy-saving solutions in terms of the complete life cycle from design, procurement, construction, commissioning, operation, to decommissioning. We aim to reduce engineering pollution and risks affecting human health and damaging the environment, innovate and enhance the green competitiveness of the industry, and achieve a win-win situation for CTCI, business partners, stakeholders, and the social environment. We will do our utmost to maintain a sustainable ecological environment.

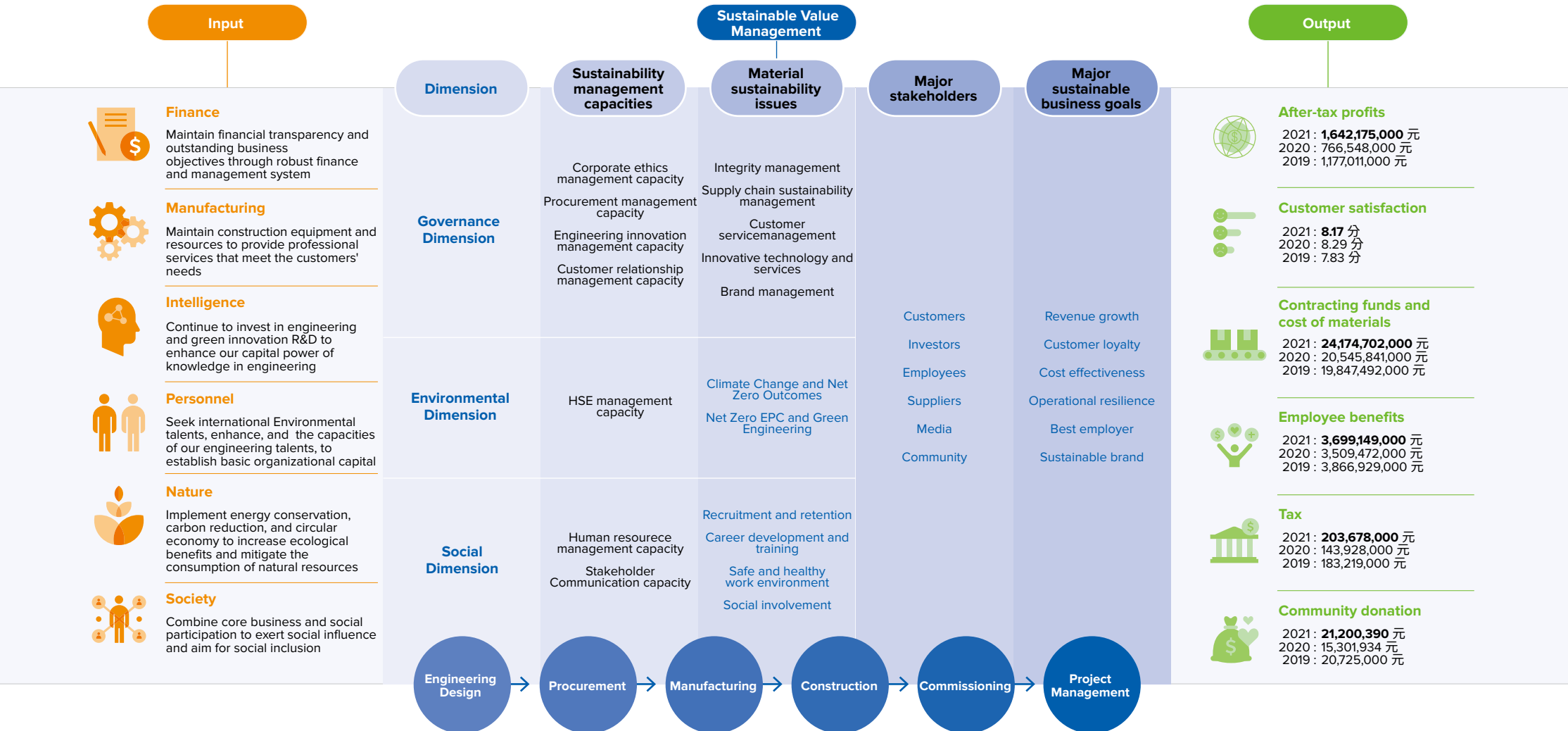
CTCI Sustainability Management Framework

Based on the published CTCI Sustainable Development Best Practice Principles, the way CTCI promotes corporate sustainability comes from its three major policies, which are based on its corporate vision, mission, and culture. These policies further form major strategies that integrate the idea of "reliability" and take into account of the diverse business models of our three major business units, so as to create a sustainable shared values for stakeholders and CTCI. This core framework and belief on corporate sustainability allows us to create the most reliable global engineering services provider, a pioneer of green innovation, the best employer of a happy workplace, and a corporate citizen willing to commit.



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. We pursue the spirit of continuous improvement, which allows us maximize output value and benefits, and effectively create tangible economic, environmental, and social values. In terms of sustainable management promotion within the organization, we have 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. We create sustainable value for both the industry and the public, seek to expand the level of our influence, so that the society and enterprises can jointly move towards a brighter and more sustainable future.

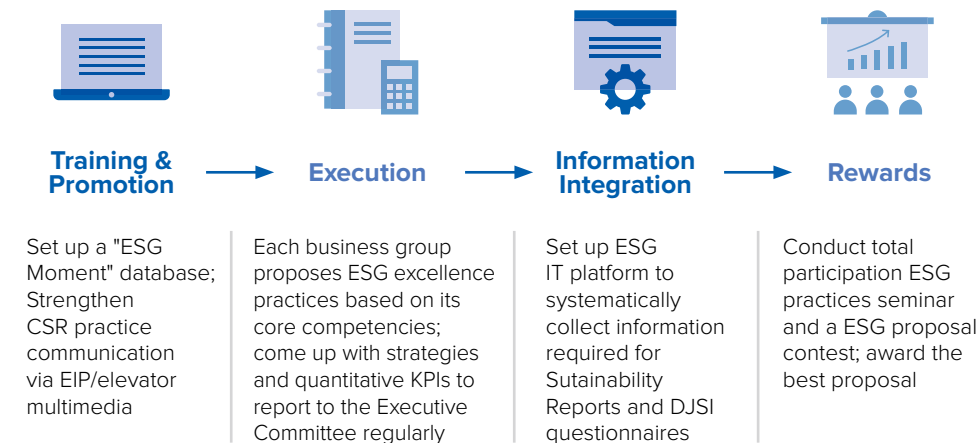


CTCI SDGs Action

Link Four Core Competencies with SDGs

The World Federation of Engineering Organizations (WFEO) proposes that the engineering industry shall make efforts to achieve the UN Sustainable Development Goals (UN SDGs). As a global multinational company in the construction and engineering industry, CTCI not only actively pays attention to the UN's SDGs, but also incorporate the SDGs into its operation strategy, linking with the development and strategic goals of various businesses. To nurture ESG into becoming an important element of CTCI's sustainable development, Group Chairman Yu gives two directions. First of all, to "advocate Total Participation CSR Excellence Practice, so that every employee understands the culture of daily operation being CSR." Secondly, "the four core competencies of CTCI: iEPC, green engineering, circular economy, and smart plant, can link closely with SDGs". Through these two strategic approaches, we hope that colleagues can be proud of the fact that our work contributes to the planet and country, enabling CTCI to exert greater influence in the world.

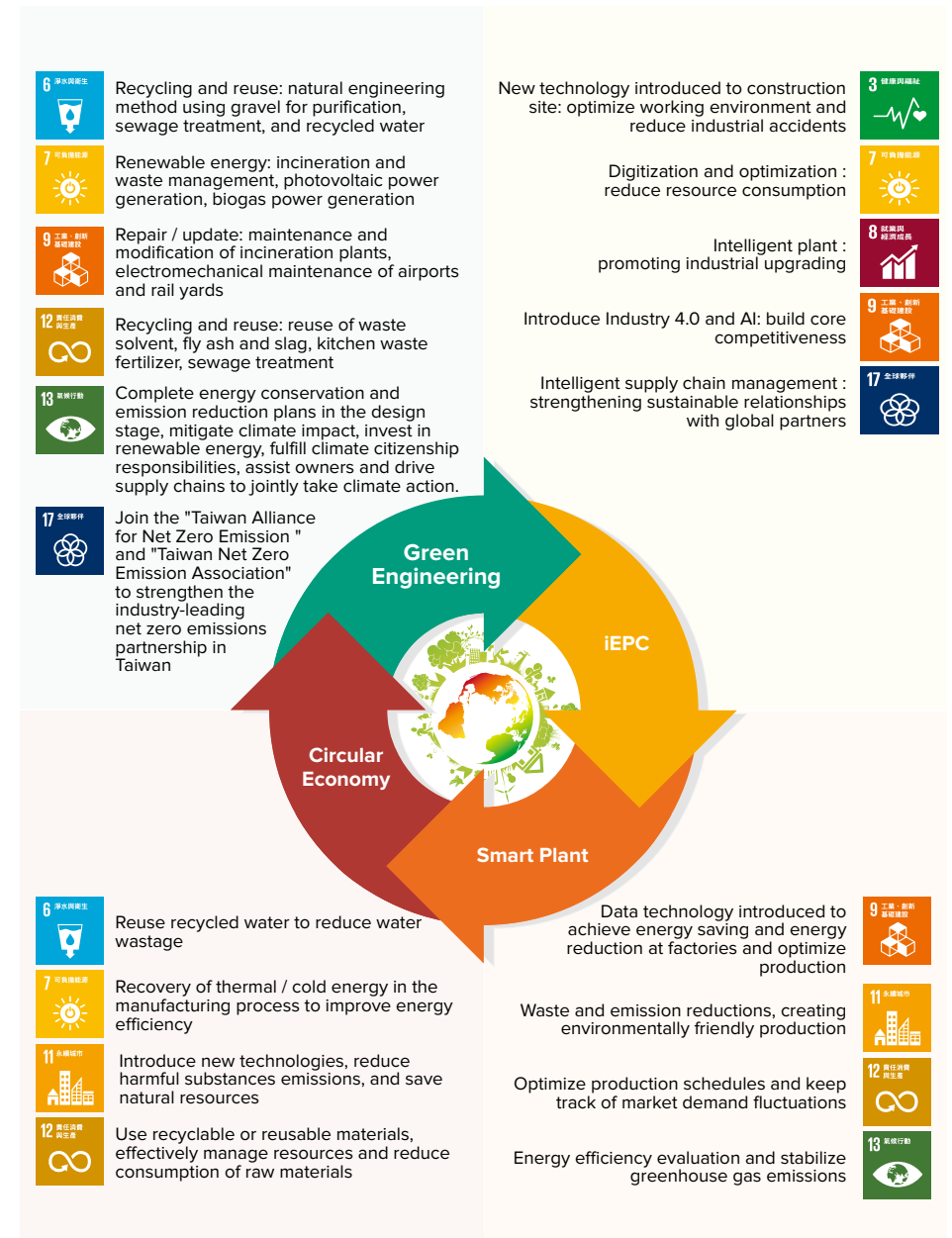
■ How to Promote Total Participation ESG



Vision
Guarding the Earth with Constant Innovation in Green Engineering

Goal
Make ESG the core competitiveness and DNA of the Company

Strategy
Align CTCI's core competencies with the realization of UN's SDGs and materiality issues



Drive for Net Zero

Responding to the United Nation's and global initiatives in reducing carbon emissions and achieving net zero emissions, CTCI, in October, 2021, joined Taiwan Alliance for Net Zero Emission (TANZE), which was founded by Taiwan Institute for Sustainable Energy (TAISE) together with 26 leading Taiwanese enterprises in various sectors. John T. Yu, CTCI Group Chairman, was elected as executive director and Michael Yang, CTCI Group Vice Chairman, was elected as director. TANZE was established to assist the government in achieving carbon neutrality in Taiwan by calling on enterprises and organizations to practice net zero emissions. It aims to guide all social sectors with actions, raise awareness of the public on Net Zero emissions and function as a tripartite policy platform, promoting dialogue among companies, NGOs, and the government, speeding up realization of net zero emission vision across Taiwan. As a member of TANZE, CTCI will join the efforts to push forward Net Zero emissions and promises to work with global supply chain toward Net Zero EPC.



Total Participation in ESG to Practice Net Zero EPC

To make sustainable development and transformation our group's competency and DNA, we have initiated and continuously advanced the plan of Total Participation CSR Excellence Practice since 2018, having the concept of sustainable operation deeply rooted in the group. Every month, each business group will convene refinement meetings on sustainability and Net Zero emissions and hold contests regarding ESG Moment proposals and micro films with the aim of motivating employees to innovate, pursue sustainability, practice the group's ESG and sustainability vision of Guarding the Earth with Constant Innovation in Green Engineering, and unitedly move towards sustainable development! To give all our employees a sense of what the group has achieved and what we ourselves have contributed in terms of sustainability, the group's executive management office has held a special event named Achievement Exhibition of Total Participation in ESG Excellence Practice, which lasted a month and enabled all our employees to experience sustainability both from work and life. The total attendance number for the event was more than 1,500. At the end of 2021, responding to the group's Net Zero initiative, we upgraded the spirit of total participation in CSR to practice ESG to that of total participation in ESG to practice Net Zero EPC on the basis of green business transformation strategy.

Beating Levels: Total Participation in ESG



All members use the internet to join the game and break through barriers. Those who pass the game can enter the lottery.
A total of 1,219 people attended the event.

Voting for ESG micro films



1 workshop; 40 participants 32 entries; 8 winners



60 entries; 24 winners

SDGs Sustainability Group Photo



Participants (including visitors) who take photos at the headquarters building will be presented with a photo of the group photo and a gift.

Voting for ESG Moment



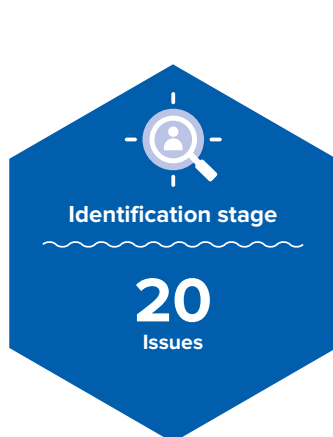
CTCI 2025 Sustainability Goals

As a leader to promote sustainable development in domestic engineering industry, CTCI has set up long-term goals for 2025 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, the Trailblazer of Green Innovation, the Employer who offers a Brilliant Workplace and the Corporate Citizen Willing to Commit.

Sustainability Role	Material Issue	Commitment	2025 Target		Sustainability Role	Material Issue	Commitment	2025 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; Development progress: 100%	Employer who offers a Brilliant 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	Enhance engineering design capabilities; Development progress: 100%				KPI 2	Health check abnormalities tracking rate: 95%
			KPI 3	Intelligent EPC projects development; Development progress: 100%					
			KPI 4	Number of technologies and techniques developed, introduced or imported each year: 5 items					
Trailblazer of Green Innovation	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	Rate of completion of integrity management courses among employees: 100%	A Corporate Citizen Willing to Commit	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	Review integrity management regulations and mechanisms every year and conduct trainings on integrity management for business partners at least once a year				KPI 2	Implementation rate of personal development plans: 90%
			KPI 3					KPI 3	Completion rate of career planning path: 85%
			KPI 4						
Trailblazer of Green Innovation	Supply chain sustainability management	Strengthen and enhance the sustainable management performance of manufacturers 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 manufacturers	KPI 1	The proportion of level 1 suppliers that signed the letters of commitment to sustainability for the year: 100%	A Corporate Citizen Willing to Commit	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	The sustainability questionnaire recovery ratio among level 1 suppliers: 100%				KPI 2	Define market positioning standards for compensation, check and adjust compensation system each year.
			KPI 3	The rate of audit on CSR high-risk key suppliers: 100%				KPI 3	Make plans of long-term incentive compensation tools such as restrictive stocks
			KPI 4	The rate of improvement for deficiencies in audit on CSR high-risk key suppliers: 75%					
Trailblazer of Green Innovation	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	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 200 reports on CTCI by the media
			KPI 2	Response rate of customer satisfaction survey: 100%				KPI 2	Internal culture promotion activities and reliable school lectures: 5 times each year
Trailblazer of Green Innovation	Efforts on climate change and Net Zero emissions	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.	KPI 1	Reduction of GHG emissions in offices: 30%	A Corporate Citizen Willing to Commit				
			KPI 2	CO ₂ emissions per person in headquarters: 1.28 tons CO ₂ e/person					
			KPI 3	CO ₂ emissions per 1 million working hours (project sites) 426.8 tons					
Trailblazer of Green Innovation	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 used at least 1 green technical method: 100%	A Corporate Citizen Willing to Commit	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	The proportion of projects that undertook low carbon and green engineering: 50%				KPI 2	Event sessions: 135 sessions
			KPI 3	The proportion of projects that made at least 1 engineering proposal delivering energy saving and carbon reduction value: 50%				KPI 3	Number of participants: 12,500
								KPI 4	Number of parties involved in the industry, government, and university cooperation: 100

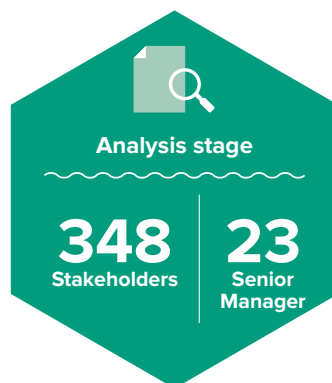
Materiality and Stakeholder Communication

According to the GRI Standards and the AA 1000 Stakeholder Engagement Standard (SES), CTCI follows the three principles of identification, analysis, and confirmation to develop a materiality analysis framework, and identifies the material sustainable issues of CTCI. In addition to be the planning tools for the sustainable strategy, it is also the reference foundation for the Sustainability report for CTCI.



In gathering issues of sustainable development, CTCI identifies 20 issues associated to the engineering industries from the four major sources of international standards and guidelines, global engineering peers, stakeholder communication, and internal business objectives as the foundation of the compilation of CTCI's 2021 ESG Report.

- International standards and guidelines: GRI Standards, UN SDGs, DJSI, CDP climate change evaluation and Sustainable Accounting Standards Board (SASB).
- Global engineering peers: For the engineering companies included in DJSI, CTCI collects sustainability information and methodology from our peers.
- Stakeholder communication: Collect feedback from stakeholders on sustainable issues from regular and informal communication and interaction with stakeholders.
- Internal business objectives: Review the organization's proposed business objectives and management approaches and identify issues related to corporate sustainability from them.



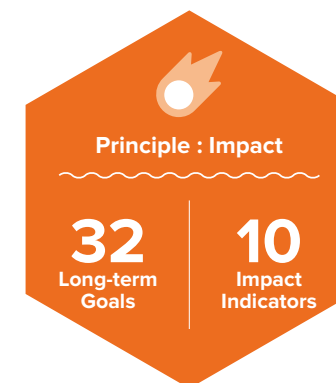
The degree of interest of stakeholders is one of the principles that determines the materiality of the issue. Through the discussion and confirmation of the members of the ESG Task Force, the six major stakeholders of CTCI are determined. Online questionnaires are used to understand the stakeholders' degree of concerns on the issue of sustainability. A total of 348 stakeholders participated in the survey, including employees (209), customers (10), investors (3), suppliers (86), media (12), and community (28).

The extent to which the sustainability issue aspects the operation of CTCI is another key principle that determines the materiality of the issue. 23 members and President from the ESG Task Force measured the impact of 20 sustainability issues individually on the Company's revenue, cost, customer satisfaction, brand image, and employee loyalty, and determined the extent to which the issue affected the business objectives.



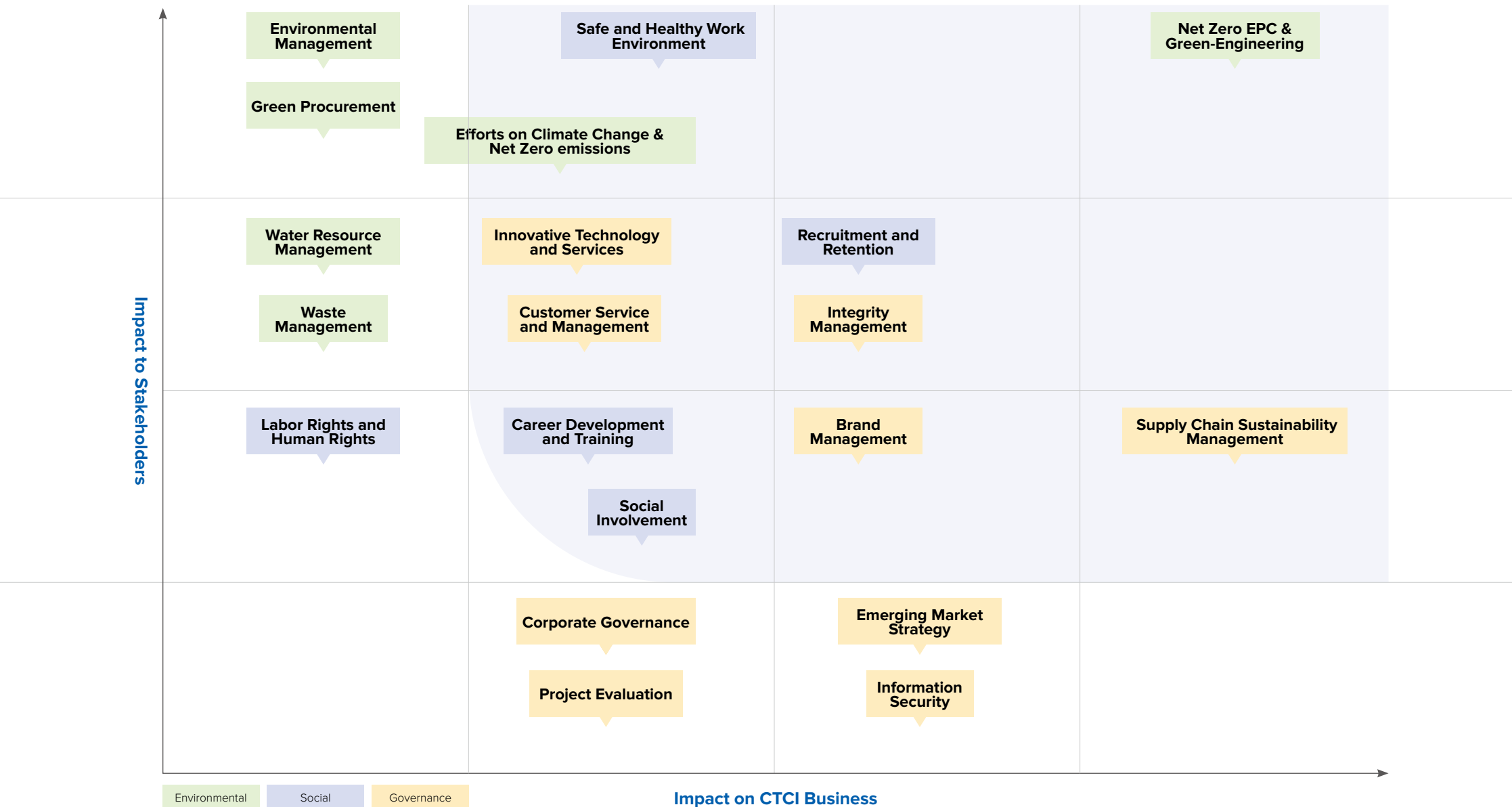
Through the stage of materiality analysis, CTCI considers the "degree of interests of stakeholders" and "impact of the issue on the operation of CTCI," and determines 11 material issues concerning the core of CTCI. Confirmed by the Chairman, the long-term goals are set for these 11 prioritized issues as total participation CSR excellence practice.

The 11 material sustainability issues match 14 topics of GRI Standards and 2 topics of CTCI industry attributes. The impact boundary of value chain is drawn based on this scope as the foundation for the report.






























In order to expand the influence of promoting corporate sustainability, CTCI has made commitments on material issues, formulating 32 long-term sustainability goals for 2025, supervising through the ESG & Net Zero Committee under the BOD promoting different projects year by year.

In addition to setting long-term goals for each material issue, 10 impact indicators are also developed to measure the influence of each issue, and the positive and negative impacts of the impact trend are pursued.

■ **CTCI Materiality Matrix for 2021**

■ CTCI's Material Issues and Value Chain

Dimension	Material Issues	Importance to CTCI					GRI Topic	SASB Topic	Our responses	CTCI Value Chain and Relationship**			
		Revenue	Cost	Customer Satisfaction	Employee Loyalty	Brand				Procurement	Engineering Planning and Design	Construction	Customer use
 Economic Dimension	Supply chain sustainability management	V	V				Procurement practices, Supplier environmental assessment,Supplier social assessment	-	Sustainable supply chain management				
	Innovative technology and service	V		V			Innovative technology and service*	-	Innovative technology and services				
	Brand management				V	V	Brand management*	-	Brand management				
	Integrity management			V	V	V	Anti-corruption Anti-competitive behavior	Business ethics	Ethical management				
	Customer service and management	V		V			Customer privacy	Completeness and safety of building structure	Information security Customers services				
 Environmental Dimension	Efforts on climate change and Net Zero emissions		V			V	Energy \ Emission	Climate Impacts	Enhance climate resilience				
	Net Zero EPC and Green-Engineering	V		V			Energy \ Emission	Life cycle assessment of buildings	Environmentally friendly technology application				
 Social Dimension	Safe and healthy work environment			V	V		Occupational health and safety	Health and safety of workers	Safe and healthy workplace				
	Recruitment and V retention	V			V		Employment, Market presence, Diversity and equal opportunity	-	Recruitment and retention				
	Career development and training				V		Training and education	-	Career development and training				
	Social involvement				V	V	Local communities	-	and Social welfare				

Notes Client use: It refers to the project planning/design that CTCI has assisted the client with, which is handed over to the client after CTCI has completed the construction. This also includes assistance in commissioning.

* This is a CTCI-specific topic.

** Direct impact Indirect impact Business relations



■ 2021 Communication with Stakeholders

Stakeholder	Stakeholder's level of materiality to CTCI	Communication method and frequency	Major issues	CTCI's Response	2021 Communication Outcomes
Employees	Employees are our most valued and precious assets, and they are also the most solid and main force in promoting international engineering services for CTCI. CTCI will work with its employees to become the "Most Reliable Global Engineering Services Provider."	<ul style="list-style-type: none"> Labor-management meetings, senior executive forums, Occupational Safety and Health Committee meeting/quarterly; Employees' suggestion platform, hotline, e-mail box, Employee Welfare Committee/any time 	<ul style="list-style-type: none"> Safe and healthy work environment Recruitment and retention Career development and training 	<ul style="list-style-type: none"> Set target values against industrial safety metrics and promote healthy workplace Strengthen professional function development and build "CTCI University" learning platform with compliance rate of professional competencies hitting 98.39% 	<ul style="list-style-type: none"> Held 4 labor-management meetings Held 2 senior executive symposiums Held 4 Occupational Safety and Health Committee meetings
Shareholders/ investors	Shareholders' / investors' evaluation of the company will affect stock price	<ul style="list-style-type: none"> Annual shareholders' Meeting Quarterly investor conference Investor conferences (irregular basis) Investor visits (irregular basis) 	<ul style="list-style-type: none"> Profitability Business outlook Horizontal competition Operational risk Sustainable development 	<ul style="list-style-type: none"> EPS reached NT\$2.15 in 2021. Benefited from the fact that many Taiwanese businesses returned to invest in Taiwan, the business opportunity in government's development of green and clean energy and Taiwan semiconductor's plan to build plants in the US, the construction work in progress and newly contracted business give optimistic outlook. 	<ul style="list-style-type: none"> Held 1 shareholders' meeting and 4 group investor conferences Invited to take part in investor conferences held by brokerage firms for 5 times and received a total of 102 visits from investors
Community	Being an active corporate citizen, CTCI proactively participates in social welfare, invites the community to protect the environment and brings prosperity to the local economy	<ul style="list-style-type: none"> Hosting a large cultural event/annually Charity sales/fortnightly Public welfare activities/when needed 	<ul style="list-style-type: none"> Social involvement 	<ul style="list-style-type: none"> Level up education quality, keep aligned with internal standard and move toward sustainable development. Care and support the vulnerable group, promoted social harmony Promote industrial communication, improve engineering industry chain level Cooperate with Syin-Lu Social Welfare Foundation in the long term, offer employment opportunities of dorm cleaning Donate foodstuffs to Taiwan Fund for Children and Families Purchase cookies from the Children Are Us Foundation, and bananas from local banana farmers as snacks for attendees of strategic consensus meeting hosted 	<ul style="list-style-type: none"> CTCI Education Foundation (CTCIEF) held 17 events and programs with the attendance number hitting 11,502 CTCI joined a total of 50 societies and consortia as group member or individual member Offered employment opportunities for 29.5 working days a year, totaling 557.5 person-hours and spent NT\$ 208,809 Subscribed a total of 34 food boxes from charity platforms throughout the year, totaling NT\$ 17,000 The costs of cookies from the Children Are Us Foundation and bananas from local banana farmers was NT\$ 832,090
Suppliers/ subcontractors	Mutual support between CTCI and suppliers; enhance suppliers' capabilities; work together with them; pay attention to quality, schedule and sustainable management, and complete the work of the proprietors	<ul style="list-style-type: none"> Supplier and factory visits/when needed Supplier Meeting/annually Questionnaire 	<ul style="list-style-type: none"> Supply chain sustainability management Safe and healthy work environment Labor rights and human rights 	<ul style="list-style-type: none"> Any manufacturer willing to register as the supplier for CTCI must sign a statement of commitment to corporate sustainability Have ESG Moment before meetings when manufacturers visit, share and advocate ESG Arrange field-visits for manufacturers Have manufacturers conduct self- assessment through questionnaires, get a preliminary understanding of manufacturers' sustainability risk; pay more visits to high risky manufacturers to check and advise for improvement 	<ul style="list-style-type: none"> A total of 4,825 suppliers have signed the statement of commitment to corporate sustainability A total of 46 domestic and overseas suppliers visited in 2021 Paid visits to a total of 21 suppliers in 2021 A total of 145 domestic and overseas suppliers responded to questionnaires in 2021 Among them, 11 suppliers/contractors were of high sustainability risk, to which we paid visits to check and advise for improvement
Customers	<ul style="list-style-type: none"> Offer contractual service as main income resource Establish solid performance results, goodwill, and brand image through contract execution 	<ul style="list-style-type: none"> Customer satisfaction surveys/annually Set annual quality objectives for projects with quarterly evaluation, and hold meetings to review the results 	<ul style="list-style-type: none"> Customer service and management Safe and healthy work environment Supply chain sustainability management 	<ul style="list-style-type: none"> Implement CRM system, establish relationships with customers and deliver quality services Set corrections for substandard and seriously off target projects and track improvements 	<ul style="list-style-type: none"> The result of customer satisfaction survey in 2021 was 8.17 out of 10 Held 3 meetings to report target measurement of project quality Examined quality targets for 25 projects
Media	Media's coverage and assessment of CTCI will affect the Company's reputation and image	Important information press release/any time	<ul style="list-style-type: none"> Information disclosure Brand image 	<ul style="list-style-type: none"> Report CTCI and CTCI's sustainability relevant activities via media Report CTCI's sustainability relevant activities in different languages via social media, improving visits to official web page 	<ul style="list-style-type: none"> Respond properly to the media so as to build the most reliable image of quality brand 682 media news reports in 2021 270 media news reports on CTCI Education Foundation



- ➔ **26** Integrity Management
- 30** Innovative Technologies and Services
- 33** Customer Service
- 38** Brand Management
- 40** Supply Chain Management



CTCI's Sustainable Role I

The Most Reliable Global Engineering Services Provider

Integrity is CTCI's key to operating sustainably. With our professional teams and innovative business culture, CTCI collaborates with suppliers to provide our clients with the best and the most trusted services. In addition, to make CTCI thrive, we will keep our brand values and practice sustainability.

Highlights

100 %

Signing ratio of CTCI Group
Codes of Ethical Conduct

51.5 %

Percentage of R&D for
environmental technology

8.17

Customer Satisfaction

Top 100

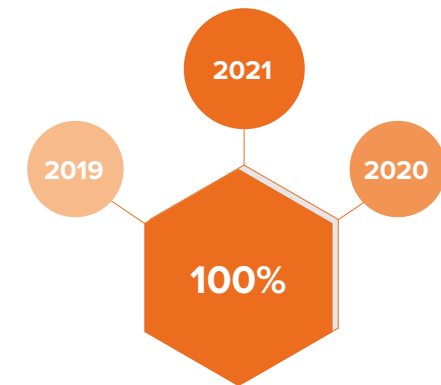
Engineering News-
Record (ENR) international
engineering companies

Integrity Management

CTCI Group Codes of Ethical Conduct and Zero Tolerance of Corruption

CTCI follows the UN Global Compact, the Universal Declaration of Human Rights, the United Nations Guiding Principles on Business and Human Rights and the International Labour Organization (ILO) - Declaration on Fundamental and Rights at Work, Equal Remuneration Convention, and other norms and spirits related to human rights, labor standards, environment and anti-corruption. CTCI takes "Most Reliable" as its brand positioning. In order to make all colleagues clearly understand the act of integrity, CTCI issued the "Codes of Ethical Conduct" in 2016 and the "Ethical Corporate Management Principles of CTCI" in 2019 as the ethical standards and codes of conduct that CTCI's directors, managers and all employees should follow when performing their duties. We respect and uphold all internationally recognized human rights and will never participate in any act of ignoring and trampling on human rights; in terms of labor communication and reflection of opinions, we uphold the freedom of speech, establish an "employee suggestion program" and announce the results of labor-management meetings, so as to completely eliminate all forms of improper labor behavior and eliminate any discrimination in employment; we should strengthen our awareness of human rights so that all stakeholders can be respected and treated fairly. "Most Reliable" is the brand spirit of CTCI, and "Professionalism, Integrity, Teamwork, Innovation" is the corporate culture of CTCI. In order to let all colleagues further understand the connotation, CTCI formulated the "Corporate Culture Supervisor Version /Employee Version Behavior Indicators" as the daily code of conduct for colleagues. Subsequently, CTCI also launched exploration activities on the connotation of corporate culture to enhance their recognition of corporate culture, work together to achieve the brand vision of being "The Most Reliable Global Engineering Services Provider".

■ Signing rate of CTCI's Codes of Ethical Conduct



CTCI Codes of Ethical Conduct

<http://www.ctci.com/www/ctci2016/upload/page/PG74-F26.pdf>



CTCI Ethical Corporate Management Principles

<http://www.ctci.com/www/ctci2016/upload/page/PG74-F18.pdf>



■ CTCI Codes of Ethical Conduct Training

		2019	2020	2021	2022 goal
New recruits	Number of trainees	205	143	461	-
	Coverage rate	100%	100%	100%	100%
	Training hours	102.5	71.5	230.5	-
Regular training (All employees)	Coverage rate			100%	100%
	Training rate			100%	100%

CTCI deeply rooted the culture of ethical management in the hearts of every colleague. In order to implement the content of the code of conduct, CTCI arranged courses related to ethical conduct in the newcomer training meeting, conducted in-depth reliable education and training courses for all colleagues of the group, and continued to announce and emphasize CTCI's concept of ethics: anti-corruption, integrity, commitment and honesty. Training and signing of CTCI Codes of Ethical Conduct is held every year for all colleagues (including formal, contracted and assigned). In 2021, 461 new recruits in Taiwan received training, with a coverage rate of 100%. CTCI continued to promote education and training to all overseas business bases around the world, expand to all colleagues of the group, establish the group corporate culture of ethical management and establish the brand value of the Most Reliable.

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Implement Ethical Management - Education and Training Advocacy

For all colleagues in the Procurement Division who handle procurement operations and have direct contact with external vendors, they should fill in the procurement personnel code to strictly abide by it, and fill in the questionnaire to establish personal data to facilitate the work assignment of the Division.

For site colleagues, we continue to strengthen the advocacy and training related to site colleagues by means of online meetings and education and training, and post the conduct indicators of corporate culture on each site. We advocate the spirit of "Most reliable" throughout the global domestic and foreign operation bases and site fields, and cultivate the concept of ethics and sustainability of colleagues and contractors.

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. On November 10, 2021, the latest version of "Analysis of Insider Trading Laws and Regulations," "Common Doubts about Insider Trading Supervision and Practice" prepared by the TWSE and the Company's "Measures to Prevent Insider Trading" were provided to all directors.

For suppliers, we have also formulated a "Code of Conduct for Supply Chain" for suppliers, which requires all vendors (including new suppliers) to abide by. We also encourage our vendors to require their partners with the same standards, hoping to promote the sustainable development of the overall industrial chain through the interaction between upstream and downstream of the industrial chain. In order to continuously improve the sustainability of the supply chain, since 2016, CTCI has comprehensively required those who want to become CTCI new partners to sign the corporate sustainable operation commitment. For details, please refer to sustainable supply chain management.

To ensure fair trade and 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. We clearly define 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," and regularly announce the "no gift receiving policy" in three festivals of each year. We also implement and promote the part of overseas projects with the same standards, and provide necessary education and communication to partner vendors. At the same time, our owners will also advertise and audit from time to time. This truly demonstrates CTCI's determination to promote this policy.

■ CTCI Corporate Culture Activities



The Journey of Reliability

-
October 2017 ~
Ongoing

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



Reliability School Lectures

-
March ~ November,
2021

Inviting prominent experts and scholars from other disciplines to conduct lectures on team integrity and innovation.



Team Appreciation Week

-
November ~ December,
2021

Sending warm wishes and gratitude to partners who have worked hard in the past year during the COVID-19 pandemic.

Reporting and Protection

CTCI takes "Most Reliable" as its brand positioning. Externally, a third-party impartial unit, Deloitte & Touche, is appointed to build a "reporting website" on the "employee opinion platform" to protect the rights and interests of whistle-blowers and ensure the proper investigation and disposal of reported cases. If an employee discovered any unjust behavior inside the Corporation, which will or is exerting adverse impacts to the Corporation, and jeopardize employees' interests, he/she shall file for reporting. The website also accepts reports of illegal activities by anonymous and cooperative vendors. The Human Resources Department will reply the final results within the time limit, and the process will fulfill the responsibility of protecting employees and vendors.

Integrity is one of the core elements of CTCI's corporate culture. In terms of operation and management, we counted how many of the engineering bases that we provided services in 2021 were among the 20 lowest ranking countries in the Transparency International's Corruption Perception Index^①. After investigation, we found that there were no construction projects located in these countries.

In 2020, in order to strengthen integrity, the whistleblower clause was added, and the "Measures for Whistleblower Operation Management" was revised in March 2021, including the protection mechanism and incentive mechanism for whistleblowers, which is applicable to the whole group. The protection mechanism strengthens the confidentiality of the whistleblower's personal information. All members in the Reward and Punishment Committee and relevant personnel involved in handling the case must sign a non-disclosure agreement, defining the responsibility and punishment if any information is disclosed. Those who have conflicts of interest with the reported case should actively avoid the case and not participate in the investigation as well as promise to protect the whistleblower from dismissal, demotion, salary reduction, infringement on their legal, contract or customary rights, or other disadvantages. The incentive mechanism is determined by the Reward and Punishment Committee, and the reporting bonus will be given immediately based on the size of the case. No credit or announcement will be made in order to protect the whistleblower and encourage employees to report suspected cases. CTCI continues to implement the corporate culture of "Professionalism, Integrity, Teamwork, Innovation." It reaffirms and strengthens employees' integrity, probity, commitment, and honesty through their daily operations. In addition, it further incorporates corporate culture into the employee's annual performance appraisal items, and promotes corporate culture activities for each and every employee to foster an integrity mindset.

Mechanisms to encourage reporting and protect whistleblowers

Strengthening Protection Mechanisms

Optimizing Reporting Mechanisms

Developing Incentive Mechanisms

Accusation Management Regulations

<http://www.ctci.com/www/ctci2016/upload/page/PG74-F20.pdf>



CTCI Corporate Integrity Operation Policy Report for 2021

<http://www.ctci.com/www/ctci2016/pdf/CH/2020%20integrity%20report.pdf>



How to report

CTCI Report website

<https://secure.conductwatch.com/ctci/?Pg=1&Lang=en-US>



CTCI Report mail

ctci@reportnow.com.tw



Statistics of Employee Opinion Platform

	2019	2020	2021
Type of case	Number of reported cases		
	5	3	4
	Unreasonable use of corporate assets or resources		
	-	-	-
	Inadequate engagement, gifts, kickbacks		
	-	-	-
	Conflicts of Interest		
	-	-	1 ^①
	Workplace violence		
	-	-	-
	Sexual harassment		
	-	-	-
	Discrimination		
	-	-	-
Others (including supplier management, employee management, supervisor communication and leadership, etc.)			
	-	3	3 ^②
Number of official cases			
	5	3	2
Number of investigations completed			
	5	3	2
Number of cases under investigation			
	-	-	-

Notes

Four cases were reported in 2021, all of which have been investigated and closed. The case descriptions and improvements are as follows:

- ① Improper entertainment, gifts or rebates: It is reported that vendors and employees accepted rebates, which is a sporadic purchase on the construction site with a single amount of less than NT\$30,000. However, the two parties have retired in 2018 and 2019 respectively, so it is difficult to verify. The Company adopts the policy of zero compromise and zero tolerance for the insistence and requirements of integrity, and has asked relevant departments to review the operation process of such sporadic procurement.
- ② Unhealthy, unsafe environment: The Company is reported coercing employees to work in the U.S. before issues with lodging, transportation, and COVID-19 vaccinations were resolved. Subsequently, we assisted colleagues to register for vaccination in the U.S., applied for travel insurance related to COVID-19, arranged accommodation and transportation as soon as possible and provided local living instructions.



Notes ① <https://www.transparency.org/en/cpi/2021>

Evaluation and Inspection-Internal Control and Internal Audit

CTCI's internal control system is based on Financial Supervisory Committee's regulation, namely Regulations Governing Establishment of Internal Control Systems by Public Companies. 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 an internal audit unit, the Audit Department, which is under the Board of Directors and is staffed by a dedicated audit supervisor 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 and as a basis for reviewing the internal control system.

The Audit Department implements audit operations in accordance with the annual audit plan approved by the Board of Directors, 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 audit supervisor also attends the Audit Committee and the Board meetings to submit an audit report to implement the audit results.

The Audit Department would routinely request all units to carry out self-assessment every year to identify the likelihood of occurrence for control items and confirm the implementation outcome. In the event of any unconformity or irregularity, the units concerned shall not only come up with improvement measures, but shall file a concluding report on the implementation effectiveness. The audit unit would review the outcome assessment. In addition, audit operations related to ethical corporate management would be conducted in accordance with the annual audit plan, and the audit results are reported to the ethical management dedicated unit on a quarterly basis, so as to facilitate the effectiveness of integrity management.

Internal Audit Organization and Function

http://www.ctci.com/www/ctci2016/pdf/ch/202105_audit-CH.pdf



Fair Trade

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, we always abide 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, we always undertake 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. So far, 389 trainees in past three years have been trained, an evidence that we are aggressively implementing fair trade and related laws and regulations. There were no cases in violation of competition in recent years.

CTCI Group's Antitrust and Fair Competition Policy

Specific requirements of CTCI Group Antitrust and Fair Competition Policy

- According to the Enforcement Rules on Codes of Ethical Conduct for Employees and CTCI Group's Code of Conduct for Vendors, any violation, suspected violation, or possible violation of this policy or related laws shall be reported through CTCI Group website (<http://www.reportnow.com.tw/ctci/>) or by email (ctci@reportnow.com.tw). To help with the investigation, the content of report must include a clear description citing who, what, when, where and how, or any other forms of evidence.

CTCI Report website

<https://secure.conductwatch.com/ctci/?Pg=1&Lang=en-US>



CTCI Group's Antitrust and Fair Competition Policy

<http://www.ctci.com.tw/www/ctci2016/pdf/EN/CSR-PDF/P63-%20CTCI%20Group%20Anti-Trust%20Policy.pdf>



CTCI Report mail

ctci@reportnow.com.tw



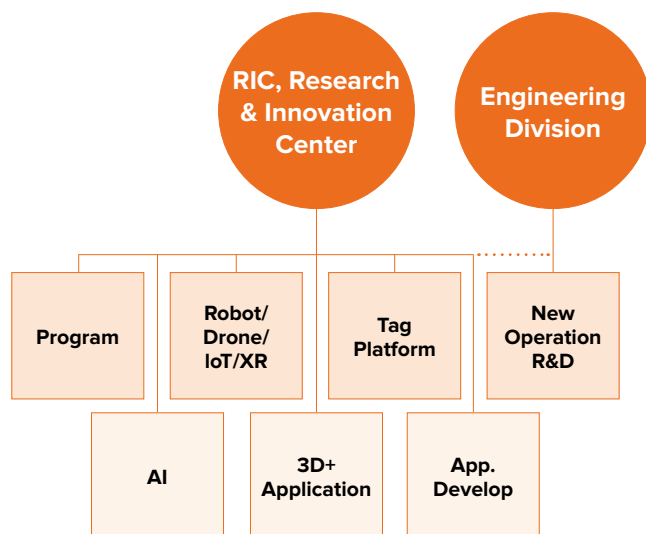
- If CTCI's suppliers or vendors have breached or may have breached legal regulations pertaining to anti-trust laws, the Group should comply with the government institution and facilitate in its investigations.
- If an employee has breached this policy or related laws, a thorough and comprehensive investigation will be conducted to review all his/her professional records, and he/she will instantly be suspended from work. Criminal activities will not be tolerated and will be reported to the authorities.
- Education and training: All Group employees involving in sales, projects, and procurement representative are required to undergo trainings on antitrust laws and fair trade laws, as well as take case study courses. Course materials are uploaded to the Group's internal website for all employees to read. These materials are also attached to the Group's training documents for new recruits.

Fair trade training in the past three years	Annual number of trainees	Total number of employees in the department that required training
Total number of trainees in 2021	103	210
Total number of trainees in 2020	139	209
Total number of trainees in 2019	147	232

Innovative Technologies and Services

Innovative Research and Development

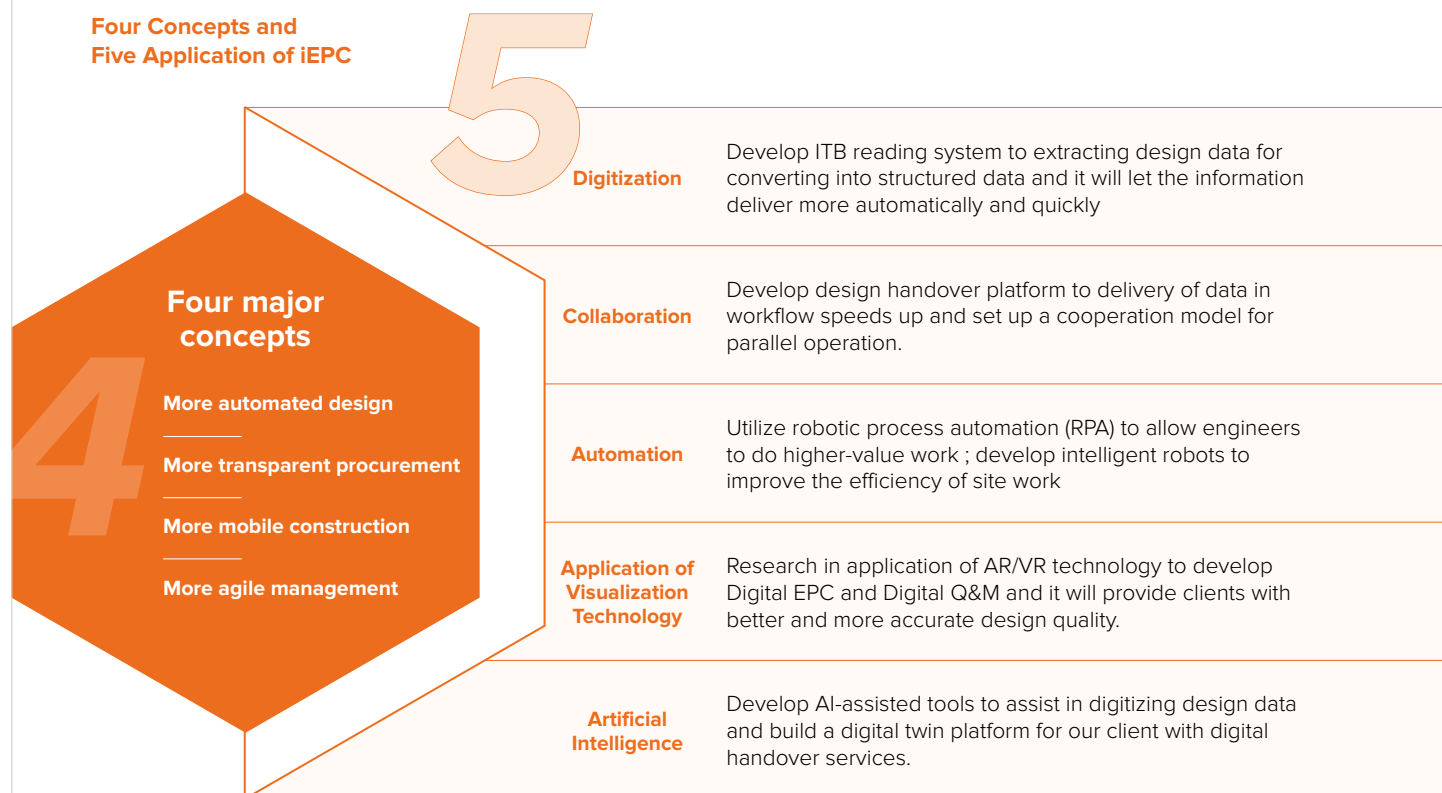
With a corporate culture of professionalism, integrity, teamwork, and innovation, CTCI seeks to continuously accumulate development potentials by implementing innovative research and development. Since the establishment of the "Innovation R&D Center" in 2017, we have continued to invest resources in 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 2021, 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, 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 have the quality and efficiency of CTCI's work been enhanced, but value-added digital service have been provided to customers, allowing CTCI to differentiate our services from competitors and becoming a unique produce of EPC turnkey project.

Four Concepts and Five Application of iEPC





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The iEPC platform has entered the 2.0 stage with optimized efficiency and quality of each stage of the EPC and provides significant benefits on the improvement of work safety and cost saving. In the engineering stage, iEPC's AI-assisted tools can enhance PID identification and picking, data sheet retrieving, and by structuring data it helps to minimize the need of manual re-entry. When applied to procurement tasks, we utilize robotic process automation (RPA) in bulk material batch input. Through RPA, the operational risks and complex, repetitive tasks will be reduced, allowing our engineers to concentrate on high-value works. As for the construction phase, we 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 workforce. Beside, we have developed the internal pipe cleaning robot that allows the construction works to be more flexible and enhances the automation and efficiency of field works.

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. By now, we have improved engineering designs and qualities of engineering reviews, and updated design guidelines and specifications, examples include: established desalination system technologies, high-tech factory engineering guidance, package system designs, cooling storage tank designs, hazardous area classification and explosion-proof level selection technology. Also, workshops and training courses have been conducted to strengthen EPC project execution capabilities for our engineers, with the end goal of making project executions faster, better, more precise and competitive to meet the demands in the fast changing markets.

2020

- Development of digital engineering data retrieval technology (Phase II).
- iEngineering — Design Collaboration Development.
- iConstruction — Construction Planning Development.
- Research for intelligent technology of construction site management.
- iEPC system development — 2020.
- Research of pure water treatment workflow.
- Research of sludge treatment system.
- Packaged equipment capability improvement — 2020.
- Research and development of EPC technology of cryogenic storage tank — 2020.
- Lightning electromagnetic interference research.

Only key development technology or products are lists

2021

- Development for Engineering Data Extraction Technology (Phase III).
- Digital Transformation of EPC.
- Development and application for digitalization and AI technology.
- Research for Intelligent technology of construction site management.
- iEPC Intelligent Design System Development — 2021.
- Research of Seawater Desalination System.
- Research of Cooling Storage.
- Package Equipment Capability Improvement — 2021.
- i-Procurement 2021.
- Construction 2021 R&D Topics.

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 51.5% of its investment in environmental investment in 2021, reaching NT\$74,572,515. Applications that we developed include real-time information board, site mobility, labeling, equipment information integration, seawater desalination system design, cooling storage 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.

Unit: NTD

R&D category	R&D projects	Monetary amount invested				No. of employee involved			
		2018	2019	2020	2021	2018	2019	2020	2021
Process innovation	Information integration, intelligent management, mobile applications, visual applications, system transfer, and Big Data	23,268,499	27,788,350	19,431,430	39,548,446	16	21	18	24
Design technologies	Engineering technologies	7,649,618	7,086,041	7,695,468	15,232,754	5	5	7	8
	Civil engineering technologies	18,924,221	17,291,824	5,028,524	9,646,825	11	12	5	6
	Equipment technologies	8,124,844	5,081,196	12,876,264	17,561,783	4	3	10	9
	Instrument and control technologies	8,832,387	6,228,264	4,440,065	8,780,623	5	4	5	6
	Pipeline technologies	19,803,855	17,796,093	25,658,899	21,650,855	13	13	21	12
	Electrical engineering technologies	9,223,527	8,529,746	5,754,445	8,660,224	6	6	5	5
Supply chain	Equipment management, intelligent information dashboard, and logistical management	17,186,085	14,801,096	10,764,499	19,365,305	10	10	9	10
Construction technologies	Construction management, modular applications, 4D visualization, scaffolding management, mobile HSE, and warehouse management	7,836,137	9,390,370	8,787,406	4,354,185	5	7	8	2
Total		110,462,454	113,992,980	100,437,000	144,801,000	73	75	81	73

Notes

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

Upholding the concept of innovation and leadership, CTCI will continue to strengthen our professional skills, especially in the front-end 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 the modification and innovation of procedures, develop procedures and technologies that improve efficiency and save costs, so that we can enhance our competitiveness and stay ahead in the industry.

2022 Research and development prospects

Develop AI-assisted tools to identify information in tables, drawings, and semantic meanings to facilitate the digitization of engineering information.

Pinpoint the insufficiency in professional skills, enhance the design professional ability.

Develop an AWP planning system suitable for CTCI's work processes. Applying new technology and new techniques to improving the automation and efficiency of the construction site.

Establish a construction management system that aims to complete the construction steps in sequence. Establish a real-time EAC early warning control system through information integration.

Build a cloud-based digital platform to provide clients with digital handover services. Establish a plant maintenance record system to provide maintenance services to plants with new technology.

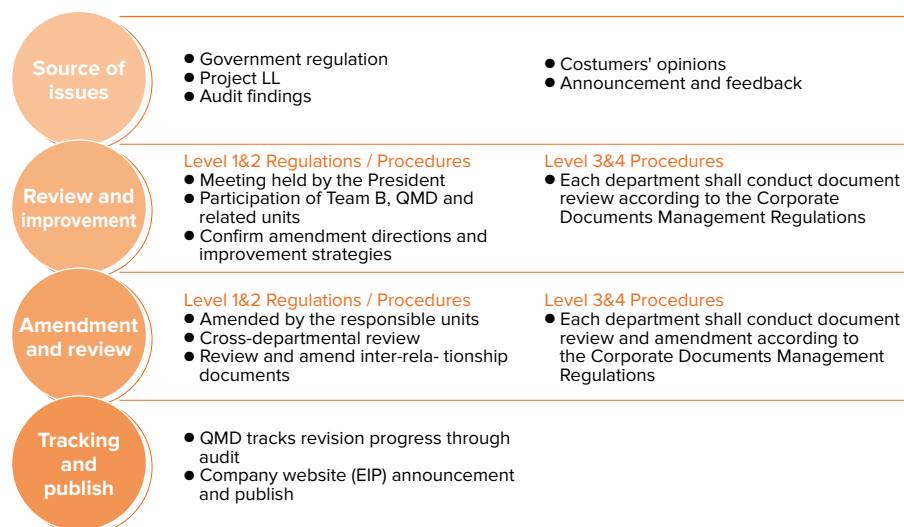
Customer Service

Service Quality

● Improvement on Regulations and Procedures

In order to improve our service quality, CTCI continues to improve its internal procedures, collect suggestions for improvement from all parties, fully communicate through the high-level executive meeting chaired by the President to confirm the revision direction and the countermeasures for improvement, and proceed with the documentation revision. The Quality Management Department will follow up with the revision schedule of each responsible unit and make sure if the document quality meets the requirements of "CP-001 Corporate Documents Management Regulations." It will then be officially announced on the company website. In 2021, a total of 91 Level I and Level II regulations/procedures were formulated and revised, while a total of 282 Level III and Level IV documents for various departments were formulated and revised. The main reasons for the revisions were organizational adjustment, department name change, control mechanism continual improvement and reviews on practical needs.

■ Process of Continuous Improvement on Regulations and Procedures



■ Number of document formulated or revised in 2021 (Document Level / Copies)

Level I : 52 Level II : 39 Level III : 95 Level IV : 187 Total : 373

● Strengthen Employees' Awareness and Compliance with Regulations/Procedures

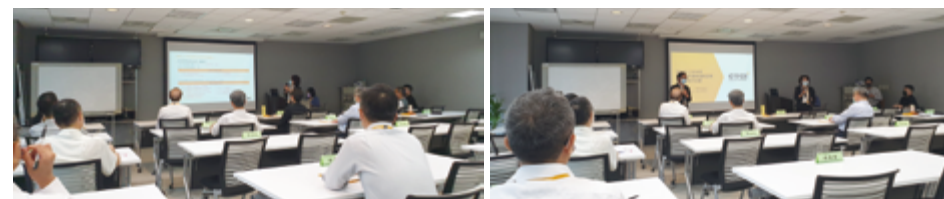
Semi-annual Briefings of Regulations/Procedure Updates and Announcement of Major Issues

Once the regulations/procedures are formulated/ revised and issued, the next important task for corporate sustainability is to give all employees the "awareness" and "ability" to apply them to their daily work. In order to help our employees understand the newly revised regulations and procedures, we organize a "Briefings of Regulations/Procedure Updates and Announcement of Major Issues" every six months, so we can promote our latest project implementations and control requirements in real time. Briefings are presided over by the President and are supplemented by tests after briefings. This serves to strengthen colleagues' understanding on the latest regulations and procedures. After reviewing the suggestions put forth by our colleagues with the responsible unit, the comments will be reported to the high-level executives and then announced on the EIP, and all participating colleagues will be notified via email.

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

Session	Training content	Trainees	Approach	Date	Total number of trainees who completed the training	Ratio of trainees who completed the training	Training Hours <small>Note</small>
1	<ul style="list-style-type: none"> Promoting Regulations/ procedure revision focuses, related responsibilities and obligations, amendment history and expected outcome. 	Relevant department heads and project-level supervisors (PD, PM, PE, PXM)	Classroom	2021/1/13, 2021/1/18, 2021/1/21	207	100%	724.5 Hours
			e- learning	2021/2/3~2021/3/31	159	100%	556.5 Hours
2	<ul style="list-style-type: none"> Announcement of major corporate policy or critical issues in terms of engineering technology Project execution experience feedback 		Classroom	2021/8/18, 2021/8/26	219	100%	766.5 Hours
			e- learning	2021/9/8~2021/10/8	140	100%	490 Hours

Notes 3.5 hours per person per session.



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

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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

Session	Training content	Trainees	Approach	Unit	Total number of trainees who completed the training	Ratio of trainees who completed the training	Training Hours <small>Note</small>		
1	<ul style="list-style-type: none">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	e- learning	Engineering	670	100%	863.5		
		Authorization Engineer Lead Engineer Check Engineer Engineering Engineer		Procurement	65	1,025	100%	29.3	979.8
				Construction	290	100%	87		
				Procurement	Engineering	871	100%	1,286.5	
		E/M Procurement Engineer Subcontracting Engineer E/M Inspection Engineer		Procurement	66	1,261	100%	65.0	1,589.2
				Construction	324	100%	237.7		
				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				
2									

Notes — Statistics are based on the number of participants in each course unit and the number of course hours.

Courses on Quality Control at CTCI University

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 84 courses in seven categories, however, in 2021 due to demand from CTCI Americas to have trainings on the project operation information management system (POMS), so, it was revised to 105 courses in eight categories. A total of 43 courses were completed in 2021.

■ Status of the Courses on Quality Control at CTCI University

Course Type	Total number of planned courses	Number of online courses completed in 2021	Total number of completed courses
Quality Laws/ Regulations	2	0	2
Quality Management System	7	1	7
Corporate Regulation/Procedure Awareness	56	19	44
Quality Management Practice	3	0	0
Quality Professional Skills	7	0	0
General Quality Management	5	0	0
Intellectual Property Protection	4	2	3
Project Operation Management System	21	21	21
Subtotal	105	43	75

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● Quality Management in Response to the Pandemic

Since 2020, the world has been in the grip of a pandemic, in order to maintain the Company's operations without interruption and ensure that the service quality continues to meet customer needs, a series of adjustments were made to the quality management process for activities that previously might need to involve more interaction among personnel, such as audit, inspection, and routine quality checks. We also keep abreast of the latest measures and information on public work to ensure that quality management is not compromised during the pandemic, so as to be "The Most Reliable Global Engineering Services Provider" that continues to provide customers with high-quality and reliable engineering service.

Adopting "remote audit" and "remote inspection"

Using cloud shared database and dedicated line configured at the project sites, various communication equipment, voice and video software are used to achieve the purpose of pre-audit document review and immediate feedback for spot check of on-site quality management and inspection without directly contacting the audit personnel or going to the site.



Online audit of project at CTCI's first headquarters.

Strengthening routine quality inspection

Based on CTCI's long-term promotion of the electronic operations of various operations and the establishment of a friendly data sharing environment provided by the online information management system, project quality managers can use online data to review project operations and quality compliance to compensate for not being able to go to site due to the pandemic. According to the implementation results of each project, if a work item is found to be unattainable due to the incomplete management mechanism or procedure, quality managers shall quickly report upward through the department, modify the guidelines/procedures, and refine the management mechanism in order to continuously improve the quality management system.



Perform remote site inspection by connecting with the project team online.



The project quality manager conducts inspection through the cloud data sharing system.

Mastering the latest measures and information of public works

We compile the correspondence or measures issued by the Public Construction Commission of the Executive Yuan in response to the pandemic, and set up a storage platform for personnel to query, so that personnel of the project can quickly obtain complete information. At the end of July, with the slowdown of the pandemic, CTCI invited Ming-Yu Wang, Section Chief of the Engineering Management Office of the Public Construction Commission, Executive Yuan, to talk about "Domestic Public Construction: Quality Issues and Policies," covering topics such as laws and regulations on quality, policy focus for the year, common shortcomings on engineering audit and relevant experiences, as well as the practices of the competent authorities on project auditing, in order to continuously improve the personnel's concept of quality management for public engineering construction and understand the latest public engineering laws and regulations.



Lecture on "Domestic Public Construction: Quality Issues and Policies."

● Continuous Strengthening of Intellectual Property (IP) Protection Mechanism

With the growing international attention on intellectual property (IP) protection, reliable intellectual property protection is directly related to customers' evaluation for CTCI. From 2017 to 2018, we conducted a comprehensive review and improvement of the protection of intellectual property, including: "Letter of Undertaking Company's Policies on Confidentiality and Intellectual Property Rights", non-disclosure agreement (NDA), management and control of confidential documents, etc. In 2021, in response to the risk of intellectual property infringement found in IP audit, we strengthen various management and raise awareness in three major areas in order to reduce risks and protect the intellectual property of the Company, customers/partners, and suppliers.

■ Refinement and Improvement of Intellectual Property Protection in 2021

Continuous Improvement of Management Guidelines

- Revised the "Group NDA Management Regulations": including revising the "User manual of NDA e-flow review system" and adding the processing method of NDA that cannot obtain both parties' signature successfully.
- Revised the "Confidential Document Management Regulations": including revising the confidentiality warnings of sensitive documents, adding the requirement that each page of SOP should be labeled with confidentiality warning in addition to the cover page, strengthening the distribution control of editable SOP files, and revising the contents and storage location of the list of confidential documents according to the control requirements.
- Newly formulated the "Group NDA Management Regulations": establish a protection mechanism for trademarks, patents, copyrights, and trade secrets.

Strengthening the Control of Intellectual Property

- Risk control of the inappropriate outflow of SOPs: except for the cover of SOP, the system will automatically add confidential warnings on each page. In order to prevent inappropriate use or leakage of SOPs, a warning and control mechanism for abnormal access of SOP is added to avoid inappropriate downloading, and corresponding disposal and response measures are also taken for any abnormal findings.
- Added the daily IP inspection of project: the project IP Manager (PIPM) shall conduct regular project inspection according to the quotation and the "IP operation checklist" in the implementation stage. In case of poor implementation, work with or supervise the project authorized personnel to realize actual implementation, and strengthen project IP training to improve the implementation of project IP control and protection.
- Customized IP control of Advanced-Tech Facility Business Operations (ATFBO) project: IP implementation plan template and IP control mechanism have been customized in response to the high demands and expectations of ATFBO customers for IP control, such as control of equipment with photographic function (such as cameras, laptop cameras, personal mobile phone cameras, etc.), log out of the computer when leaving the seat, increase IP requirements and penalties for vendors, increase IP audit frequency, etc. in order to meet customer demands.

"Intellectual Property Protection" Concept and Awareness Promotion

- Recorded 4 "IP awareness videos" (intellectual property protection and control mechanism), "PJ-009 Project Intellectual Property Protection Management Procedure," "CP-104 Confidential Document Management Regulation," and the explanation of "Letter of Undertaking Company's Policies on Confidentiality and Intellectual Property Rights" signed by employees), and launched an online course at CTCI University to strengthen all personnel's awareness of IP regulations.
- Conducted a lecture on "Business Intellectual Property Rights Management System", and invited lawyer Wen-Zhi Lai of InfoShare Tech Law Office to share his knowledge on intellectual property management, business operation and trademark/patent management, core of copyright management, risk control of trade secrets, and on how to reduce the risk of infringement disputes, so as to equip all personnel with the basic concept of intellectual property rights.
- Conducted the intellectual property (IP) protection awareness evaluation for all employees of the Group. The targets of the evaluations are personnel of the Group's domestic and overseas entities, and all of them must obtain full scores. The total number of people evaluated was 5,796.

Customer Satisfaction

"To Satisfy Our Customers with Optimized Engineering Services" is CTCI's corporate mission. Based on this mission, we take customers' feedback very seriously. For many years, we have been collecting customers' feedback based on "Customer Service Enhancement Regulations." Not only do we collect customers' opinions right after we provide our services, but we also hold annual surveys. We also set up a cross-departmental "Customers Services Feedback Group," coordinated by the President, to take actions according to the survey results. The Group would review the customer feedback collected in the survey, propose corrective actions, and instruct the departments concerned to fulfill their tasks accordingly to earn the trust of our customers and make sure their expectations are met.

■ Improve customer satisfaction and strengthen customer relationship management

○ Regular visits every six months to customers whose projects are being executed

In order to maintain a good relationship with our customers and collect feedback from them effectively, our sales team s would regularly visit customers whose projects are currently being executed every six months as a way to strengthen communication and manage relationships. Our sales teams would help report issues and solve problems to maximize customer satisfaction.

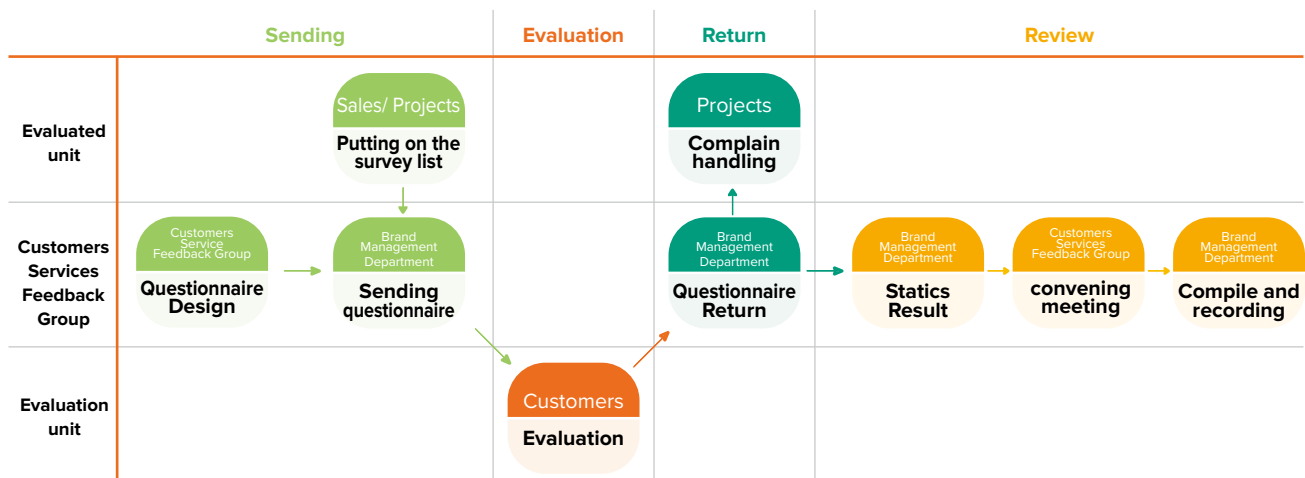
○ Introduce a new response method called "Customers' service demands or suggestions"

Even when a project comes to warranty period and the customer makes further demands or suggestions, our project department would still handle them accordingly. If necessary, the project team would notify the Marketing & Sales Department A s to the subsequent tasks that need to be completed during the warranty, we will follow them up and keep them under control to improve our service quality.

To better understand the needs and thoughts of our customers, CTCI conduct the external survey once every year. In 2021, we set the annual target at 8.5 points and customer satisfaction survey was conducted on 22 projects, with a response rate of 100%. Customers gave CTCI a score of 8.17 out of 10 points. The technical professionalism satisfaction score is 8.35 and above the average. The general average score of green engineering projects is over 9, the highest among all projects. CTCI has reviewed and formulated improvement measures in detail for all customers' ratings. In addition to the opinions of external customers, CTCI also implemented internal satisfaction survey (The evaluation is carried out by project managers on engineering and technical departments). The internal survey results are compared with the external customer's questionnaire as a guide to improve service quality, helping us better understand the internal and external issues as well as the advantages and disadvantages of each project.

To maintain the target of 100% response rate, the Marketing & Sales Department continues to increase the frequency of customer visits and become more familiar with customers. For overseas owners or owners that stay overseas for a long time, CTCI would call them by phone to stay in touch; for site owners, we would contact their senior management through our local supervisors and ask for their suggestions and opinions on the project face-to-face, so we can understand their needs and provide better service. CTCI is very strict in monitoring our engineering quality and construction processes. There were no defects or safety-related conditions that required re-construction in the projects from 2019 to 2021, and there were no related costs.

■ Flowchart of Conducting External Customer Satisfaction Survey



Years	HSE	Engineering Quality	Project progress	Professional technology	Professional management	Average score
	Occupational safety and health Environmental Management	Engineering Procurement Construction	Engineering Procurement Construction	Engineering Procurement Construction	Response effectiveness and speed Communication and coordination Leadership	
2018	7.97	8.07	8.17	8.17	8.38	8.15
2019	8.17	7.60	7.70	7.87	7.80	7.83
2020	8.56	8.27	8.02	8.26	8.36	8.29
2021	8.08	8.06	8.02	8.35	8.36	8.17

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Project Evaluation

Whenever we carry out our projects, we always have our values and visions at heart, namely the values of "professionalism, integrity, teamwork, and innovation", as well as the vision of living up to "the Most Reliable Global Engineering Services Provider." To cite the project evaluation of Linhai Wastewater Treatment Plant BTO Project in Kaohsiung as an example, our project team carried out risk assessment in accordance with our project risk management procedure as shown in the flow chart below. The assessment covered the reviewing of bidding documents to understand the responsibilities and obligations of the contract. It also identified the risks that may have positive or negative impacts on people, the environment, assets, society and culture, project cost, and schedule. The degree of impact was analyzed and evaluated before we formulate response plans. Risk assessment and countermeasures are then reported to the senior management at the price review meeting. In the report, we include the public's attitude towards the case and their potential concerns, the countermeasures taken, and the impact on our competitiveness. This is to ensure that the project can be well implemented.

■ Project risk management procedures and project risk management flowchart



Regarding the various risk response plans for the different localities in each project, CTCI would communicate and interact with the public in a positive manner, explaining to them the mitigation measures for potential impacts so that there would not be much public concern. And in the process of doing so, we build better relationships with them.

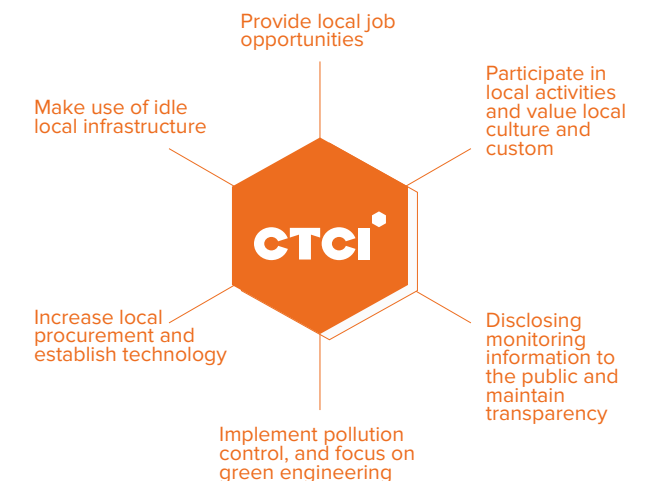
As shown in the following strategy diagram, when we carry out a project, we organized public briefings, place high importance on the local ecological environment, and respect different cultures and religions. Through an appropriate communication as well as professional, innovative technologies, and an honest attitude, we are able to overcome potential impacts. In addition, we disclose publicly the environmental monitoring information, so that people could better understand and monitor what we do. We also provide more job opportunities and increase local sourcing to avoid potential risks. In all, they ensure the coexistence of our projects and local development. Taking the Linhai Wastewater Treatment Plant BTO Project in Kaohsiung as an example, though the site is located inside the industrial park, we still tries our best to promote the harmony and co-prosperity with the local society and environment and actively achieves corporate social responsibility in the economic, environmental, green engineering, and social and cultural aspects. The steps included seeking to entrust local engineering and construction companies in southern Taiwan to cooperate on suitable work items, renting nearby idle factories as temporary warehouses, making good use of local manpower, technology and material resources, increasing employment opportunities and promoting regional economic development. At the same time, CTCI also worked with all participating manufacturers during the construction processes to implement various environmental protection measures and monitoring to ensure the maintenance of the environment.

The inauguration ceremony of Linhai Wastewater Treatment Plant BTO Project in Kaohsiung has been held on Jan. 14, 2022. The completed plant supplies 33,000 CMD reclaimed water to Linhai Industrial Park, easing the strain of industrial water use. Under a future expansion plan, the plant capacity is expected to be further increased to 60,000 CMD, to ensure sufficient and stable water supply of reclaimed water for the development of local industries, while fulfilling circular economy. The project is Taiwan's first integrated sewage treatment and reclamation plant, with a concession period of years. Our project team has tackled multiple technical issues

during project implementation. Specifically, the sewage pipes in service had to be connected to the Linhai plant as source water, posing a major technical challenge; the project team not only pioneered related engineering design in Taiwan, it also overcame the existed complex underground pipes and MRT tunnel laying work despite the pressure of the COVID-19 pandemic, while giving considerations to public opinions and environmental friendliness during the construction stage. In future operations, local resistant will be given priority consideration in the selections of plant operational staff; we will also actively participate in major local cultural activities to further fulfill corporate social responsibilities.

CTCI has entered sewerage system business for over two decades. In recent years, we are keen on the opportunities of water resource in the context of circular economy and has successfully expanded business of wastewater reclamation from industrial, municipal sectors to that of the high-tech manufacturing process. CTCI is committed to introducing green engineering and resource cycling technologies to projects served worldwide as "the most reliable global engineering services provider."

■ Diagram of Risk Response Strategies and Plans for All Project Locations



Brand Management

Launched an international media marketing plan to be globally marketed as most reliable brand

In 2016, CTCI released the global brand CTCI with "Most Reliable" as the brand slogan in hopes of becoming The Most Reliable Global Engineering Services Provider. At the same time, we gathered the consensus of our subsidiaries to establish a brand management department in order to strengthen CTCI's ability to communicate with the international market. We actively welcome the next wave of growth and global cooperation opportunities in order to expand the development of the overseas market. CTCI set a blueprint for our brand development strategy and launched a series of brand marketing plans and activities. Our achievements include: interviews and reports by media such as CommonWealth Magazine, Global Views Monthly, Harvard Business Review, Business Weekly, Manager Today, Economy Daily News, Commercial Times, CWS podcast program by CommonWealth magazine, etc. We also won "2018 REBRAND 100®," the most authoritative global awards in brand repositioning, as well as the Distinguished Project Award from PMI Taiwan. Additionally, we have been recognized as "Best Companies to Work for in Asia 2021" by HR Asia, an authoritative publication for senior human resource professionals across Asia, for efforts in talent fostering, employee experience, retention, and care.

In addition, in the Engineering News-Record (ENR) rankings, one of the most credible and internationally renowned engineering magazines, CTCI has been listed in the category of International Contractors and International Design Firms as one of the world's top 100 engineering firms for six consecutive years. This recognition indicates CTCI's success in penetrating the international market. In terms of domestic recognition, CTCI ranked among the top 5% on the Top 650 Service Enterprises list in CommonWealth Magazine's 2021 Top 2000 Enterprises Survey (ranked mainly based on the revenue and profit of the enterprises in 2020) and retained the top place in the Contractor Sector.

CTCI was also selected as a member of the Dow Jones Sustainability Indices (DJSI) component in the Emerging Markets index for the seventh consecutive year and as a member of the newly launched "Taiwan Sustainability Index" (TWSI) component. CTCI consecutively won the "Excellence in Corporate Social Responsibility Award" by CommonWealth Magazine, "The Most Prestigious Sustainability Awards--Top Ten Domestic Corporates" in the Taiwan Corporate Sustainability Awards (TCSA), and the SGS "ISO Plus Award for Social Responsibility and Sustainable Business Performance" while continuously building sustainable development as part of CTCI's DNA.

Moreover, in order to gain more exposure in the international media, we aggressively participated in the "Branding Taiwan Development Plan" launched by the Industrial Development Bureau, Ministry of Economic Affairs, where we established our media public relations strategy, set up a media database, and continued to submit professional technical articles to journals and magazines in 2021. We also placed advertisements to boost brand image, and took part in media marketing activities, such as international exhibitions and forums, so that we can further strengthen CTCI's international profile and brand awareness. Compared to 2020, our exposure rate in foreign media in 2021 increased by 400%.

Blueprint for Brand Development Strategies

CTCI

Vision

The Most Reliable Global Engineering Services Provider

MO
RELI

Plans

- ① Brand management
- ② Brand marketing communication (Image/Reliable)
- ③ Service/product marketing communication

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Launched a Project on Business Reputation Management to Build a Stronghold for Sustainable Management

- ① To establish Unique Selling Points and differentiate ourselves from competitors
- ② To improve our international identification and brand awareness
- ③ To enhance our brand image and value of being the "Most Reliable"

Objectives

ST
ABLE

- ① To plan global brand marketing events based on business strategies
- ② To establish relationships with the media and improve global media exposure
- ③ To strengthen management to ensure consistency of brand identification and communication

Strategies

With the media environment gets increasing complicated, it becomes a must for international enterprises to proactively maintain their business reputation to cope in a world of rapid change. CTCI launched a project on business reputation management in 2021, which dedicated to strengthening management of CTCI web portal and self-media, and building a positive, two-way communication with the media that could runs for a long term. Meanwhile, we started to expand marketing channels in an active manner. By issuing press release on new contracts signed, projects being executed, and arrange for news stories or interviews on the topics of branding, top managers, industry trend, ESG, etc., we expect to build a professional brand image and maximize our brand influence by effectively combining internal and external media resources.

Internalizing the Brand Spirit into Our DNA

CTCI understands that in order to become a successful global and famous brand, merely slogan or external changes will not help; on the contrary, we require the efforts and commitments of every member of the Group. "The Most Reliable" brand spirit and the corporate culture of "Professionalism, Integrity, Teamwork, Innovation" must be internalized into CTCI's DNA. CTCI HR department continues to carry out corporate culture internalization events, taking advantage of such events for recruitment, training, and performance evaluation purposes. In terms of talent recruitment, our selection criteria are now based upon the company's culture and department requirements, where candidates are asked to undergo occupational aptitude testing. Structured interviews are carried out to make sure that the candidates' personalities and personal values match our brand values. Moreover, we arrange new employees to take or join professional courses and experience activities related to brand values during orientation. And finally, we incorporate brand values into performance appraisals, in which 20% of the score is dedicated to corporate culture. We hope that these measures will help us muster solidarity among all colleagues within our Group and embed our "Professionalism, Integrity, Teamwork, Innovation" corporate culture into colleagues' daily behaviors, so that all stakeholders-- such as customers, investors, and the like-- will be willing to continue to place their trust in CTCI for delivering their projects domestically and abroad.

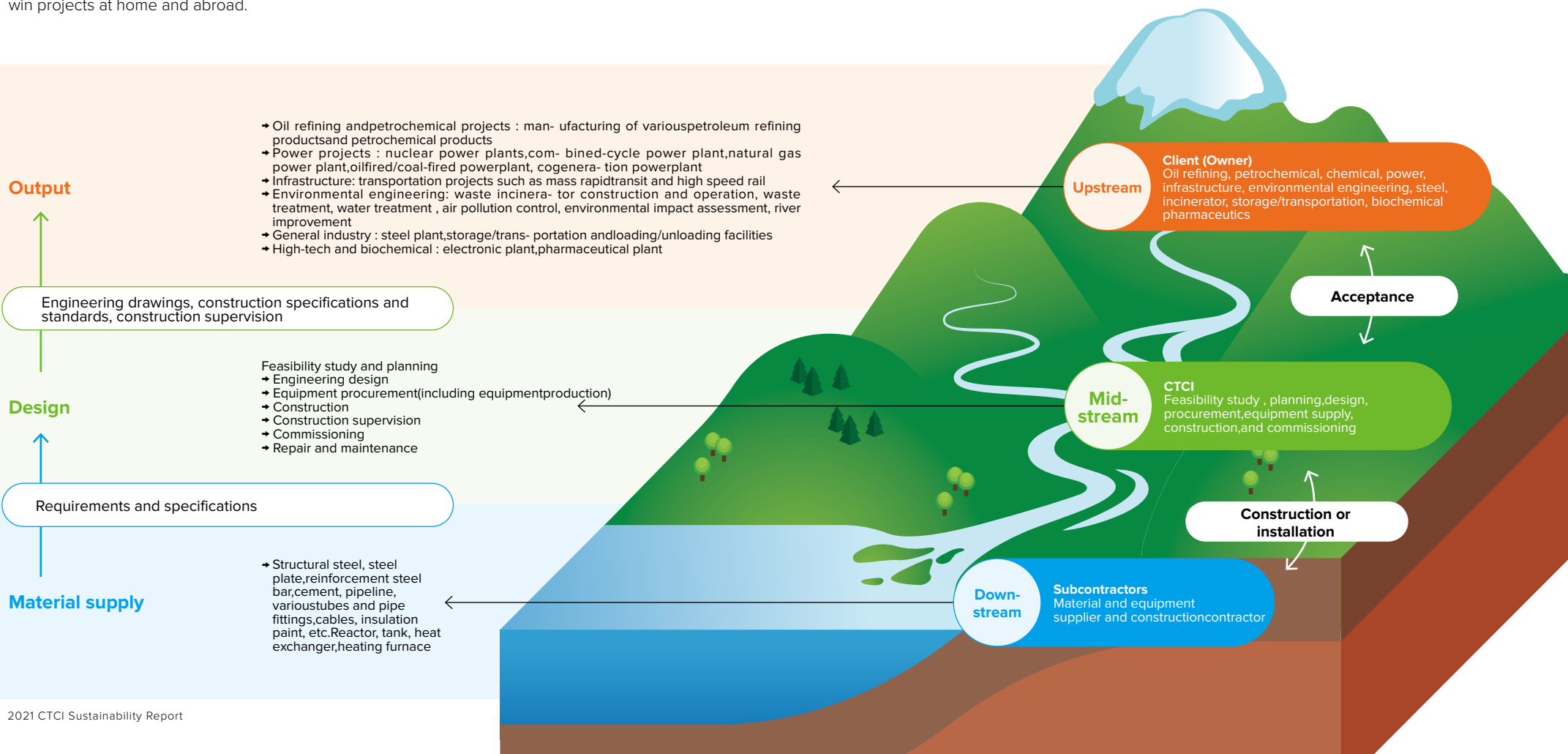
Through the communication of the CTCI brand slogan "Discover Reliable," we have shaped the "Most Reliable" brand positioning and image, and endeavor to enhance the competitiveness of the company and expand its global business. The fact that we have achieved many amazing feats in engineering both at home and abroad shows the affirmation and trust of international business owners in CTCI. Looking forward, to cope with fiercely competitive international market, we look forward to polishing our brand under joint efforts with our global partners, aim to achieve the goal of comprehensive marketing and global marketing, so that the company can continue to grow sustainably.

Discover Reliable

Sustainable Supply Chain Management

CTCI Industry Chain

CTCI's customer base covers industries such as oil refining, petrochemical, chemical, natural gas, electric power, transportation, steel, and environmental engineering. We provide professional and consistent turnkey engineering services. Our professional engineers turn our customers' facility construction demands into engineering blueprints (including design and construction drawings), and further incorporate partner firms to complete the construction project according to the construction drawing. In the process of service, all the materials and equipment that we supply, as well as the construction standards and specifications that we follow, need to show sufficient professionalism to ensure the requirements of the customer are met and that the projects are finished on time. As an EPC turnkey company, CTCI is located in the midstream of the overall engineering industry chain. It combines the needs of customers in the upstream of the industrial chain with CTCI's professional services, including feasibility analysis, planning, design, procurement services, equipment supply, construction, and commissioning. These services, when combined with the collaborating manufacturers of the downstream industrial chain such as materials, equipment suppliers and construction manufacturers, form a complete industrial value chain that work together to win projects at home and abroad.



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Sustainable Supplier Management

As of the end of 2021, CTCI, a global turnkey engineering company, has worked with more than 10,000 suppliers all over the world. In order to effectively manage so many suppliers from around the world and control such a large and complex supply chain, we categorize and classify our suppliers, so that we can effectively understand the overall supply chain status.

As most of CTCI's businesses involve turn key engineering, each supplier's products are unique and highly differentiated. We see diverse construction sites and diverse natures of the engineering projects. It is our policy to locally source materials as best as possible, so every time when we have a new project in a new location, we need to develop new local suppliers. Under our older definitions of Level 1 suppliers, nearly half of all suppliers have low transaction amount. Therefore, in 2018, we redefined Level 1 suppliers as suppliers whose cumulative transactions are within the top 95%.

Currently, CTCI's supply chain can be divided into six major procurement categories: equipment, electrical engineering, pipelines, instrument and control, others, and service subcontractors. There are a total of 167 Level 1 suppliers in 2021. Furthermore, based on standardized operating procedures, we label the Level 1 suppliers who had a minimum transaction amount of US\$3 million as critical suppliers. Refer to the following table for the number of Level 1 suppliers and the number of critical suppliers for each category. On average, our procurement amount from Level 1 critical suppliers account for at least nearly 70% slightly higher than that of last year, because of bigger transaction quantity with Level 1 critical suppliers in 2021.

■ CTCI Group's Supplier Statistics by Region and by Year (including domestic and overseas subsidiaries)

Number of suppliers	2019	2020	2021
Asia	10,359	10,466	10,489
Europe	771	775	776
Americas	522	523	525
Oceania	45	45	45
Africa	11	11	11
Total	11,708	11,820	11,846

■ Number of Level 1 Suppliers and Critical Suppliers and Their Procurement Ratios

Procurement category	2019	2020	2021
Equipment	Total number of Level 1 suppliers	65	84
	Number of Level 1 critical suppliers	17	10
	Proportion of critical suppliers	26.15%	11.90%
	Proportion of procurement amount with critical suppliers	69.87%	54.16%
Instrument and control	Total number of Level 1 suppliers	16	32
	Number of Level 1 critical suppliers	1	4
	Proportion of critical suppliers	6.25%	12.50%
	Proportion of procurement amount with critical suppliers	19.90%	34.68%
Electrical engineering	Total number of Level 1 suppliers	22	33
	Number of Level 1 critical suppliers	2	4
	Proportion of critical suppliers	9.09%	12.12%
	Proportion of procurement amount with critical suppliers	23.14%	44.51%
Pipelines	Total number of Level 1 suppliers	32	38
	Number of Level 1 critical suppliers	4	4
	Proportion of critical suppliers	12.50%	10.53%
	Proportion of procurement amount with critical suppliers	74.43%	50.86%
Others	Total number of Level 1 suppliers	14	18
	Number of Level 1 critical suppliers	7	3
	Proportion of critical suppliers	50.00%	16.67%
	Proportion of procurement amount with critical suppliers	90.68%	52.30%
Subcontractors	Total number of Level 1 suppliers	44	75
	Number of Level 1 critical suppliers	9	20
	Proportion of critical suppliers	20.45%	26.67%
	Proportion of procurement amount with critical suppliers	81.17%	74.18%
Total	Total number of Level 1 suppliers	193	280
	Number of Level 1 critical suppliers	40	45
	Proportion of Level 1 critical suppliers	20.73%	16.07%
	Proportion of procurement amount with Level 1 Suppliers	95%	95%
	Proportion of procurement amount with Level 1 critical suppliers	73.74%	60.07%
			73.55%

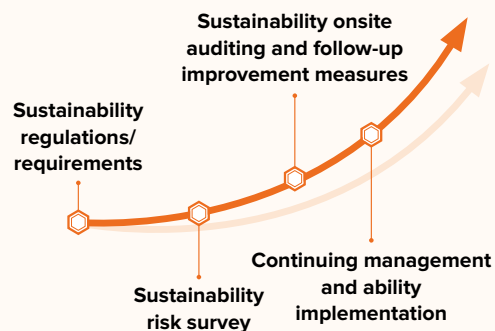
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CTCI Sustainable Supply Chain Management Framework

CTCI sincerely hopes to improve the sustainability and resilience of the supply chain as well as reduce supply chain related risks. For this reason, we set up a four step supply chain management framework that serves as a sound tool to help us continue to self monitor and lead our suppliers to advance forward in a sustainable direction. This mechanism helps improve our suppliers' sustainability performances, and in turn helps us build a responsible and resilient supply chain.

■ CTCI Sustainable Supply Chain Management

Enhance the resilience of the supply chain and join hands with suppliers toward a sustainable future



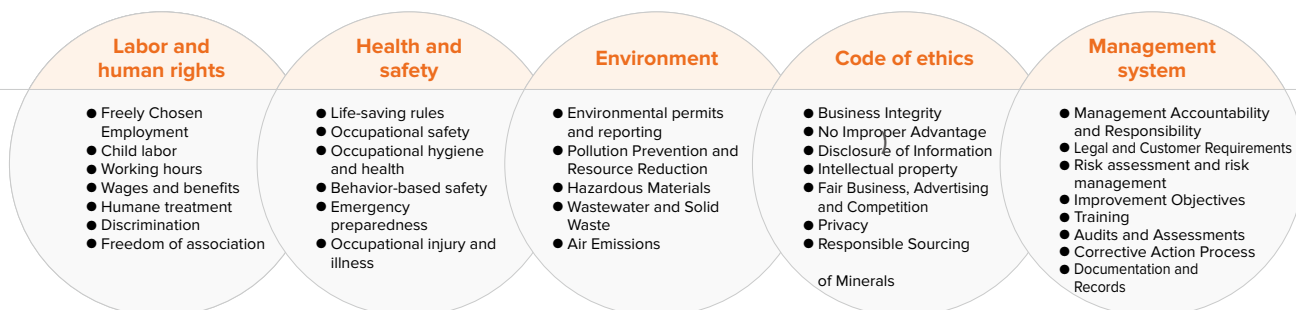
CTCI Vendor Code of Conduct

<http://www.ctci.com/www/ctci2016/upload/page/PG1222-F11.pdf>



Supply Chain Code of Conduct

CTCI has always been committed to sustainable business development, and we expect suppliers to share these values. Therefore, we have established the CTCI Vendor Code of Conduct with reference to various international initiatives and regulations, such as UN Global Compact, Universal Declaration of Human Rights, and the UN Framework and Guiding Principles of Business and Human Rights, as well as their requirements on human rights, employee standards, environment, and anti-corruption. We not only require all vendors (including new suppliers) to follow the aforementioned Code, but also encourage our suppliers to ask their own suppliers to follow the same standards. We look forward to enhancing the sustainability of the overall industry chain through these successive influences.



CTCI Vendor Code of Conduct applies to all suppliers and their subsidiaries, our affiliates, and our contractors that offer engineering products or services to CTCI. No supplier that has transactions with CTCI may be exempt from following such Code. Furthermore, as an effort to continue to enhance the sustainability of the supply chain, our policy demands all vendors who wish to become our new partners to sign a Statement of Commitment to Corporate Sustainability. From 2016 to 2021, 4,825 suppliers signed the statement, including all critical suppliers. Of all the suppliers that we have conducted businesses with in 2021, 418 suppliers have signed the statement, a signing rate of 88.2%. Please refer to the following table for the statistics of suppliers that have signed the statement in the past 3 years:

		2019	2020	2021
New suppliers	Number of suppliers that have signed the statement	490	344	328
	Signing percentage	100%	100%	100%
Level 1 suppliers	Number of suppliers that have signed the statement	164	225	141
	Signing percentage	85.0%	80.4%	84.4%
Level 1 critical suppliers	Number of suppliers that have signed the statement	40	45	39
	Signing percentage	100%	100%	100%
Suppliers who have done businesses with CTCI during the given year**	Number of suppliers that have signed the statement	695	242	418
	Signing percentage	83.5%*	85.5%*	88.2%*

Notes

* The reasons as to why some suppliers have not signed the statement is that the project is a joint venture (JV) by CTCI and other EPC counterpart(s), and the vendors are "project-based" who are mainly managed by the JV. Should such vendors work exclusively with CTCI in the future, they will be included into our supply management.

** Represents manufacturers that did transactions in 2021 and have been registered since 2016*

In addition to these two standards on supplier-sustainability management, internally, CTCI has developed the Protocol of Suppliers' Sustainable Management. Through this protocol, we pursue a systematic supplier-management procedure to further strengthen consistency and performance of suppliers' sustainable management.

Supplier Sustainability Assessment

Besides requesting suppliers to follow the code of conduct, CTCI also wishes to bring positive influence over suppliers through actual procurement procedures. Take the critical equipment suppliers for example, we would pay visit to vendors to evaluate their performances. We would use an equipment/subcontractor qualification assessment standard documentation chart for reviewing the critical suppliers' qualifications in terms of their equipment and machinery. We do not just look at quality and HSE requirements, pricing, delivery timeliness, country of origin, production site, and port of origin, but also consider other sustainability factors when evaluating the qualification of suppliers, including the vendors' integrity and management status, as well as whether they have been promoting HSE Management System internally. These sustainability factors account for 10% of the total assessment score.

CTCI is very committed to business integrity. Whenever we find evidence or records showing a supplier has engaged in bribery, non-paying bids, bid-rigging, or threats, we will terminate the procurement rights of vendors and will no longer carry out transactions with such vendors. Prior to each tender decision, CTCI will again conduct one final discussion internally on the vendors whose bidding prices are close and pick the one whose performance in sustainability issues outperforms its counterpart.

In addition, to build a sustainable supply chain, we continue to communicate sustainable practices in the supply chain through Supplier Meeting. During the meeting, we would educate vendors on sustainability concepts and assign basic sustainability criteria for our suppliers as a way to gradually help them increase awareness on sustainability issues. In 2022, we will also contribute to low carbon supply chain based on the environment and information of suppliers, set scope 3 targets to reduce supply chain greenhouse gas emissions as CTCI joined SBTi, offer guidance and assistance to small enterprises in support of the government's policy of "the Large Enterprises Lead the SMEs." By doing so, we hope to play the role of industry leader in motivating proprietors and the supply chain to respond to climate action.

Sustainability Risk Investigation and Assessment

To actively control the sustainability risk of our suppliers, CTCI would aggressively review suppliers' risks when they initially registered as suppliers. Review measures include reviewing their business permits, evidence of tax payment, company profile, engineering performance and outcomes, quality, and HSE (health, safety, and environment) certification. We would prioritize our supplier visits based on geographical location and procurement type, and place emphasis on specific areas (such as China or India), where we would conduct an initial active risk assessment. This would help us better understand the distribution of potential risks. We would then ask suppliers to self evaluate through our questionnaire surveys, so that we have a preliminary idea of where our suppliers' sustainability risks lie. For suppliers that have been determined as high risk, we would conduct further on site audits, communicate with our suppliers, and understand deeper about the risks. Finally, we would propose our recommendations to help them improve performances.

■ The Process of Sustainability Risk Investigation



■ Supplier Sustainability Risk Assessment

		2019	2020	2021
Level 1 suppliers	Number of suppliers surveyed	193	280	167
	Response rate	81.9%	82.2%	86.8%
Level 1 critical suppliers*	Number of suppliers surveyed	40	45	39
	Response rate	97.5%	100%	100%
Level 2 critical suppliers**	Number of suppliers surveyed	392	222	365
	Response rate	22	23	20

Notes

* Level1 critical suppliers are part of the scope of level 1 suppliers.

** Since 2018, we have requested our Level 1 critical suppliers to help us investigate Level 2 suppliers in order to increase the response rate.

In addition to the quality, timeliness of delivery, design, and manufacturing capacity, which were originally listed as our supply chain sustainability risk assessment criteria, since 2014 we have added additional supplier ESG assessment criteria that touch on environmental management, employees' working conditions, human rights, and societal impacts. Together they serve as crucial basis of CTCI's procurement strategy. In total, we distributed corporate sustainable management assessment forms to 167 vendors in 2021, and received 145 responses. A response rate target for the 2022 Sustainability Risk Questionnaire was set to continuously control the vendor's sustainability risks. The target for level 1 suppliers was increased to 88%, and that for level 1 critical suppliers was maintained at 100%.

To have a deeper understanding on the overall supply chain situation and reduce overall risks, CTCI carried out research on Level 2 critical suppliers from 2016 to 2017, which allowed us to have a basic understanding on how many Level 2 suppliers there actually are. From 2018, we then launched a sustainable risk investigation on Level 2 critical suppliers. Given that we do not have direct business relations with our Level 1 suppliers' subcontractors, therefore, in 2022, we redefined Level 2 critical suppliers as suppliers whose were provided by Level 1 suppliers via corporate sustainable management assessment forms and were managed by Level 1 suppliers directly. CTCI will evaluate performances of Level 2 critical suppliers when there are quality issues only. CTCI requests suppliers to strictly follow the approved vendor list of client, also inspection will be performed per inspection and test plan. The sub-supplier management is the one of items for CTCI audit. This helps us better understand the sustainability risks of Level 2 suppliers and allows us to have a more fully sustainable supply chain as well as control the risks.

Survey Results

To ensure sustainable supply chain management, CTCI uses sustainability risk assessment results to identify potential risks in the supply chain related to economic, environmental, and societal aspects, as well as high-risk suppliers. In addition to using surveys as a means of risk evaluation, we also developed an auditing procedure for sustainability risks, and we use it to audit and counsel potentially high-risk suppliers to ensure that their risks can be effectively controlled and lowered.

CTCI's 2021 supply-chain risk investigation outcomes show that there are 7 suppliers with high-economic risk, whose primary risks are lack of risk-control bodies and contingency plans to ensure continuous operation. The major environmental risks include lack of statistical data on safety performance and lack of evaluation over environmental performance management of their Level 1 suppliers. and there are 10 suppliers with high environmental risk (while 22 suppliers are without ISO 14001 or ISO 45001 certification). In terms of social dimension, 32 suppliers have been identified with high social risk, with the main risks coming from high ratios of contractual workers, forced labor, and employees lacking freedom of association.

High-Risk Items	Numbers of high-risk suppliers	Mitigation measures
Dimension : Economic		
The company does not have risk-control units and no contingency plans to ensure continuous operation.	7	Through factory visits, audits and conference promotions, we help vendors understand the importance of related risk items and offer suggestions for improvement; for example, setting up a part- or full-time risk-management unit.
Dimension : Environmental		
Lacks statistical data for safety performance and lack of evaluation over environmental-performance management of their suppliers	10	Through on-site audits and conference promotion, we help suppliers understand the importance of related risk items and offer suggestions for improvement; for example, providing data on safety performance.
Dimension : Social		
High ratio of contractual workers, forced labor, and lack of employees' freedom of association.	32	We help suppliers understand the importance of related risk items and offer suggestions for improvement through on-site audits and conference promotion, such as reduction in the ratio of contractual employees and increase in the freedom of association of employees.

If a supplier has one of the three potential risk factors-- either economic, environmental, or social-- and does not have ISO 14001 and ISO 45001 certification, then such supplier will be seen as a supplier with higher risk in sustainability. Following these criteria, we came to identify a total of 11 suppliers that are considered as having higher risks, among which 4 are Level 1 suppliers.

Supplier Sustainability Risk Assessment Result

		2019	2020	2021
Level 1 suppliers	Numbers of high-risk suppliers	19	13	11
	High risk ratio	9.8%	4.6%	6.6%
Level 1 critical suppliers	Numbers of high-risk suppliers	1	5	4
	High risk ratio	2.5%	11.1%	10.3%
Level 2 critical suppliers	Numbers of high-risk suppliers	1	0	0
	High risk ratio	4.5%	0.0%	0.0%

Supplier Visits and Audits

To control and manage sustainability risks of our suppliers, we have drawn up the supplier sustainability auditing procedures and have conducted auditing training for sustainability auditors. Suppliers are requested to fill out self-assessment forms. For suppliers with higher risks in previous year's survey results, we carry out audits the following year. The way of audit not only on-site audits but also utilize virtual reality headsets, video, assign third parties...etc. which are all qualified ways for CTCI. Audits are carried out on management system, ethical standards, environment, labor and human rights, and health and safety. We comprehensively review suppliers' risks with sustainable standards and help suppliers understand why these higher-risk items matter to them. We would further offer improvement recommendations. For instance, in the case of incompliance related to employees and human rights, we would ask the supplier to propose substantial measures to reduce their risks in human rights violations. Then we would continue to follow up on their improvement progress until the problem has been 100% rectified. Due to COVID-19 pandemic, only 9 suppliers in Taiwan underwent sampling audit in 2021, four of whom were identified as suppliers with higher risk in 2020 and five were non-high-risk vendors. The major and minor defects and observations that were found during audits have all been rectified in time, thus achieving an improvement rate of 100%.

Five Aspects of Auditing

	Health and Safety	Labor and Human Rights	Management System	Environment	Ethical standards
	Major incompliance		Minor incompliance		Observations
Operation and governance	-	-	-	-	-
Supply chain management	-	-	-	-	-
Environmental protection	-	-	1	5	
Labor health and occupational safety	1	2	3		
Labor rights and human rights management	-	-	1		
Total	1	3	9		

Enhance Supplier Sustainability Awareness

CTCI's supplier meeting was expanded in scale and stipulated to be held every two years in 2019. The COVID-19 pandemic forced CTCI held an online Supplier Meet in 2021 for both domestic and foreign manufacturers. This not only continues to improve the suppliers' sustainability awareness, but also minimizes risks and reduces carbon emissions caused by traffic. A total of 170 guests belonging to 106 vendors (69 in Taiwan, 37 from abroad) from 13 countries joined the event in 2021. Supplier rankings were based on the evaluation scores of each type of work. In the end, 12 outstanding suppliers from pipeline, equipment, track works, electrical engineering, and labor services received awards and were highly commended for their performance. CTCI created a set of evaluation methods to pick out vendors with outstanding sustainability performances, by types and by scale. We will communicate such evaluation methods at the Supplier Meeting. If the vendors fully cooperate with the improvement scheme, we will give them Vendor Award for Sustainability Excellence. We wish to increase sustainability benefits through supplier meetings and work towards a brighter and more sustainable future together with suppliers.

■ Overview of Supplier Meeting over the Years

2018

- A Supplier Meeting was held with 24 vendors and 43 participants.
- Awarded trophies for 10 excellent vendors

2019

- A Supplier Meeting was held with 70 vendors and 113 participants.
- Awarded trophies for 8 excellent vendors.

2021

- An online Supplier Meet has been organized as part of the pandemic- prevention measures.
- Awarded trophies to 12 excellent vendors
- CTCI is proposing evaluation methods in the future to honor excellent vendors in appreciation of their contribution with Sustainability Excellence Vendor Awards

Sustainable Supply Chain Development Strategy

CTCI has always attached great importance to cooperation and growth with suppliers, and aims for common growth through mutual partnership and mutual support. In order to meet our proprietors' needs and quality, HSE, price and schedule delivery objectives, we have established a sustainable development strategy for the supply chain, which includes zero tolerance for damages to integrity issues, full focus on employee rights, safety first and local procurement, among others. For this purpose, we invite our suppliers to become part of our sustainable development strategies. Through CTCI Supplier and Subcontractors Zone, we are able to properly manage the data of our vendors, and in addition, we set up a Whistleblowing Platform to build up a complete communication initiative between CTCI and the suppliers.

Business integrity

- CTCI complies with relevant laws and regulations, and terminates procurement businesses with suppliers that are on sanction lists as announced on a quarterly basis on the e purchasing website of the Public Construction Committee, the Executive Yuan.
- To ensure integrity, honesty and sustainable operation, CTCI has commissioned Deloitte Taiwan, a neutral third party, to establish and manage the "Whistleblower Website". We tell all vendors during the quotation process that if the vendor finds any unfair or unjust practice, failure to act appropriately, or circumstances where laws, regulations and professional principals are violated, they can report to us through the Whistleblower Website.
- No supplier's report was received in 2021. If vendors report cases, CTCI will handle them in an open and transparent manner to be fair and balanced to protect the interests of all stakeholders.
- Whistleblower Platform Website:
<https://secure.conductwatch.com/ctci/?Pg=1&Lang=en-US>

Whistleblower Platform Website

<https://secure.conductwatch.com/ctci/?Pg=1&Lang=en-US>



Full Protection of Employee Rights

- CTCI is highly attentive to the employee rights of our suppliers, and stipulates subcontractors to provide labor and health insurance coverage to all employees before construction work can commence. In addition, CTCI also offers public liability insurance for all construction projects to protect the rights and benefits of both CTCI's and suppliers' employees.

Safety First

- CTCI is committed to the health, safety, and environment (HSE) of the construction site. Besides requiring all vendors and contractors to abide by all HSE regulations upon entering the site, we also communicate CTCI's HSE policy to all suppliers and partners to ensure their awareness and to carry out HSE practices. We strive to build a safe and healthy work environment with everyone, and all contractors will convene a pre work safety advocacy meeting before carrying out construction tasks on a daily basis.

Localized Procurement

- CTCI always draws up a procurement plan when it comes to material or service purchases, and the plan is split into local and global vendor categories. Procurement from local vendors is always prioritized whenever possible to reduce energy consumption and carbon footprint, such as from transportation. Local procurement from Taiwan accounted for 89.01% in 2021, and 99.83 % from United States, helping to reduce the carbon footprint from transportation and boosting local employment.

Case 1 : Anti-corruption

Benefits

- Eliminating corruption and bribe related behaviors

Performance

We conduct "Integrity Moment" in meetings with vendors, advocating that we shall not promise, provide, approve, grant or accept any bribe or unfair income in any form. Meanwhile, vendors shall sign CTCI Vendor Code of Conduct and the statement of commitment to corporate sustainability, promising to adhere to the principle of integrity management and the law. Relevant clauses shall apply to bid stipulations, contracts, general terms and conditions (GTC) of CTCI purchase orders, CTCI reserves the right to terminate the contract in the event of vendor bribe.

Case 2 : Human Rights of Vendors' Employees

Benefits

- Committed to the Rights and Interests of Vendors' Employees.

Performance

Before construction can begin, subcontractors in Taiwan are required to file for labor insurance for their employees. The same applies to foreign operations, where they need to comply with local laws and regulations before construction can begin. This is to ensure the basic employment rights of all subcontractors' employees.

Case 3 : A Safe Workplace Environment

Benefits

- Focused on the Safety of Vendors' Workplace Environment to Reduce Accidents/Disasters Risks.

Performance

During sustainability-auditing process, we double-check whether the operating personnel working with highly dangerous mechanical equipment have their valid operation certificates, and if they need a retraining for occupational safety.

Case 4 : Local Procurement

Benefits

- Reducing transportation process and carbon footprints
- Creating more local job opportunities

Performance

Ratio of local procurement in 2021 was 89.01% in Taiwan, 99.83% in United States, and 96.20% in India.



Supplier Evaluation

To ensure that CTCI's suppliers and contractors provide materials, engineering designs, construction, and manufacturing works that meet our clients' demands in terms of quality, HSE, pricing, and delivery schedule, our project procurement managers evaluate machinery and equipment suppliers/contractors based on the "Evaluation of Suppliers and Subcontractors Procedure" as soon as an engineering project begins. In response to adjustments in the evaluation procedures, online evaluations have begun since 2021. A total of 547 completed projects have been evaluated, among which suppliers (orders) account for 465, and subcontractors (contracts) account for 82.

These meticulous evaluation tasks indicate CTCI's integrity and unbiased treatment towards all vendors, displaying our goal to create seamless partnerships and synergistic growth together with our vendors. Vendors who score well on the evaluation will receive letters of recognition. Only those firms who have scored at least 8 points in HSE and total evaluation score will they receive a chance to become a candidate for the recognition. Alternatively, vendors who do not pass the evaluation will be reported to receive relevant punitive actions. When a vendor wishes to appeal, it must go through our internal review and have its case submitted to managers of relevant business departments.

Score	2019		2020		2021	
	Orders	Contracts	Orders	Contracts	Orders	Contracts
8.0 ~ 10	166	51	55	12	351	23
6.0 ~ 7.99	200	138	61	69	91	54
< 6.0	19	12	10	8	23	5
Statistics by categories	385	201	126	89	465	82
Total amount	586		215		547	

Local Procurement

In all of our engineering projects, local procurement is always top priority, for it can allow us help the economic development of each area where our operations are located, and can also help reduce carbon emissions from the transportation of materials. However, since engineering projects are carried out at different areas in each year, and procurement occurs at different stages throughout the project, the procurement and contracting ratio is also prone to changes. Major engineering procurement projects were mostly focused on Taiwan, United States and India in 2021, accounting for 74.36%, 11.14%, and 9.71% of CTCI's global procurement, respectively. CTCI's local procurement ratio in Taiwan was 89.01% in 2021. Among CTCI's top three purchasing countries, United States' local procurement ratio was 99.83%.

■ CTCI's Percentage of Local Procurement at Key Project Locations, from 2019 to 2021

Key locations	2019	2020	2021
Taiwan	77.60%	76.05%	89.01%
United States	NA	NA	99.83%
Malaysia	73.88%	74.44%	74.94%
Qatar	44.01%	58.09%	51.65%
Singapore	31.83%	62.85%	89.11%
Thailand	20.98%	37.02%	45.90%
Oman	72.02%	50.31%	NA
India	NA	88.34%	96.20%
Vietnam	NA	41.14%	69.14%

Notes: N/A indicates no relevant record available for the given year

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■ Supply Chain Management Key Performance Indicators (KPI)

2019 Objectives	Completion Rate	2020 Objectives	Completion Rate	2021 Objectives	Level of completion	Completion Rate	2022 Objectives
Get 100% of Level 1 suppliers and 80% of existing suppliers sign the Supplier Corporate Sustainability Statement	Partially achieved	Get 85% of existing suppliers to sign the Supplier Corporate Sustainability Statement	100%	Get 88% of existing suppliers to sign the Supplier Corporate Sustainability Statement	328 new suppliers and 39 critical suppliers have enrolled in 2021, with a signing rate of 88.2%	100%	Get 90% of existing suppliers to sign the Supplier Corporate Sustainability Statement
Complete supply chain sustainability survey covering 80% of Level 1 suppliers	100%	Complete supply chain sustainability survey covering 82% of Level 1 suppliers	100%	Complete supply chain sustainability survey covering 85% of Level 1 suppliers	86.8% of survey questionnaire response rate	100%	Complete supply chain sustainability survey covering 88% of Level 1 suppliers
Replace paperwork with online evaluation system, and complete at least 80% of evaluation tasks that should be completed in 2019	100%	Complete 85% of evaluation tasks that should be completed in 2020 with online evaluation system	100%	Complete 90% of evaluation tasks that should be completed in 2021 with online evaluation system	547 online project evaluations were completed	100%	Complete 95% of evaluation tasks that should be completed in 2021 with online evaluation system
<ul style="list-style-type: none"> Carry out ESG auditing on high-risk vendors: 100% achievement rate Select 5 additional vendors to conduct ESG audit 	100%	<ul style="list-style-type: none"> Achievement rate of auditing on vendors with high ESG risks: 100% Incompliance improvement rate from vendor ESG audit: 60% 	100%	<ul style="list-style-type: none"> Achievement rate of auditing on vendors with high ESG risks: 100% Incompliance improvement rate from vendor ESG audit: 70% 	<ul style="list-style-type: none"> Due to the impact of the COVID-19 pandemic, 4 Taiwanese companies with high ESG risks were audited, and their defect-improvement progress is being monitored. Randomly select 5 transacting vendors to audit and monitor their defect-improvement progress Success rate in auditing on vendors with high ESG risks: 100% 	Partially achieved	<ul style="list-style-type: none"> Achievement rate of auditing on vendors with high ESG risks: 100% Incompliance improvement rate from vendor ESG audit: 75%
<ul style="list-style-type: none"> Complete ESG Excellent Vendor evaluation methods Organize Supplier Meeting once every 2 years 	<ul style="list-style-type: none"> In progress 100% 	<ul style="list-style-type: none"> Complete ESG excellence vendor-evaluation processes Organize Supplier Meeting once every 2 years 	<ul style="list-style-type: none"> In progress 100% 	<ul style="list-style-type: none"> Complete ESG Excellent Vendor evaluation methods 2021 Online Supplier Meeting has been held 	<ul style="list-style-type: none"> Excellent CSR Candidates will be selected based on the sustainability risk-survey outcomes, and the winners will be announced after on-site inspection An online supplier meeting was held on 2021 as part of the pandemic-prevention measure 	<ul style="list-style-type: none"> 100% 100% 	<ul style="list-style-type: none"> A Supplier Meeting is planned for 2023

Supplier Integrity Management Mechanism

CTCI has long upheld integrity management and always implemented the policy in supply chain management. We have set many codes and statements of commitment to regulate vendors' behaviors in integrity management and anti-corruption based on principles of fairness, just and openness. In addition, we would publicly announce and disclose integrity management in ESG reports, company websites, publications, meeting and external activities to help suppliers understand CTCI's concept and regulation in this regard. Any supplier who fails to sign the statement of commitment or meet the requirement shall not participate in bidding or receive our orders; In the event that any contracted supplier violates the regulation, CTCI will terminate the contact and end all business dealings.

Relevant regulations for suppliers Content	Content
Advocating Integrity Moment in vendor meetings	We shall not promise, provide, approve, grant or accept any bribe or unfair income in any form
CTCI Vendor Code of Conduct	Shall promise integrity management and fair income
the statement of commitment to corporate sustainability and net zero emissions	Vendors shall promise integrity management and adherence to the law
Report website and mechanism	Encourage vendors to supervise each other and report improper behaviors
Regulations on bidding/bid opening	In the event of vendor bribe, CTCI reserves the right to end the vendor's bidding etc.
Terms and Conditions of the contract	In the event of vendor bribe, CTCI reserves the right to terminate the contract etc.
General Terms and Conditions of CTCI purchase order (General Terms and Conditions, GTC)	In the event of vendor bribe, CTCI reserves the right to terminate the contract etc.



- 50 Application of Environmentally-Friendly Techniques
- 56 Strengthen Climate Resilience
- 63 Environmental and Resource Management



CTCI's Sustainable Role II

A Trailblazer of Green Innovation

Highlights

7.25 %

Cumulative percentage decline of the headquarters building's EUI for four consecutive years

840 million kWh of electricity

From 2019 to 2021, green engineering has saved a total of 840 million kWh of electricity, which is equivalent to approximately 2.47 days of Taiwan Power Company's total thermal power generation, or the annual electricity consumption of 208,787 households.

11.70 million metric tons

From 2019 to 2021, the cumulative CO₂e reduction thanks to green engineering is equivalent to 30,051 Taipei's Daan Forest Park's annual carbon absorption amount.

232.07 million metric tons

Thanks to green engineering, the amount of water saved from 2019 to 2021 is equivalent to 261 days of Taipei City's total water consumption.

24,933 metric tons

Cumulative emission reduction of volatile organic substances from 2019 to 2021 thanks to green engineering.

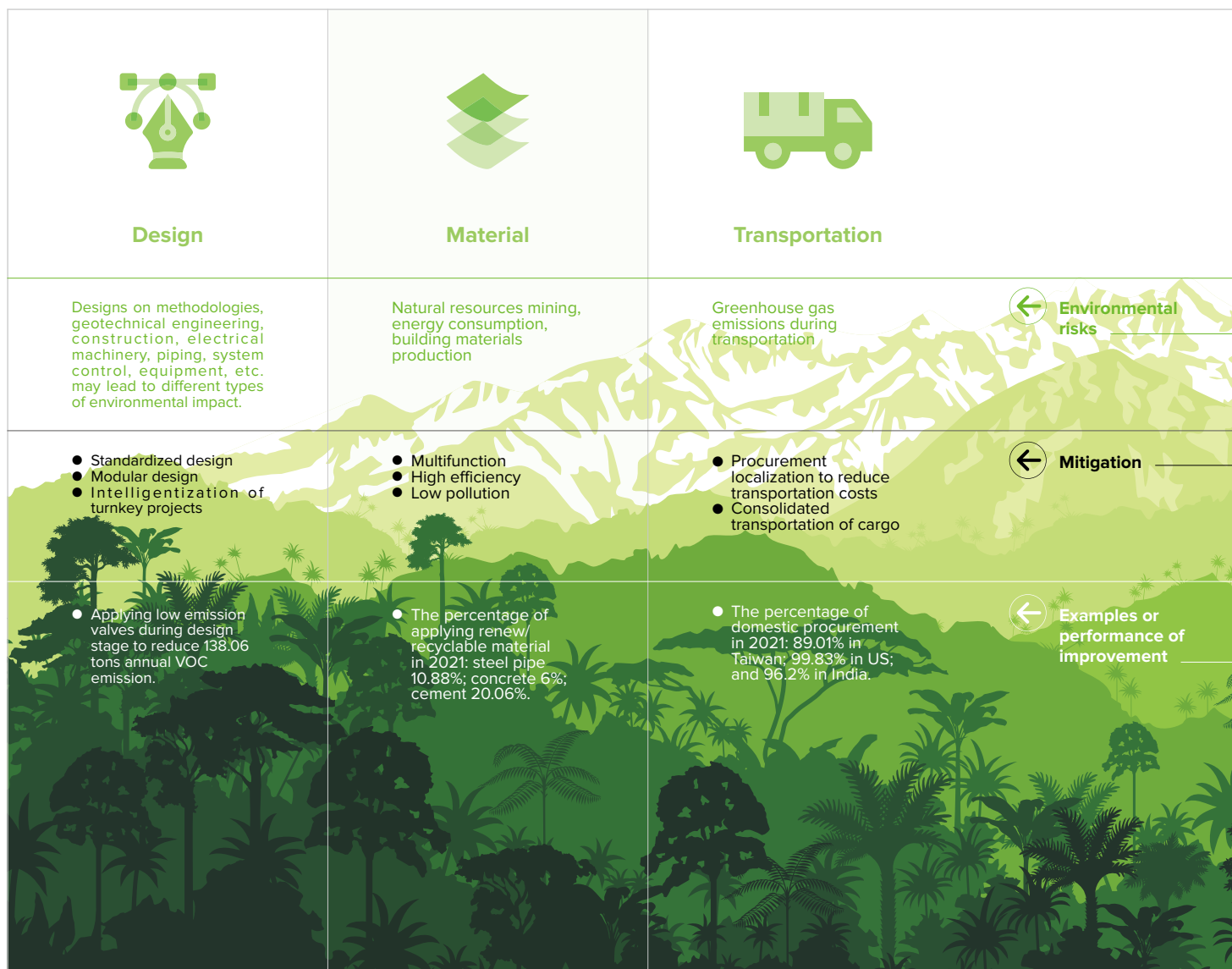
Application of Environmentally-Friendly Techniques

Green Techniques




CTCI works hand in hand with proprietors to adopt advanced environmental protection and energy-saving technologies for the manufacturing process and incorporates the green designs into the plant's central control center 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 including 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, CTCI seeks to create a better future for clients through the introduction and R&D of engineering technologies.

CTCI's leading techniques in the process, supply chains, construction, and plant commissioning enable the Company to play an important role in competing in the international Engineering-Procurement-Construction (EPC) turn-key transfer projects 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 technical services that meet environmental protection requirements. We also continue to strengthen our environmental protection capabilities and implement an environmental management system. We strive for economical and feasible environmental protection and energy-conservation solutions and grasp innovative opportunities when developing construction projects that utilize these techniques.

■ Using green techniques to cope with environmental risks at various stages



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 Construction		 Utilization	 Dismantling
Environmental risks → Greenhouse gas emissions, pollutants associated with air, water, waste and toxic, and treatment of pollutants		Greenhouse gas emissions, duration, maintenance	Classification, temporary storage, and follow-up disposal of waste
Mitigation → <ul style="list-style-type: none"> ● Develop automation to reduce on-site workload ● Improve wastewater recycling and reuse efficiency to minimize environmental impact 		<ul style="list-style-type: none"> ● Application of high-performance equipment ● Application of organic materials 	Resource recycling and reuse
Examples or performance of improvement → <ul style="list-style-type: none"> ● Annual reduction of the water consumption of construction sites: 11.5% 		<ul style="list-style-type: none"> ● Reduction of potential annual power consumption: 2,383.26 MW during the operation stage with adoption of high efficiency motors, transformers, lighting devices and VFDs (variable-frequency drives). 	<ul style="list-style-type: none"> ● In the actual implementation of the circular economy into practical application, the total power generation capacity of the waste incineration plants in Taiwan operated by our subsidiary ECOVE has reached approximately 1,241 GWh a year.

Over the past 40 years, CTCI has continuously adopted the best and most advanced techniques to minimize the emissions of environmental pollutants, reduce the use of energy and resources, and reduce environmental impact and cost. Currently, all of our engineering projects adopt the latest environmental protection processes as much as possible. One of the biggest technical challenges engineering companies face when it comes to sustainable management is to apply various green techniques in engineering and maintain research and development momentum. As a forerunner in green engineering, CTCI has integrated environmental protection into the company's sustainable operations. We have a long history of commitment to introducing, researching, and developing green techniques. This includes improving energy efficiency, saving water, protecting the ecosystem, and creating safe working environment. Given that many countries' authorities have been setting low-carbon economy targets, we have developed various types of highly efficient environmental protection facilities and energy management techniques, which have been proven effective in actual 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 techniques 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 gas emissions, and move towards sustainable management of natural resources.

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Green technique practices and results

Techniques	Measures	Applications or results
Energy-saving and water-saving for processes	<ul style="list-style-type: none"> Update process techniques or adopt optimal process designs Recycle waste heat generated during the process to produce steam for reuse 	<ul style="list-style-type: none"> Increase equipment efficiency and productivity Improve energy efficiency and save energy required for production
Energy-saving for the rotary machinery	<ul style="list-style-type: none"> Optimize rotary machinery systems to improve transmission efficiency 	<ul style="list-style-type: none"> High efficiency motor: the electricity efficiency can be increased by 5% to 15% Using inverters: Achieve better control over process systems, lower machinery maintenance cost, lower noise output, and increased adaptability to system changes
Energy-saving for electrical engineering	<ul style="list-style-type: none"> High-performance transformers: Use amorphous transformers to minimize loss of no-load iron cores. High-efficiency lighting: Utilize LED energy-saving lamps to improve energy efficiency. Renewable energy: Utilize solar energy, wind energy, among others, to transform natural energy into energy. 	<ul style="list-style-type: none"> 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: Minimizing environmental light pollution and reducing 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.
Option specifications of the Equipment / Material	<ul style="list-style-type: none"> Optimization design of the pressure vessel specification. The modification of the structure & material for the cooling tower. 	<ul style="list-style-type: none"> 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 CO₂ emission. A prime example is the LPIC EPC 1 project in Oman.
Air pollution prevention	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Decrease emissions of various air pollutants, including particulate matters (PM2.5) The concentration of exhaust gas (SO₂, NO_x and particles) can become lower than that from the traditional exhaust gas treatment methods Achieve the standard for best available control techniques Decrease annual NO_x emission by more than 246,000 metric tons
Wastewater treatment	<ul style="list-style-type: none"> Advanced dual-layer gas gathering up-flow anaerobic sludge blanket method Process techniques and membrane bioreactor (MBR) ② Electro Dialysis Reversal (EDR) technique in industrial wastewater recovery ③ 	<ul style="list-style-type: none"> Over 70% of the 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
Vibration control	<ul style="list-style-type: none"> Set up a vibration group based on task orientation, including experts in various fields such as process, equipment, piping, civil engineering, etc., to assist projects and customers to deal with various vibration phenomena. 	<ul style="list-style-type: none"> Ensure that equipment, pipelines, and structures conform to vibration
Equipment noise control	<ul style="list-style-type: none"> Use mufflers, sound-proof shields, and acoustic barriers. Equipment suppliers are required to conduct noise tests and provide test reports. Analyze the plant area using engineering software and visualize the noise distribution. Analyze the Pressure Safety Valve (PSV) noise with recommendations for noise abatement measures. 	<ul style="list-style-type: none"> The overall noise in the plant is within the permissible limit, which also minimizes the negative impact of the workplace environment on operators. Analyze the feasibility of replacing unnecessary implementation of the silencers by the single or dual hearing protection devices according to the PSV relieving scenarios to reduce CO₂ emissions by decreasing the steel amount, which has been applied in LNG and petrochemical projects in Thailand, India, and Malaysia.
Application of low-emission valves	<ul style="list-style-type: none"> Low-emission valves with a leakage specification of 100 ppm are used instead of the general valves above 1,000 ppm. 	<ul style="list-style-type: none"> Effectively lowering the fugitive emission of valve operations, minimizing the impact of VOCs ④ to the staff and the environment
Green construction ⑤	<ul style="list-style-type: none"> Green design, permeable pavement, and green vegetation cover design, and utilization of green building materials. 	<ul style="list-style-type: none"> Reclaimed water recycling project: The total amount of carbon sequestration in the 40-year life cycle reached 124,763 kg, 35,683 kg better than the greening reference value (89,080 kg).
Plant arrangement value engineering (VE) applications ⑥	<ul style="list-style-type: none"> Optimize the arrangement of equipment, structures, piping, and other objects and minimizing the distance between units. 	<ul style="list-style-type: none"> Effectively save the amount of steel structure and concrete used, reduce the consumption of energy resources and greenhouse gas emissions.
Life cycle cost analysis and applications	<ul style="list-style-type: none"> Introduce software for life-cycle cost analysis (EEA) ⑦ 	<ul style="list-style-type: none"> Enhance the scientific basis and sustainable concept of proposals
Project real-time information dashboard	<ul style="list-style-type: none"> Establish a shared information platform system 	<ul style="list-style-type: none"> Real-time and synchronous inspection of the execution status of project engineering, procurement, construction, and commissioning; and make project execution information more transparent and easier to manage.
Engineering equipment information integration and application	<ul style="list-style-type: none"> Formulate standardized equipment control operation process and powerful equipment control systems 	<ul style="list-style-type: none"> Appropriate equipment can be delivered to construction sites in time to meet the requirements of quality and scheduling needs of construction sites.

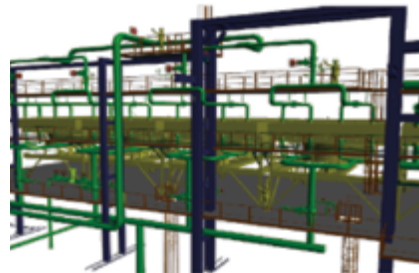


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Techniques	Measures	Applications or results
Building information and modeling techniques applications	<ul style="list-style-type: none"> Use Revit's 3D to construct models for civil engineering and construction projects and related building materials, as well as to develop interface programs. 	<ul style="list-style-type: none"> Improve the quality of engineering design, provide accurate drawings, labor, and materials, and extend the application to construction management, thereby minimizing waste of materials and effectively controlling the project schedule.
Automated piping arrangement and electrical pipeline design	<ul style="list-style-type: none"> Develop automated design systems for planning and design of system control wiring path 	<ul style="list-style-type: none"> Improve work efficiency, minimize human design errors, shorten processing time, improve the quality of prints, and saving labor costs.
3D laser scan applications	<ul style="list-style-type: none"> Construct point cloud in digital models to reconstruct physical objects or environments into accurate 3D models. 	<ul style="list-style-type: none"> Applied to plant expansion engineering in an oil refinery in Thailand and a petrochemical plant in Saudi Arabia.
Application of mobile devices in construction sites	<ul style="list-style-type: none"> Incorporate engineering management into mobile construction site operations 	<ul style="list-style-type: none"> 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.
Precast concrete technique	<ul style="list-style-type: none"> Reinforced concrete bars are cast first under stringently controlled environment in the factory 	<ul style="list-style-type: none"> 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.
Modular construction applications	<ul style="list-style-type: none"> Modular designs for construction details; dynamic simulation of the hoisting process of modular construction using CTCI's innovative 4D software. 	<ul style="list-style-type: none"> 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
Precast piping and installation applications	<ul style="list-style-type: none"> Formulate construction plans with piping section precast system, add barcode label function for obtaining information such as production, warehouse management, and installation data. 	<ul style="list-style-type: none"> 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 construction cost.
Technical application of wireless instruments	<ul style="list-style-type: none"> Replace traditional wired instruments with wireless instruments 	<ul style="list-style-type: none"> Lower plant construction cost Successfully incorporate wireless corrosion detection instruments in overseas RFCC plants ⑨

Notes

- ① SCR = Selective Catalytic Reduction
- ② MBR = Membrane Bioreactor
- ③ EDR = Electro Dialysis Reversal
- ④ VOCs = Volatile Organic Compounds
- ⑤ The data is calculated according to the "Green Building Design Technical Specification."
- ⑥ VE = Value Engineering
- ⑦ EEA = Carrier Engineering Economic Analysis
- ⑧ EVA = Ethylene Vinyl Acetate
- ⑨ RFCC = Residual Fluid Catalytic Cracker



Parametric 3D automatic piping



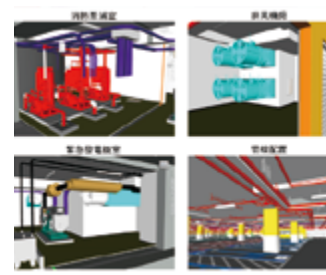
Modular applications to constructions



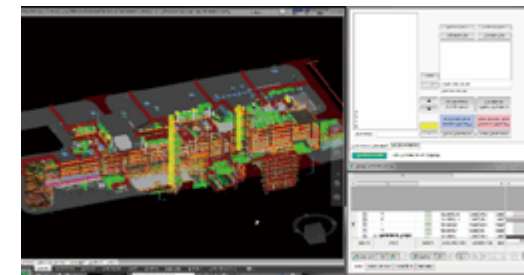
3D laser scanning applications



MRT Railway



Building Information Modeling (BIM)



Construction process simulation

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■ Performance and Potential Benefits of Our Indicative Green Engineering in 2021

Green engineering technical project	Type of energy/ Resource saved	Carbon Black Project , Turkey	Power Plant, Vietnam	Northern LNG Receiving Terminal, Taiwan
Water saved ^③	Water (10,000 ton/year)	5.33	198	1.4
Application of high-efficiency motors ^④	Electricity (MWh/year)	157.3	174.41	199.89
Application of inverter drive devices ^④	Electricity (MWh/year)	-	-	111
Application of high-efficiency transformers ^④	Electricity (MWh/year)	141.91	154.42	-
Application of high-efficiency lamps ^④	Electricity (MWh/year)	-	175.66	1268.67
Application of low-emission valves ^⑤	VOCs (ton/year)	34.66	-	103.4
Re-concentrated wastewater effluent re-use through reverse osmosis Treatment ^③	Water (10,000 ton/year)	27.2	-	-
Application of Smart Junction Box ^⑥	CO ₂ e (ton)	36.7	-	6.5
Fly ash or slag used for concrete ^⑥	CO ₂ e (ton)	-	-	7,271.8
Priming painting completed before the valve leaves the factory ^⑥	CO ₂ e (ton)	-	0.15	0.21

Notes

- ① Annual electricity saved is calculated based on 24-hour operation for 365 days per year. The annual CO₂e emission factor in 2020 was 0.502 kg/kWh in Taiwan according to the Bureau of Energy, Ministry of Economic Affairs; for oversea application, referring to IGES_GRID_EF_v10.12, or speculated based on the electricity structure. Annual power- saving from outdoor lighting is calculated by operating 365 days a year and 12 hours a day, and indoor lighting is calculated by operating 365 days a year and 24 hours a day.
- ② The calculation of the CO₂ emission scale of the plant arrangement value engineering achievements is based on "Yu-Sheng Chang, 2002, 'Life Cycle Assessment on the Reduction of Carbon Dioxide Emission of Buildings', National Cheng Kung University Paper, and Wen-Sheng Ou/ Po-Yan Kuo/Yu-Chan Chao/Hsien-Te Lin, 2007, 'Research on the Carbon Dioxide Emissions from Water and Electrical Piping Life Cycles of Taiwan's buildings', Chia Nan Annual Bulletin, Issue 33.
- ③ The potential water-saving benefit produced through the application of the motors with the efficiencies higher than CNS or IEC standard, or transformers with efficiencies higher than CNS standard, or the LED lamps with power consumption lower than T8, and being implemented in the operation stage.
- ④ The potential power-saving benefit produced through the application of the green technologies, such as waste water retreatment/ recycle in the design stage, and the implementation of the treatment/ recycle system in the operation stage.
- ⑤ The potential VOC reduction benefit, produced through the application of the low emission valves according to ISO-15848-1/2, compared with the common valves in the design stage, and the implementation in the operation stage.
- ⑥ The potential emission reduction benefit, produced through the application of the Smart Junction Box in lieu of the common junction box, or Fly ash or slag used for concrete in lieu of the common concrete, or Priming painting completed in the factory in lieu of being completed at site in the design stage.

■ Performance of Our Indicative Green Engineering in 2021

Green engineering technical project	Type of emission reduced	North Power Plant, Taiwan	North Biomass Center, Taiwan	Petrochemical Plant, Singapore	Central Power Plant, Taiwan	Others
Surplus material reuse ^①	CO ₂ e (ton)	6.6	-	8.9	300	-
Surplus material resale ^{① ③}	CO ₂ e (ton)	-	-	-	-	244.7
Re-use of site wood-boxes ^②	CO ₂ e (ton)	-	4.22	-	-	-
Virtual integrated bid opening room ^③	CO ₂ e (ton)	-	-	-	-	70

Notes

- ① In the earlier stage, the surplus material will be treated as scraps, and recycled as the waste steel. Later, there were some projects reselling them to the vendor, or transferring them to the other projects, with low efficiency due to the operation system inconvenience. In 2018, CTCI developed the Surplus Material Management System (SMM), with which the surplus material of the projects in all the stages can be integrated to match the demand of the other projects, so that they can be either transferred and reused by the other projects, or resold to the vendor, resulting in the emission reduction benefit due to the reusing or reselling of the on-spec. material, compared with being recycled as the waste steel.
- ② The emission reduction benefit produced through the Re-use of site wood-boxes in the construction stage.
- ③ The emission reduction benefit produced through the application of the Virtual integrated bid opening room resulting in the cutting of the trips of the oversea vendor in the procurement stage.



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Transition to Low-Carbon Engineering

Low carbon and environmental engineering projects play important roles in effectively mitigating climate change and environmental impacts. Global warming and climate change have forced the high energy-consuming petrochemical industry to face stricter requirements of environmental protection, sustainability, and net zero emissions. The future development of the petrochemical industry will be seriously impacted and head to improving energy efficiency and reducing energy consumption. Hence, the need to replace old plants and enhance the efficiency of existing plants will increase. CTCI prioritizes low-energy design in construction projects and actively assists proprietors in the design and construction of green buildings. CTCI has transformed from traditional business model with most projects coming from oil refining and petrochemical industry to various environmental and green engineering projects and gradually expanded service scope. Among projects we implemented, the number of low-carbon and environmental engineering projects including renewable energy, water reclamation plants, wastewater treatment, air pollution improvement, public transportation add up to 5 in 2021, accounting for 45.4% of the total projects.

Considerable energy will be consumed during the life cycle of engineering constructions. Therefore, it is of environmental significance in aspects of effective allocation of resources and greenhouse gas reduction to reduce energy consumption in operation of plants built so as to reduce operational cost of customers. CTCI has established cross-department ESG task force, responsible for promoting and enhancing energy saving and environmental protection management in construction sites as well as delivering energy saving and carbon reducing services to customers. These technology services could reduce the environmental impact of products in operation and become a drive for corporate growth in commercialization process.

■ Green Constructions

Acquired

Yeong Guan Port of Taichung Offshore Wind
Turbine Casting Plant Design

Qualified Level *1

The second headquarters building
of CTCI

Diamond Level *1



■ Number of projects

Category	2018	2019	2020	2021
Hydrocarbon	10	14	5	1
Thermal power plant	0	0	3	0
Steam and power co-generation plant	0	2	1	0
Waste incineration power plant	0	0	0	0
Industrial	2	5	11	6
Renewable energy	1	3	2	0
Water reclamation plant	1	2	1	0
Wastewater treatment	0	2	0	2
Air pollution improvement	2	3	1	1
Public Transportation	0	2	0	1
Total	16	33	24	11
Ratio of low-carbon projects against all environmental protection projects (%) ①②	4	12	4	5
	25%	36.4%	16.7%	45.4%

Notes

① Includes renewable energy, water reclamation plants, wastewater treatment, air pollution improvement, and public transportation projects.

② Refers to general industrial projects, one of which has acquired green building label and belongs to low carbon and environmental engineering project.

Strengthen Climate Resilience

Introduction of TCFD Framework

By introducing Task Force Climate-Related Disclosure (TCFD) framework and taking the physical and transformational risks and relevant responsibilities into account, CTCI will be able to evaluate the climate change risks that value chain partners, suppliers and CTCI itself may encounter. It would accelerate the promotion of CTCI's climate-related financial disclosures and facilitate communication with stakeholders.

To demonstrate that CTCI is willing to take on the responsibility to jointly mitigate climate change with the world, we have included the Climate Change Risk Management Regulations in the Company's standardized documents, and put greenhouse gases and climate change on top of the agenda of the sustainability promotion team, "ESG Task Force." ESG Task Force is responsible for green-engineering promotion, climate change risks and opportunities assessment, energy-saving and carbon reduction projects, as well as the development of other contingency strategies. The ESG office, led by the Chief Sustainability Officer (CSO), is established to advocate the ESG issues through the task force with relevant units, supervised by the ESG Committee under the Board of Directors. The chief supervisor of the team (the President) reports directly to the Board of Directors on the effectiveness of greenhouse gas management and the outcomes of our climate change responses measures, which also serves as reference for long-term strategy development on climate-change risks. CTCI's net-zero targets are to achieve net zero emissions from the office areas by 2030, and net-zero emission from the offices, service, and production sites by 2050. CTCI has committed in 2022 to set near- and long-term company-wide emission reductions target in line with science-based net-zero with the SBTi.



DRIVING AMBITIOUS CORPORATE CLIMATE ACTION



Levels

CTCI's practices

Governance

- CTCI is committed to setting near- and long-term company-wide emission reduction target in line with science-based targets initiatives (SBTi), and advocates the ESG issues by the ESG office, led by CSO, through the ESG Task force with the relevant units, supervised by the ESG Committee under the Board of Directors.
- The ESG Task Force regularly reviews the performance and reports to the Board of Directors via the President, who assumes the role of ESG Task Force chief supervisor, and reports directly to the Board of Directors on the climate change coping strategies and responses measures.

Strategies

- The identified significant climate change risks according to the Climate Change Risk Management Regulations are: Near-term: regulations and standards about product identification; mid-term: extreme rain fall or drought; long-term: regulation of renewable energy. The identified significant climate change related opportunities are: Near-term: low carbon products or services; mid-term: producing process; long-term: public construction participation.
- Regarding the transition risks, the business of the refinery and petrochemical construction has been reduced drastically, and the business mode will be transited to low carbon, green engineering prevailing under the trend of ESG and net-zero. Governments around the world are gradually formulating regulations restricting greenhouse gas emissions, and international agreements have expressly pointed out global reduction targets. Besides, Taiwan Government published the 2050 net-zero roadmap, highlighting the global trend of ESG & net-zero. CTCI established the Advanced Technology Facility Business Operation to engage in business transition and enhance technological capabilities to pursue business opportunities in the hi-tech industry. To adapt to the tension of the low carbon economy, CTCI invested heavily in R&D and joined forces with the academia, including the ITRI, for the master of the development and the know-how of the key technologies in sectors of net-zero emission, renewable energies such as hydrogen for the finalization of the roadmap to carbon neutralization/net-zero target. Besides, IEPBO also strived for renewable energy related projects. In response to the climate change regulations, CTCI moved ahead to join volunteer initiatives to complete the planning of the roadmap to net-zero, and joined forces with the supply chain for the commitment of ESG and net-zero, actions for the carbon reduction, promotion of the GHG inventory, setting of the reduction targets for the formation of the low carbon supply chain.
- By introducing Task Force Climate-Related Disclosure (TCFD) framework and taking the regulational, physical, and transformational risks and relevant responsibilities into account, analyzing the 2°C (or lower) scenario and parametric hypothesis, CTCI will be able to evaluate the operational and financial impacts that our suppliers (upstream), clients (downstream) and CTCI itself may encounter. It would accelerate the promotion of CTCI's climate-related financial disclosures and facilitate communication with stakeholders.

Risk management

- In 2021, CTCI incorporated the risk of the climate change into the Risk Management Regulations, and formulated the "Climate Change Risk Management Regulations" to identify the various potential operation risks and opportunities with TCFD framework analysis. The ESG office regularly convenes meetings and invites climate change risk-management representatives from all units to participate in the climate-change risk and opportunity identification meeting. The climate change risk-management representative will identify climate-change risks for the next 10 years or beyond based on climate-change risk and opportunity identification table via the method of consequence/probability matrix with the impact level and probability of occurrence to prioritize the significant risks/opportunities in accordance of the Risk/ Opportunity Rating.
- The countermeasures will be drawn up once the identification results have been reviewed and approved by the unit supervisor. The climate change risk-management representative then draws up response measures based on the identified climate change risk files, and submits them to the head of business operation unit for review before submitting to the Risk Management Executive Committee.
- After the response measures in response to the identified climate change risk files were approved by the Risk Management Executive Committee, they will be implemented and managed in accordance with the Risk Management Regulations.
- Acting in response to the even more serious climate changes, operations of CTCI will transfer to the low carbon mode. Key issues regarding the climate change and net-zero effectiveness will focus on saving of energy consumption to reduce the company operation cost through measures of energy saving and the application of the renewable energy; below are the specific indicators:
 - ① To achieve net-zero emission from the headquarters and the office areas globally by 2030
 - ② To achieve net-zero emission from the offices areas, service, and production sites by 2050.
- In 2021, scope 1 and scope 2 emissions for the headquarters building are 159 and 2,445 tons CO₂e, respectively, while total emissions of scope 1 and scope 2 of all construction sites worldwide are 4,318 and 2,677 tons of CO₂e, respectively. The total scope 3 emissions are 205 tons CO₂e. In respond to the risks and opportunities of the climates changes, CTCI will join force with the upstream/downstream partners by encouraging them to gradually disclose their emission record, making contribution to the mitigation and reduction of GHG emission through the procedures of identification, analysis, and reduction.

Indicators and targets

- The targets of CTCI in managing climate-related risks and opportunities:
 - ① Greenhouse gas reduction targets
 - ② Energy resources utilization reduction targets
 - ③ Waste reduction targets
 - ④ Green engineering technical indicators
- Performance for realization of the 2021 targets:
 - ① Greenhouse gas reduction targets: Though the scope 1 emissions of the headquarters failed to meet the 2021 target, the scope 2 emission reduction target of the headquarters and the scope 1 + 2 targets of the construction sites were all met. The cause of the failure was the spoiled oil from the broken oil pipe of the emergency transformers leaking into the underground oil storage tank along with the rain, leading to the emulsion of the diesel inside the tank, which became useless. The management countermeasures were the recycling, treatment of the spoiled oil and the replacement of new oil taken care of by the professional vendors, and the regular inspection and maintenance of the oil system to ensure normal operation.
 - ② Energy resources utilization reduction targets: the 2021 energy resources utilization reduction targets in the headquarters and the constructions sites were all met.
 - ③ Waste reduction targets: the 2021 waste reduction targets in the head quarter and the constructions were all met.
 - ④ Green engineering technical indicators: Regarding the application of the eco-environment technologies, there are three new indicators added in 2022: the percentage of the projects applying at least one of the green technologies, the percentage of low carbon green engineering projects, and the percentage of projects submitting at least one value engineering proposal related to energy saving/carbon reduction.

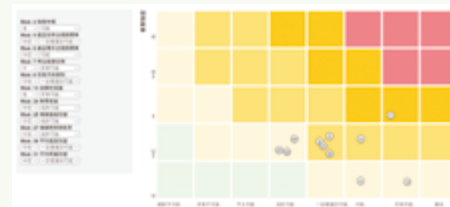
Over the last five years, the World Economic Forum has pointed out in its global risk reports that climate change-related risks and disasters remain top global risks. As global climate change and energy consumption intensify, the ability of companies to transform into low-carbon business model has become a critical factor in improving competitiveness across all sectors. In 2021, CTCI formulated the "Climate Change Risk Management Regulations" to establish a complete governance process by continuously identifying issues related to climate change, and examining businesses that are most likely to be affected by climate change and the measures to manage and mitigate such risks proposed by the ESG Task Force through the brainstorming of the members, so that we become better at identifying and responding internally to various risks and opportunities. CTCI's Climate Change Risk Management Regulations shall serve as the guiding principles to the Company's management of issues associated with climate change. The Company regularly identifies, analyzes and manages potential risks and opportunities for the Company and the asset resulting from climate change. At the beginning of each year, the responsible department invites climate change risk-management representatives from all units to participate in the climate-change risk and opportunity identification meeting. The climate change risk-management representative will identify climate-change risks for the next 10 years or above based on the climate-change risk and opportunity identification table. Related countermeasures are drawn up after the identification result is submitted to the unit supervisor for review and approval. The climate change risk-management representative draws up response measures based on the identified climate change risk files, and submits them to the head of business operation unit for review before submitting to the Risk Management Executive Committee.

CTCI identified the near-term (10 years), middle (20 years) and long-term (30 years) risks and opportunities of the climate changes on the Organization, Upstream (supplier) and Downstream (Clients) under the Transition, Nationally Determined Contributions (NDCs), and Physical scenarios to establish the matrices of the risk and opportunities in accordance with the TCFD framework. The matrices of the risk and opportunities were established for the Organization to identify 11 and 14, totally 25 significant risks/opportunities items from the 36/33 climate change risks/opportunities. Regarding

the transition risks, business of the refinery and petrochemical construction projects will be reduced drastically, and our business mode will be transitted to low carbon, green engineering with increasing opportunities under the ESG and net-zero trend. In this regard, CTCI identified the potential risks and opportunities through the Transition and Physical scenario analysis and parameter assumption in various time frame, and then investigated the operation and financial impacts to the Organization, Upstream (supplier) and Downstream (Clients) in the value chain. In the same way, the analyses and the identification results of the risks and opportunities with management measures were also done for the Upstream (supplier) and Downstream (Clients) in the value chain.

Climate risks matrix in Organization

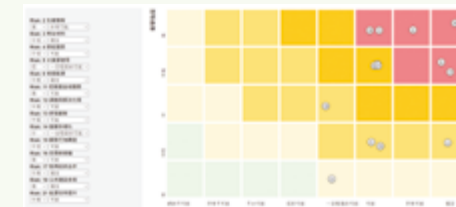
Significant risks



Near-term: regulation and standard about product labeling
Middle: extreme rain fall or drought.
Long-term: regulation of renewable energy

Climate opportunities matrix in Organization

Significant opportunities



Near-term: low carbon products or services.
Middle: producing process
Long-term: public construction participation.

Climate risk matrix for Upstream Supplier

Near-term: tropical hurricane
Middle: extreme rain fall or drought.
Long-term: causing the change of the natural resource

Climate opportunities matrix for Upstream Supplier

Near-term: producing process
Middle: enhancement of the energy efficiency
Long-term: resource substitution or diversity



Climate risk matrix for Downstream Client

Near-term: fuel tax/energy tax
Middle: market demand of the low carbon products and services.
Long-term: carbon tax

Climate Opportunities matrix for Downstream Client

Near-term: low carbon energy
Middle: R&D and innovation
Long-term: operation diversity

Legend: Significance High Mid-High Middle Mid-Low Low

	Identification results of the main risks and opportunities of climate change	Impact range	Potential financial impact	Management measures taken by CTCI
 Risks	1.5°C Scenario: Transformation <ul style="list-style-type: none"> As customer behaviors would change due to unstable climate, CTCI must adjust itself to cater to the needs of customers Clients might make changes in terms of their product positioning, which will, in turn, affect our Company's professional workforce deployment costs. If the actual impact of climate change intensifies, it will affect people's willingness to refine and extract oil across the globe. CTCI's business is transitted from the construction of hydrocarbon plants to the low carbon green engineering model. Given that there will be rising environmental awareness in the future, CTCI must change its business model if it hopes to ensure sustainable business. 	<ul style="list-style-type: none"> Within the Organization Customers' side 	<ul style="list-style-type: none"> Decrease in revenue Increase in operating cost Increase in capital expenditure Decrease in asset value 	<ul style="list-style-type: none"> Review the possible impact of climate change issues on the market, follow market trends and get information, and develop related green energy engineering technical services. Increase brand and marketing efforts, and follow the market trends to provide diversified engineering services. Understand the application and development of various corresponding reduction control techniques and increase the diversity of operations. Build a relationship with potential business partners and let them know the latest trends or understand customers' needs to suggest measures and related information. Promote and implement green engineering technical services to ensure engineering service quality.
	NDC Scenario: Regulatory <ul style="list-style-type: none"> Currently, we do not see that international and domestic laws and regulations have significant and direct impact on CTCI, but continuous monitoring is necessary. Governments around the world are gradually formulating regulations restricting greenhouse gas emissions, and international agreements have expressly pointed out global reduction targets. Besides, Taiwanese Government published the 2050 net-zero roadmap, highlighting the global trend of ESG & net-zero. The products and services provided by the Company shall comply with environmental-related regulations. 	<ul style="list-style-type: none"> Within the Organization Customers' side Supply chain 	<ul style="list-style-type: none"> Increase in operating costs Increase in capital expenditure Decrease in asset value 	<ul style="list-style-type: none"> Committed to the 2030 & 2050 net-zero emission roadmap, join the volunteer net-zero initiative, implement the GHG inventory and set the reduction target. Join hands with the supply chain for the commitment of ESG and net-zero, engaged in carbon reduction action, promote the GHG inventory, and set the reduction targets for the formation of the low carbon supply chain. Carry out an assessment based on environmental criteria and HSE regulation criteria as stipulated in our internal HSE regulations identification procedures to manage the risks that come with new regulations. Assign personnel to study the content and impact of international conventions or protocols, and develop countermeasures early as per international conventions and treaties. CTCI establishes, maintains, and implements a series of assessment procedures on HSE regulations identification and compliance.
	RCP8.5 Scenario: Physical <ul style="list-style-type: none"> Extreme climate and natural disasters not only may bring potential delays in engineering, damage to engineering structure, and property loss, they may also affect workforce allocation, such as their incapacity to work, or in more severe cases, even lead to incidents involving casualties. Regional water scarcity due to low rainfall may affect water consumption during construction. The cost of procurement may increase due to changes or reallocations of natural resources globally or regionally. If the temperature of the project site is too high, workers must stop working to avoid thermal hazards. 	<ul style="list-style-type: none"> Supply chain Within the Organization 	<ul style="list-style-type: none"> Increase in operating cost Decrease in asset value 	<ul style="list-style-type: none"> Change construction strategies, try to get a longer timeframe, and include risk management costs in the quotation. Carry out pre-work training on subjects like thermal hazard safety guidelines, precautions, and personal health management. Provide a comfortable work environment for employees and workers, so that they are free from environmental injuries and ensuring that they have sufficient stamina. Plan for stable sources of water supply, set up recycling equipment, and reuse water resources. Purchase natural disaster insurance. Seek long-term supplier partners so we can get lower price for larger quantity of procurement.
 Opportunities	1.5°C Scenario: Transformation <ul style="list-style-type: none"> Circular economy and waste recycling are starting to replace the linear economy model. Changes in global or regional socioeconomic status may increase local demands for new engineering projects or environmental engineering projects. 	<ul style="list-style-type: none"> Supply chain Within the Organization Customers' side 	<ul style="list-style-type: none"> Increase in revenue Decrease in operation cost Decrease in capital expenditure Increase in capital gain Increase in asset value 	<ul style="list-style-type: none"> Increase market acumen and service diversity and continue doing market research and local observations. The incineration power plants operated by our Group Resource Cycling Business sell the electricity generated from waste incineration back to Taiwan Power Company, which increases our revenue while minimizes the use of fossil fuels. Participate in the "Demonstration and Promotion Plan for the Public Sewage Treatment Plant Drainage Water Recycling of the Construction and Planning Agency" to create sustainable business opportunities for water resource recycling economy Provide products and services with low environmental impact, especially in terms of greenhouse gas emissions.
	NDC Scenario: Regulatory <ul style="list-style-type: none"> When proprietors whom we serve need to comply with greenhouse gas regulations, this becomes our chance to offer them services with green engineering techniques that are more energy-efficient and environment-friendly. 	<ul style="list-style-type: none"> Customers' side 	<ul style="list-style-type: none"> Increase in revenue Reduction in capital expenditure 	<ul style="list-style-type: none"> Continue to develop green engineering techniques to update regulations and standards according to the owners' needs Understand trends in technical applications in the market, apply the best available techniques, and invest in new technical development through collaboration among the industry, government, and universities.
	RCP8.5 Scenario: Physical <ul style="list-style-type: none"> As climate becomes more extreme, CTCI has high-quality construction techniques for clients that can help them minimize the loss caused by natural disasters and increase our market competitiveness. 	<ul style="list-style-type: none"> Within the Organization 	<ul style="list-style-type: none"> Increase in revenue Decrease in operation cost Reduction in capital expenditure Increase in capital gain Increase in asset value 	<ul style="list-style-type: none"> Develop green engineering technical services or increase existing energy efficiency. Use the best available techniques. Green engineering of high efficiency and low emissions are priorities when considering services in their full lifecycle.



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■ Operation and financial Impacts for climate risks

Physical climate scenario	Parameter assumption	2021 ~ 2040	2041 ~ 2060	Operation and financial Impacts			Management measures
				Upstream (supplier)	CTCI	Downstream (client)	
RCP2.6	The market demand for the low carbon products and services.	Predicted reduction of the fossil fuel industry investment is around 1-5% annually, and the proportion of it in CTCI revenue is predicted to be decreased annually by 1-8%.				Impact to the revenue, decreasing from 520 million NTD in 2021 to 40 million NTD in 2040, and negligible after 2040.	Every year, 50% of the R&D investment (over 70 million NTD) will be focused on environment technologies. Develop net-zero EPC technologies innovation with the introduction of CCS and energy recycling and transformation technologies to expand the low carbon green engineering business.
RCP4.5	Regulation of renewable energy	CTCI is committed to using 100% renewable energy and achieving zero emission from the office areas by 2030.	CTCI is committed to achieving net zero emission from the offices areas, services, and production sites by 2050 (or deadline according to the government's regulation).	To facilitate the achievement of scope 3 net-zero target, incentives will be implemented to encourage suppliers for the commitment of the ESG and net-zero emission, actions to carbon reduction, promotion for the GHG inventory, and setting of the reduction target for the formation of the low carbon supply chain.	To honor the commitment, CTCI will purchase 100% of renewable energy with the additional cost of 31.5 million NTD annually. Besides, it is also necessary to develop carbon negative technologies, such as CCS.		Join efforts with the R&D academies such as ITRI, for mastering the development of key technologies in the net-zero emission, and renewable energies sectors, such as hydrogen, for achieving the carbon neutralization/net-zero targets.
RCP6.0	Extreme rain fall and drought		It was found through the investigation to the future climates that the temperature increase depends significantly on various scenarios. Compared with the average temperature in the base years (1986-2005), the increase of the temperature will reach 3.7°C [+2.6~4.8] in the end of the century under the worst scenario (RCP 8.5), and according to the simulation results, the range may exceed 4°C. It will reach 1.8 °C [+1.1~2.6] in the end of the century under the NDC scenario (RCP 4.5). For the estimation under RCP 6, there will be 70% increase of the extreme rain fall for a 3°C increase.	The additional indirect cost is around 20 million NTD annually incurred by the OT expenditure of suppliers due to the calamity.	The lost of assets, such as buildings, equipment, land and tools, due to the calamity, is estimated to value about 10 million NTD annually.		1. To adjust construction strategies, negotiate for schedule extension, and to include the risk in the proposals, with additional cost around 0.6 million NTD. 2. Purchase insurances for prevention of natural disaster, with annual cost around 0.9 million NTD.
RCP8.5	Change of the average temperature		It is pointed out that climate warming will increase the summer air condition demand, according to the "Working Group II Report: Impacts, Adaptation and Vulnerability to Climate Change" in the IPCC Fifth Assessment Report (AR5). According to the simulation mode for the global energy, under the reference condition, power consumption for the air-con of the dwelling house will increase from 300 billion KWh in 2000 to 4 trillion KWh in 2050 globally, within which around 25% is attributed to the climate change.	The additional indirect cost is around 30 million NTD annually incurred by the OT expenditure of suppliers due to the calamity	Predicted additional supply cost of power consumption for air conditioner or process equipment are, around 40 million NTD annually.		Development of the energy saving and management measures will cost around 0.6 million NTD annually.

■ Operation and financial Impacts for climate opportunities

Climate change scenarios	2021 ~ 2040	2041 ~ 2060	Operation and financial impacts			Management measures
			Upstream (supplier)	CTCI	Downstream (client)	
1.5°C	Hi-Tech: The investment of the global data center in Taiwan will increase with a 9.9% compound annual growth rate, and there will be 100 billion USD investment for the expansion of the production capability by a giant of the semiconductor industry.			The potential business opportunity of CTCI after transition to the low carbon engineering in the hi-tech industry market will be around 143 billion NTD up to 2030.		Every year, 50% of the R&D investment (around 70 million NTD) will be focused on environment technologies. Besides, we establish the Advanced Technology Facility Business Operations to enhance related technologies and pursue business opportunities in the hi-tech industry.
2°C	According to the roadmap of energy transition in Taiwan 2025 energy policy highlighting coal reduction, gas increasing, renewable energy development, LNG will increase from 17.75 million tons import in 2020, up to 29.5 million demand in 2025.				The potential business opportunity for the gas-fired power plants will be 300 billion NTD, and 180 billion NTD for the LNG receiving terminals.	Every year, 50% of the R&D investment (around 70 million NTD) will be focused on the environment technologies. As for net-zero EPC technologies, we introduced CCS and technologies of energy cycling and transformation to expand into the low carbon green engineering business.
NDC (Nationally Determined Contributions)	Water resource: Taiwanese government announces many renewable water plant projects between 2019 and 2025. Railway transportation: 12 railway construction projects will be initiated between 2021 and 2026.			Potential business opportunity of CTCI after transition to the low carbon engineering: around 110 billion NTD for the water resource market, and 166 billion NTD for railway transportation market.		Every year, 50% of the R&D investment (around 70 million NTD) will be focused on the environment technologies. As for net-zero EPC technologies, we introduced CCS and technologies of energy cycling and transformation to expand into the low carbon green engineering business.



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Greenhouse Gas Management

In 2021, total scope 1 and scope 2 emissions of the headquarters building are 159 and 2,445 tons CO₂e, respectively, while total emissions of scope 1 and scope 2 of all construction sites worldwide are 4,318 and 2,677 tons of CO₂e, respectively. Furthermore, we have been requested by international investors to fill out CDP(Carbon Disclosure Project) questionnaire and received B (management) score for carbon disclosure and A- (leadership) score for supply chain engagement in 2021. Each year, we continue to check the rooms for improvement in terms of climate change management through such questionnaire filling process, examination of question changes, as well as benchmark learning. Moreover, our responses to climate change risks and opportunities extend beyond us by working with our partners upstream and downstream. We encourage them to work with us in terms of identification, analysis, calculation, and reduction of the greenhouse effect and emission reduction, so we can disclose our indirect carbon emissions.

Greenhouse Gas Emissions (tons of CO₂e)

Region	Scope	Annual Performance				Goal		
		2018	2019	2020	2021	2021	Achieved or not	2022
Headquarters Building	Scope 1	126	149	142	159	146	X ^⑤	126
	Scope 2	2,910	2,710	2,557	2,445	2,772	O	2,386
Subtotal	Scope 1+2	3,036	2,859	2,699	2,604	2,917	O	2,512
Global Construction Sites	Scope 1	7,026	7,431	4,835	4,318	6,912	O	6,724
	Scope 2	5,115	4,775	2,408	2,677	5,655	O	5,501
Subtotal	Scope 1+2	12,141	12,206	7,243	6,995	12,567	O	12,225
Add up	Scope 1+2	15,177	15,065	9,942	9,599	15,484	O	14,737

Emission source	Greenhouse Gas Emissions of Scope 3 (tons of CO ₂ e)
Greenhouse Gas Emissions of Headquarters Building (tons of CO ₂ e/year)	35
Domestic Construction sites Greenhouse Gas Emissions (tons of CO ₂ e/year)	170
Oversea Construction sites Greenhouse Gas Emissions (tons of CO ₂ e/year)	0
Total	205

Notes

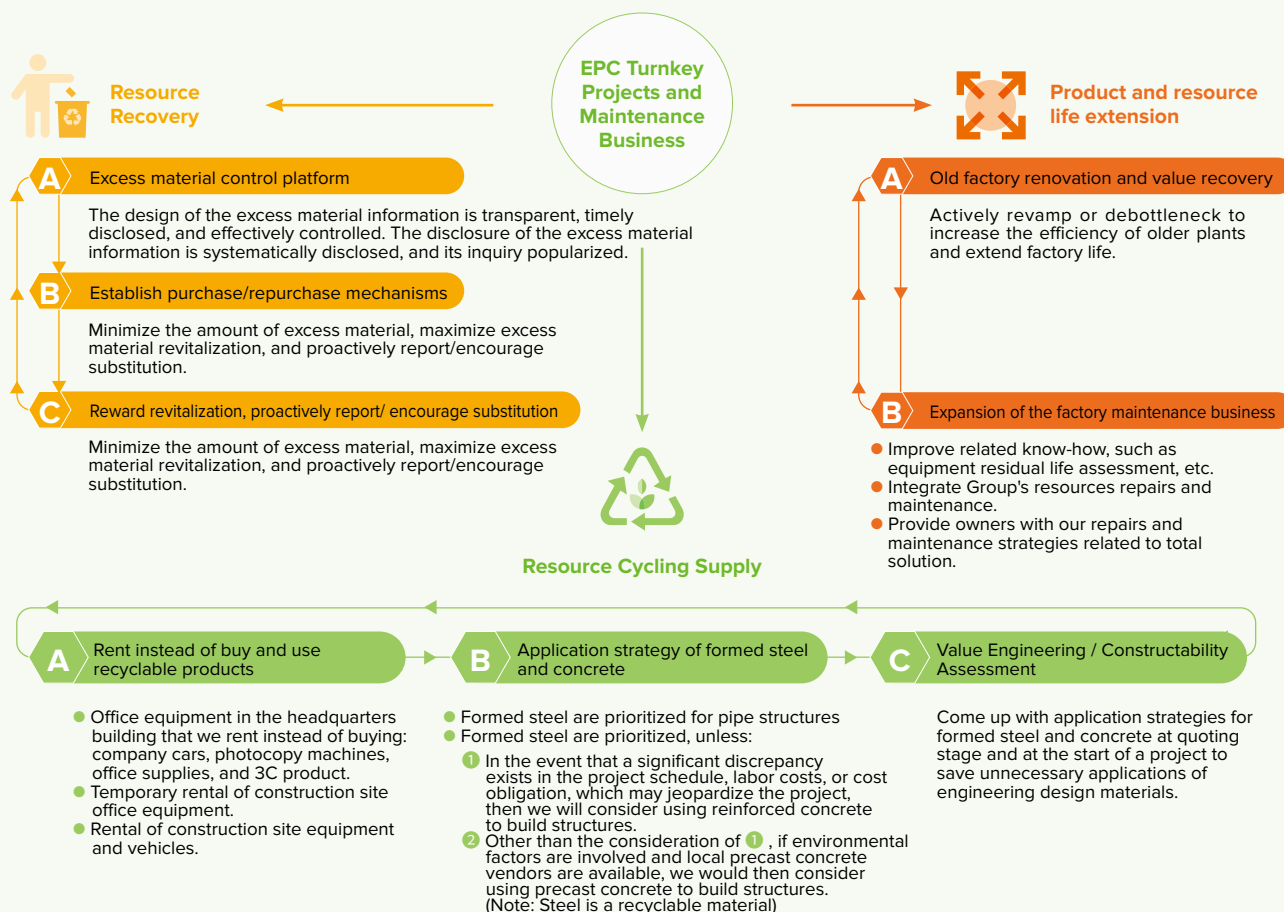
- ① The goals are set based on the 2021 energy management performance indicators, the estimated number of people at the headquarters, and estimated number of working hours at the construction sites.
- ② Inventory methods include ISO 14064-1:2018, the GHG Protocol — An Enterprise Accounting and Reporting 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.
- ③ The scope of inventory at construction sites in 2018 has been extended to overseas, which is why the emissions have increased significantly.
- ④ The base year is 2018.
- ⑤ In 2021, the Scope 1 emissions of the headquarters building did not meet the goal due to the rupture of the emergency-generator oil pipeline, which caused rainwater on the garden ground to seep into the underground oil storage tank, resulting in the emulsification of diesel oil in the tank, making it unusable. After hiring a professional maintenance provider to recycle, replace with new oil. In the future, regular observation and maintenance will be made to facilitate the normal operation of the system.
- ⑥ The GHG emissions have been verified by an independent third party (SGS Taiwan Ltd.).

Notes

According to the significance evaluation, the inventory of the Greenhouse gas emissions of scope 3 only included waste transportation and treatment (headquarters) and vehicle rental oil consumption (headquarters and domestic construction sites) in 2021. CTCI has committed to set near- and long-term company-wide, including Scope 3 emission reductions in line with science-based net-zero with the SBTi.

Circular Economy

CTCI leads its peers in designing a circular economy model in construction engineering with its core capabilities, including three main aspects, i.e., resource recycling 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 recycling supply, CTCI proactively provides renewable, recyclable, 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 efficacies 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 waste incineration plants in Taiwan, operated by our subsidiary ECOVE, has reached approximately 1,241 GWh a year.



Circular Economy Model

Strategies

Action Plans

Resource Recycling Supply

Value Engineering/ Constructability Assessment	Come up with application strategies for formed steel and concrete at quoting stage and at the start of a project to save unnecessary applications of engineering design materials.
Application strategy of formed steel and concrete (Note: Steel is a recyclable material)	<ul style="list-style-type: none"> Formed steel are prioritized for pipe structures Formed steel are prioritized, unless: <ul style="list-style-type: none"> (1) In the event that a significant discrepancy exists in the project schedule, labor costs, or cost obligation, which may jeopardize the project, then we will consider using reinforced concrete to build structures. (2) Other than the consideration of (1), if environmental factors are involved and local precast concrete vendors are available, we would then consider using precast concrete to build structures.
Renting instead of buying Use recyclable products	<ul style="list-style-type: none"> Office equipment in the headquarters building that we rent instead of buying: company cars, photocopy machines, office supplies, and 3C product. 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 popularized.
Establish purchase/repurchase mechanisms	Establish purchase/repurchase mechanisms and appropriately minimize excess material.
Reward revitalization, proactively report/ encourage substitution	Minimize the amount of excess material, maximize excess material revitalization, and proactively report/ encourage substitution.

Product and resource life extension

Old factory renovation and value recovery	Actively revamp or debottleneck to increase the efficiency of older plants and extend factory life.
Expansion of the factory maintenance business	<ul style="list-style-type: none"> Improve related know-how, such as equipment residual life assessment, etc. Integrate Group's resources repairs and maintenance. Provide owners with our repairs and maintenance strategies related to total solution.



Environmental and Resource Management

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 took an integrated approach by combining it with the ISO 45001:2018 Occupational Health and Safety Management System into one HSE management system. This HSE system covers various dimensions, including engineering, procurement, construction, commissioning, as well as any controllable and affected activities, products, and service at the construction sites, that is, covering 100% of our revenue scope. Moreover, the system has been validated by a third-party validation company. To ensure the effectiveness of our environment management system, not only do we carry out regular and nonregular internal auditing, we also invite third-party validator to conduct external audits on CTCI headquarters and randomly-selected construction sites. Over the past five years, CTCI has no record of heavy fines for major environmental pollution. In 2021, there were only 3 violations of the Waste Disposal Law Article 31. The main reason is that the construction site's business waste disposal plan has not been reviewed and approved by the competent authority before started construction, the total penalty amount is NTD\$18,000. Our environmental policy is in accordance with the practices of the management system, and has been integrated with occupational safety and health policy declaration into the HSE policy declaration. We commit ourselves to environmental protection and sustainable development in the HSE policy declaration, 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.

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 construction processes. These comprise CTCI's main sources of greenhouse gas emissions. In 2021, the total electricity consumption of the headquarters building and the construction sites combined was 10,004,247 KWh, while total consumption of gasoline and diesel combined was 1,194,103 liters. The total energy consumption of the headquarters building and the construction sites reached 7.75×10^5 million joules, and energy consumption intensity reached 9,664.35 million joules per person at the head quarters, and 2.81×10^6 million joules per million man-hours at construction sites. The energy use intensity (EUI) at the headquarters declined over the past four years, which was 1.6% less in 2021 compared to that in 2020, with the cumulative reduction of 7.25% in the near four years.. Moreover, we regularly compile the performance statistics each year and report them to the President. 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 reduction and energy-saving targets in the future, gradually leading to the final achievement of low-carbon vision. CTCI will buy 27% renewable energy in 2023. 2025:45% renewable energy (Headquarters will use 85% renewable energy.) 2027:55% renewable energy (Headquarters will use 100% renewable energy.) 2032:91% renewable energy (Headquarters and domestic sites will use 100% renewable energy.) 2050:100% renewable energy (Headquarters and all sites).

■ Energy Consumption

Region	Energy Type	Unit	Annual Performance				Goal		
			2018	2019	2020	2021	2021	Achieved or not	2022
Headquarters Building	Electricity	kWh	5,252,102	5,083,844	5,022,983	4,869,793	5,002,754	○	4,307,300
		Million Joules	1.89×10^7	1.83×10^7	1.81×10^7	1.75×10^7	1.80×10^7	○	1.55×10^7
Company Cars	Gasoline	Liters	23,816	19,078	16,533	14,803	27,550	○	23,720
		Million Joules	7.77×10^5	6.23×10^5	5.40×10^5	4.83×10^5	8.99×10^5	○	7.74×10^5
Global Construction Sites	Electricity	kWh	8,082,899	7,645,196	4,193,434	5,134,454	8,935,984	○	8,693,068
		Million Joules	2.91×10^7	2.75×10^7	1.51×10^7	1.85×10^7	3.22×10^7	○	3.13×10^7
	Gasoline	Liters	180,688	100,120	143,789	175,221	177,746	○	172,915
		Million Joules	5.89×10^6	3.27×10^6	4.69×10^6	5.72×10^6	5.80×10^6	○	5.64×10^6
	Diesel	Liters	1,952,180	1,707,131	883,021	1,004,079	1,920,398	○	1,868,194
		Million Joules	6.86×10^7	6.00×10^7	3.10×10^7	3.53×10^7	6.75×10^7	○	6.57×10^7

Notes 1 kWh = 3.6 million joules. The gasoline for vehicles has a calorific value of 32.635 million joules per liter. The calorific value of diesel is 35.146 million joules per liter



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■ Energy Management Performance Indicators

Region	Indicator	Unit	Annual Performance				Goal		
			2018	2019	2020	2021	2021	Achieved or not	2022
Headquarters Building	Energy Use Intensity (EUI)	kWh of electricity/square meter	125.5	121.5	120.0	116.4	119.6	○	102.9
	Emission Intensity	Tons of CO ₂ e/person	1.51	1.38	1.35	1.40	1.41	○	1.38
	Emission Intensity	Tons of CO ₂ e/million NTD revenue	0.085	0.108	0.104	0.085	0.113	○	0.082
	Energy Intensity	kWh/person	2,616	2,448	2,510	2,612.5	2,418	×	2,361
Global Construction Sites	Emission Intensity	Tons of CO ₂ e/million working hours	504.5	401.7	293.4	330.94	471.2	○	460.1
	Energy Intensity	kWh of electricity/ million working hours	-	-	-	242,916.0	-	-	327,176

Notes

- ① The goals are based on the 2021 energy management performance indicators, the estimated number of people at the headquarters, and estimated number of working hours at the construction sites.
- ② The number of employees indicates the average number of employees at the end of each month of the year.
- ③ Million NTD revenue indicates the unconsolidated revenue of the year.
- ④ The carbon emissions of each indicator are calculated based on the sum of Scope 1 and Scope 2.
- ⑤ Since the 2021 targets of CO₂e emissions per person at the headquarters building and CO₂e emissions per million working hours at construction sites were listed as material issues, so it was reduced by 6.6% in 2018.
- ⑥ The use of electricity in the headquarters building in 2021 was decrease by 3% compared with 2020; and the average number of people in 2021 was 1,864 compared with 2,002 in 2020, a greater decrease of 7%. Therefore, energy intensity (kWh/person) was unable to reach the goal. In 2022, energy-saving management and control measures will be implemented for equipment and operations such as air conditioning, lighting, elevators, sockets, water, paper, oil, and resource recovery in the headquarters building.

One company vehicle in headquarters building was retired in March 2021 to reduce oil consumption. In 2021, the air-conditioning system in headquarters building was shut down by the central control system at 9:00 PM every night, and it will be changed to 7:00 PM at night. In response to water seepage in the emergency generator oil storage tank of the headquarters building, diesel oil was replaced to improve power generation efficiency. Internally in the headquarters building, we make regular announcements to remind our employees to make energy-saving a habit and develop a corporate culture of energy conservation. Energy-saving and carbon reduction are the focus of our routine operations. The night guards inspect and record energy consumption status daily. The major energy conservation measures of the global construction sites are the application of Solar panels, small wind power generation fans, temperature and time control in air-con, building greening, natural lighting, Home appliances with environmental protection and energy saving labels.

■ Major Energy Conservation Measures

Item	Measures	Electricity saved (Kwh)	CO ₂ e saved (ton CO ₂ e)
Region : Headquarters Building			
Air-conditioning	The air-conditioning system in the headquarters building was shut down via the central control system at 7:00 PM (previously at 9:00 PM every night).	560,996.8	281.62



Materials

All resources on Earth are limited. In each of our project, we always carry out precise calculations to understand the minimum amount of resources and their costs for a given construction project to prevent waste and unnecessary use of materials, so we can realize CTCI's highly effective resource management. During the material selection stage, we would carry out assessment with respect to environmental-friendliness. The procurement of renewable materials helps us reduce resource consumption and environmental pollution. For the same reason, we support suppliers who carry out environmental management themselves and encourage them to develop and produce renewable materials. In addition, 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, by using the newly-introduced life cycle cost analysis software (EEA), we can calculate energy consumption and the costs incurred within the entire life cycle. Factors that we take into account in analysis include: economic factors, such as loans, cash flow, and recovery period; internal and external energy consumption and costs, such as costs incurred from operation, maintenance, decommissioning, and demolition. In short, each project is analyzed based on a 20-year life cycle.

Since we have promised that we would never use natural resources from the rain forests, primary forests, and no genetically modified trees, we now require, in our engineering standards, that projects should use woods certified by the Forest Stewardship Council (FSC). In terms of the management of the forest resource consumption on office supplies, we continue to emphasize 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 consumption. 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.

Region	Raw materials	Unit	Annual Consumption		
			2019	2020	2021
Headquarters Building	Paper	kg	39,808	28,174	23,384
	Paper	kg	14,931	20,534	8,272
	Wood ^①	ton	0	0	0
Global Construction Sites	Steel pipe	ton	32,040	7,634	11,890
	Concrete	ton	1,203,926	1,019,670	939,184
	Aggregate	ton	963,141	815,736	713,080
	Asphalt	ton	201	1,036	1,446
	Cement	ton	120,393	101,967	93,918

Notes ① CTCI does not use wood for construction, therefore its usage amount is 0.

■ The ratio of using regenerated/recycled materials (%)

Region	Raw materials	Unit	Annual Ratio		
			2019	2020	2021
Global Construction Sites	Wood	ton	-	-	-
	Steel pipes	ton	0.00%	10.80%	10.88%
	Concrete	ton	18.17%	6.0%	6.0%
	Aggregate	ton	18.17%	N/A	N/A
	Asphalt	ton	18.17%	N/A	N/A
	Cement	ton	18.17%	22.54%	20.06%

Remarks ① CTCI does not use wood for construction.
② The ratio for steel pipes and cement is estimated with reference to the CSR reports from China Steel Corporation (2018-P64, 2019-P71, 2020-P71) and Taiwan Cement Corporation (2018-P49, 2019-P98, 2020-P70, respectively).
③ The ratio of steel pipes in scrap steel; The quantum of concrete, aggregate, asphalt and cement are recycled raw materials/total quantum of raw materials x 100% (2019), the ratio of recycled raw materials (2020, 2021).
④ The recycled 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.

Water Resources

Water consumption of the headquarters building in 2021 has reduced by 6.3% compared to that in 2020, reaching our preset reduction target.

As to the source of water resources, the water used in the headquarters building comes directly from tap water provided by public utility. There are no other water sources. Wastewater is discharged into sewers. In addition to minimizing water resource wastage by widely adopting sensor faucets that can control the quantity and duration of water flow, we have also made many water conservation signs to remind employees to conserve water. Moreover, we install rainwater collection systems on the roof of the headquarters building and construction sites for vegetation watering and for construction uses. Apart from setting headquarters building's daily water consumption as one of our efficiency improvement goals, we have also come up with measures to reduce water consumption during construction. We began quantifying our water recycling and saving amount, 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 consumption intensity of the headquarters building is 8.82 M3 per person, and 8,332 M3 per million man-hours at global construction sites.

■ Water Consumption (in cubic meter)

Region	Annual Performance				Goal ^②		
	2018	2019	2020	2021	2021	Achieved or not	2022
Headquarters Building	19,145	18,285	17,551	16,439	18,841	O	17,391
Global Construction Sites	465,979	691,997	198,929	176,103	516,382	O	514,463
Recycled water	-	-	-	①	-	-	-
Recycling percentage	-	-	-	①	-	-	-
Drain water	-	-	-	192,542	-	-	531,854
Water consumption	-	-	-	0	-	-	0

Notes ① Rainwater is collected at the headquarters building and construction sites. However, since no quantitative data is available, we only disclose tap water consumption figures here.
② The targets are set based on the estimated number of staff in the headquarters and the estimated working hours at the sites.

Air Pollution

All CTCI staff on construction sites need to go through trainings on the requirements of Air Pollution Control Act before work commences, and must ensure that they fully understand air pollutants emitted need to meet standards. For inevitable polluting operations within the legal boundaries, such as temporary emissions during construction or commissioning, which may affect the quality of life of residents in proximity and impact the environment, we would always notify the residents in advance on the time and details of emissions to prevent misunderstandings and panic. No open burning, materials transportation, or other operations that would produce granular pollutants detrimental to human health and natural ecology are allowed on construction sites. In the event of a contingency, where there is 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	<ul style="list-style-type: none"> Have good work plans in advance to minimize land exposures; fill back swiftly after excavation, paving work, plant vegetation work, and clean soil pollution on 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 and soil stacking	<ul style="list-style-type: none"> Setting up surrounding fences for stacking. Sprinkle water to maintain moisture or cover with canvas when stacking on open ground or during windy conditions. Soil waste is shipped to qualified disposal grounds, landfills, or processing grounds. 	Prevent flying dust and maintain air quality.
Sandblasting operation	<ul style="list-style-type: none"> 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 impact on health.
Spray paint, paint, and solvents	<ul style="list-style-type: none"> Operated 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 impact on health.
Vehicular transportation and cleaning	<ul style="list-style-type: none"> Vehicles transporting 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	<ul style="list-style-type: none"> Any open burning is prohibited. 	Prevent air pollution and impact on health.

Soil and Groundwater

Before a construction work begins, we draw up sewage plans. This is followed by stringent environmental monitoring 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 designated distances from water bodies. When it comes to storage of major materials as announced by the central competent authority, we would install facilities that prevent groundwater pollution, followed by ongoing monitoring and recording. When the wastewater emitted in emergent circumstances or by accident is severely hazardous or affects drinking water safety or the environment, we would take emergency response measures and notifies local environmental authorities within three hours.

Common types of wastewater seen at 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 septic tanks of nearby business or municipality, or is entrusted to the qualified and legal treatment contractors for collection, transportation, and treatment. As to handling wastewater generated during construction process, in addition to installing settling basins at appropriate places, some water are collected and reused after precipitation to reduce freshwater consumption, if 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 being collected, or be emitted after treatment and meeting discharge standards by our contractor. As to the wastewater generated during the commissioning process, it is collected and treated, and then emitted or recycled according to the amount and quality of the wastewater. Precautions 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 containing chemical liquids or oils is recovered by the original suppliers or entrusted to qualified and legal contractors for treatment. We have never, and will never dispose the water on the construction site.



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Waste

■ Soil and Groundwater Protection at Construction Sites

Item	Measures	Purpose and Outcome
Sewage Plans	<ul style="list-style-type: none"> The design of sewage emission piping was taken into consideration at the planning stage of all the construction sites. Construction site wastewater and sewage are treated with the waste sewage treatment equipment that has been set up by the owner 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	<ul style="list-style-type: none"> Constructed using impermeable materials to prevent wastewater from entering the soil and cause secondary pollution. 	The channels reduce pollution caused by wastewater entering the ground. Additionally, they are also used for collecting and sorting wastewater and rainwater on construction sites.
Domestic wastewater	<ul style="list-style-type: none"> Septic tanks are installed. Discharged into the sewage systems of nearby business or municipality. Entrusted to qualified and legal treatment contractors for collection, transportation, and treatment. 	These measures reduce the pollution caused by wastewater entering the soil directly. Toilet sewage is collected in septic tanks and removed regularly by legal contractors to avoid overflowing of septic. As to other domestic light sewage, they are discharged into the sewage system.
Wastewater from construction	<ul style="list-style-type: none"> Settling basins are installed. After the settling process, the supernatant is extracted for sprinkling on the construction site. If the wastewater does not contain harmful ingredients and is not unclean, it is collected and reused. If it contains harmful ingredients or is unclean, it is either treated at the construction sites, or it will be emitted after treatment by contractors to meet the standard of discharged water. 	Prevent the wastewater from construction from directly entering the soil. The wastewater is collected and sorted with treatment equipment, and the reusable water is reused.
Wastewater generated from commissioning process	<ul style="list-style-type: none"> Wastewater is collected according to water quantity and quality for discharge or reuse. 	These measures prevent wastewater from directly entering the sewage system. The wastewater is sorted based on water quality for reuse or emitted via pipelines that are legally compliant.
Machinery maintenance	<ul style="list-style-type: none"> For regular machinery maintenance, oil changes are not allowed on construction sites, so that oil dripping and pollution during the oil change process can be prevented. Before machinery and construction vehicles leave construction sites, they are required to be cleaned and ensure no mud remains by using sprinkling equipment or washing pools. 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 the leakage of heavy oil.

The general waste disposal method of the headquarters building is incineration. The amount of waste generated in 2021 is 56.3 metric tons, down 4.2 metric tons from a year earlier. Paper, metal, plastic, and food waste are all recycled. In response to the increasing amount of lunchbox waste during lunchtime, we launched the recycling of paper 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 to improve management and prevent waste of materials. The waste that may be generated on the construction site includes: domestic garbage, generally harmless construction waste, hazardous waste, waste soil, and building demolition residue. General household garbage and those that can be combined with general wastes for removal or treatment shall be sorted and collected first. They are stored in appropriate containers and then entrusted to the municipal cleaning unit for disposal. For the treatment of waste soil, hazardous industrial waste, and toxic substances, CTCI also entrusts qualified and legal contractors to take full responsibility for the disposal. 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 on the construction site, and the storage of toxic substances is minimized as much as possible. For radioactive wastes, appropriate isolation is applied according to the intensity and danger, and the radiation shall be blocked from exposure to the human nearby. Measures are taken to avoid floating dust, fallout, and rainwater runoff. When the transportation and storage of toxic chemical substances become necessary, strict regulations need to be followed, and these chemicals must be stored in isolation. 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 a large amount of leakage of toxic substances, we 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 production intensity in the headquarters building is 30.2 kg per person, and 81,384 kg per million man-hours in the global construction sites.

■ Amount of Waste Production

Region	Type	Unit	Annual Performance				Goal		
			2018	2019	2020	2021	2021	Achieved or not	2022
Headquarters Building	Regular waste	kg	54,943	64,760	60,495	56,307	56,615	○	49,908
Global Construction Sites	Regular waste	kg	2,960,372	739,691	924,856	1,720,184	3,280,584	○	3,268,390

Notes

- ① The general waste on the construction sites is entrusted to the local cleaning business for treatment. Weighing measurement was implemented in 2018, which is why there is no statistical data before 2017.
- ② No chemical reaction happened during construction that would have produced intermediates, so no hazardous waste was generated.
- ③ The targets are set based on the estimated number of staff in the headquarters and the estimated working hours at the sites.

■ The waste disposal method of the headquarters building

	Unit	2018	2019	2020	2021
landfill	kg	0	0	0	0
incinerating	kg	54,943	64,760	60,495	56,307
others	kg	0	0	0	0
unknown	kg	0	0	0	0

■ The waste disposal method of the Global Construction Sites

	Unit	2018	2019	2020	2021
landfill	kg	0	0	0	0
incinerating	kg	2,960,372	739,691	924,856	1,720,184
others	kg	0	0	0	0
unknown	kg	0	0	0	0

■ Resource Recycling Results

Region	Type	Measures	Result (kg)			
			2018	2019	2020	2021
Headquarters Building	Paper	<ul style="list-style-type: none"> Encouraging the use of recycled paper Installing paper recycling bins 	13,840	15,010	14,020	12,060
	Metals	<ul style="list-style-type: none"> Installing recycling bins for recycling resources 	185	235	255	288
	Plastic	<ul style="list-style-type: none"> Installing recycling bins for recycling resources 	294	351	271	429
	Kitchen Waste	<ul style="list-style-type: none"> Installing bins for food waste recycling 	7,000	5,355	4,678	4,786
Global Construction Sites	Scrap iron	<ul style="list-style-type: none"> Resource Recycling 	3,918,941	1,748,086	322,645	155,870
	Wood	<ul style="list-style-type: none"> Resource Recycling 	0	0	15,000	653,210
	Paper	<ul style="list-style-type: none"> Installing recycling bins for recycling resources 	0	0	0	0

Notes — There is no data because we let non-profit operators recycled all resources, as a way for us to giving back the local community.

Prevention & Control of Noise

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 the engineering construction may cause public protests, special attention will be paid to pollution prevention and public protest prevention and handling. 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, to be handled, tracked, and inspected, and to be sent regularly to the project managers for review. High-noise operations are performed away from the 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. Pile driving is conducted using noiseless methods when there are concerns about noise pollution, or is to be done at appropriate hours of the day. Nighttime construction would be avoided whenever possible. Drivers of vehicles outside construction sites need to follow instructions and are audited regarding the potential generation of noise by said vehicles. 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 and low-pollution forms of transportation. For example, energy-saving sea transportation is preferred over air transportation. 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 engineering design takes into account the potential negative impacts on local species, habitats and ecosystems. While implementing the project, we insist to select proper locations, circumvent important protected zones and special habitats, and avoid endangering local endemic and endangered species. We promise that, while conducting our project, we would reduce the interference to the ecosystem, conserve the environmental quality, and protect the ecological area and creatures. We shall regularly monitor the environmental factors such as noise, vibration, air, and drainage water at the construction site to ensure the maintenance of the original habitat of organisms. CTCI formulates response and pressure indicators to ensure the actual implementation progress in line with our commitment and extends this commitment, performance indicators, and objectives to suppliers at and above the first tier.

In order to lower the impact on the ecosystem, in addition to the existing improvement measures on the construction site (such as avoidance, mitigation, restoration, and compensation), CTCI also expects to consult the personnel or institutions with ecological background during the discussion and formulation of construction specifications in the design stage, provide professional suggestions, assist in ecological data collection, ecological investigation and evaluation, ecological conservation measures, monitoring of ecological conservation measures, and refine the existing improvement measures, increase ecological restoration and timely adjust ecological conservation measures.

Affected environmental factors	Improvement measures to mitigate the impact	Contribution to biodiversity conservation	Biodiversity metrics
Air	<ul style="list-style-type: none"> Set up containment facilities and sprinkle water regularly to reduce dust 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 Video surveillance equipment shall be set at the entrance and exit of the work area to ensure the cleanness of transport vehicles Select excellent transportation tools and construction machines and tools, and maintain them regularly to reduce the exhaust gas and meet the effluent standards 	<ul style="list-style-type: none"> Avoid air pollution, hindering plant growth or causing death 	<ul style="list-style-type: none"> Regular air quality monitoring (PM10) Investigate the plants in the area, compare them with those before construction, find out the causes of impact and improve them Plant endangered native plants
Ocean	<ul style="list-style-type: none"> 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 Strengthen the maintenance of construction machines and tools and transportation tools to avoid oil pollution of water quality Discharge the construction workers' living wastewater after sewage treatment to reduce water pollution Set up a rainwater intercepting system to collect the polluted rainwater generated by ground pollutants to avoid directly flowing into the drainage system and polluting the seawater quality 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 	<ul style="list-style-type: none"> Prevent seawater and river water from being polluted by chemicals and affecting the growth of aquatic organisms Prevent the rise of sea water temperature and affecting the survival of coral, fish and other marine organisms 	<ul style="list-style-type: none"> Regularly detect the discharge water (pH, water temperature, ammonia nitrogen, nitrate nitrogen, BOD, number of Escherichia coli, etc.) Monitor changes in water quality related data Strengthen sewage treatment facilities (improve sewage treatment system and specific sewage collection) to reduce the impact on water quality Investigate the biological species and quantity in the area, compare with that before construction, if there is any reduction, find out the cause of impact and improve it
Noise	<ul style="list-style-type: none"> Use machines and tools with low noise or silencing equipment Use temporary noise insulation facilities for construction machines and tools with high noise to reduce the impact Improve road conditions and reduce noise caused by vehicle vibration 	<ul style="list-style-type: none"> Reduce the interference of noise to local organisms 	<ul style="list-style-type: none"> Noise monitoring (Leq, Lx, Lmax) Investigate whether the animals near the work area have been reduced or disappeared due to noise Strengthen noise control measures
Vibration	<ul style="list-style-type: none"> Construction machines and tools with low vibration are adopted Avoid truck overload and strictly limit the weight Equipment prone to vibration shall be set in an area far away from sensitive points 	<ul style="list-style-type: none"> Reduce noise caused by vibration Reduce vibration and impact on the soil near the work area 	<ul style="list-style-type: none"> Vibration monitoring (Leq, L10) Regularly investigate whether the animals in the soil near the work area are reduced or disappeared due to vibration Strengthen vibration control measures
Waste Materials	<ul style="list-style-type: none"> General domestic waste and engineering waste shall be cleaned and transported by local cleaning units or professional treatment vendors approved by the government The surplus material management system manages the surplus materials of the engineering so that they can be reused in other projects and reduce waste 	<ul style="list-style-type: none"> Avoid disposal wastes arbitrarily, which would result in soil or water pollution and death of organisms in the environment Reuse of surplus material, reduce waste and pollution caused by manufacturing materials 	<ul style="list-style-type: none"> Regularly check the recycling and discarding of wastes and confirm whether they are treated according to standards Spot check the thorough implementation of the surplus material system

In addition to reducing the environmental burden, CTCI promises to cooperate with the first or higher tier suppliers to actively achieve the goal of zero deforestation during the construction and implementation stage, and will do appropriate forest planting, maintain water and soil conservation, prevent wind, reduce dust and give more living space to all kinds of organisms. Regarding the office paper, vendors with forest deforestation records will not be considered. In the future, renewable paper will be considered.

In future planning, CTCI will consult experts with biological background to adopt more biological friendly measures (such as bird nests, and insect boxes) in the construction stage. In the selection of the supply chain, damage to biodiversity in the workplace or deforestation will be avoided. We look forward to cooperating with the supply chain to make a contribution to the earth and biology.



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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 in an international scale.

Highlights

73 %

Proportion of highly recognized employee engagement

65.52 %

Percentage of job openings filled by internal candidates

9 Consecutive Years

Taiwan HC100 Index
<https://www.taiwanindex.com.tw/news/182>

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 does not discriminate between genders during the selection of talents. Academic ability, 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 2021, there were 461 new recruits, which accounted for 17.28 % of CTCI's total number of employees. Among the new employees, 46.64% were under the age of 30~50. CTCI has recruited a total of 809 new talents in the past three years and have been continuously contributing to the innovation and vitality of the Company.

■ Newly recruited employees

		2019		2020		2021	
		Number of recruits	Percentage of people	Number of recruits	Percentage of people	Number of recruits	Percentage of people
Gender	Male	160	7.35%	94	4.81%	320	16.06%
	Female	45	6.76%	49	7.95%	141	20.86%
Age	Under age 30	122	29.54%	65	19.76%	162	47.93%
	Age 30-50	54	3.58%	57	4.10%	215	14.56%
	Over age 50	29	3.15%	21	2.47%	84	9.85%
Management position	Senior Manager	1	2.94%	2	6.67%	0	0.00%
	Mid-level Manager	9	2.00%	8	1.71%	15	2.77%
	Junior Manager	9	1.17%	7	0.95%	44	5.66%
Non Management position	Engineers	125	10.67%	84	8.56%	280	30.14%
	Specialists	36	10.32%	29	9.48%	77	23.84%
	Technicians	25	36.76%	13	26.00%	45	64.29%
Nationality	Taiwan	191	6.84%	137	5.43%	431	16.56%
	Overseas*	14	28.00%	6	13.04%	30	46.15%
Rate of Newly Employed Individuals**		7.21%		5.56%		17.28%	
Total Number of Recruits		205		143		461	
Average Recruitment Expenses		\$17,765.3		\$15,337.6		\$13,901.1	

Notes

* Includes Malaysia, Indonesia, Philippines, Iran, India, Vietnam, Thailand, United Kingdom, Burkina Faso, Swatini, Hong Kong, and China.

** Recruitment rate: Number of newly recruited employees/ number of employees in the current year.

■ CTCI Global Talent Recruitment Channels

Collaborations with Industry(s) and Academia **11** sessions
 ● Recruitment expositions and briefings in campus(es)
 ● Corporate visitation and special topics lectures in campus(es)

Overseas Recruitment **9** talents from overseas
 ● Active recruitment of top individuals from overseas via human resource agencies campus(es)

Recruitment website **178,352 / +11,000 / +10,000** views
 ● 104 job bank
 ● LinkedIn social network
 ● Facebook social network

The overall turnover rate in 2021 went down from 15.80 % to 13.37 %. The total turnover rate of full-time employees was 9.96 % and the turnover rate of contract and temporary employees was 3.41 %. Among all employees that have quit, their age mainly ranged from Under age 30. Lastly, engineers had the highest turnover rate among all occupational categories. Meanwhile, it was found that 12.58 % of newly recruited employees in 2020 applied for a resignation within a year of employment. The resignation of contract and temporary employees was due to the manpower required for the progress of the project. Projects belong to the operation process of the engineering service industry, which is not easy to control. 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 due to the large scale talent recruitment from the semiconductor, high-tech industry, and foreign companies, remuneration and benefits, career development, and job content are the main reasons for employees' resignation. After taking into consideration the opinions of the employees, the Human Resources Department will put forward a resignation analysis report, give recommendations in the committee meeting, and develop measures to improve correspondingly. These measures are undertaken in hopes of retaining outstanding talents and with the aim of continually improving the retention system. In these two years, in addition to the four-year retention measure, we have launched a restricted stock program to encourage our colleagues to jointly work for the brighter future of the company. The performance appraisal system is divided into A (Potential correlated with annual salary adjustment) and B (Current Year Performance Score correlated with year-end performance bonus). This system 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, hoping to provide them with diversified career development opportunities to prepare for succession as soon as possible apart from substantial financial rewards.

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Employee retention measures are differentiated through employee stock options and "A Program = four-year retention Measures." As a measure to retain talent and motivate colleagues to make all-out effort for constant innovation and growth, we also launched restricted stock awards program that offers free stocks to colleagues in 2021. Comprehensive training and retention measures are implemented through fast learning, salary differences, rotation experience, domestic EMBA, and arrangement for further studies abroad.

■ CTCI Employee Turnover

		2019		2020		2021	
		Number of recruits	Percentage of people (%)	Number of recruits	Percentage of people (%)	Number of recruits	Percentage of people (%)
Gender	Male	317	14.56%	317	16.22%	277	13.91%
	Female	81	12.16%	89	14.45%	80	11.83%
Age	Under age 30	91	22.03%	68	20.67%	72	21.30%
	Age 30-50	167	11.07%	189	13.59%	175	11.85%
	Over age 50	140	15.18%	149	17.53%	110	12.90%
Management position	Senior Manager	4	11.76%	8	26.67%	1	3.70%
	Mid-level Manager	38	8.43%	41	8.78%	59	10.91%
	Junior Manager	52	6.76%	75	10.19%	62	7.97%
Non Management position	Engineers	165	14.08%	191	19.47%	158	17.01%
	Specialists	78	22.35%	59	19.28%	52	16.10%
	Technicians	61	89.71%	32	64.00%	25	35.71%
Nationality	Taiwan	381	13.64%	396	15.69%	346	13.29%
	Overseas areas*	17	34.00%	10	21.74%	11	16.92%
Voluntary turnover rate		6.36		8.95		9.33	
Involuntary turnover rate**		0.67		0.89		0.52	
Ratio of turnover due to poor performance appraisal		-		0.51		0.11	
Contract employee and temporary employee turnover rate***		6.96		5.45		3.41	

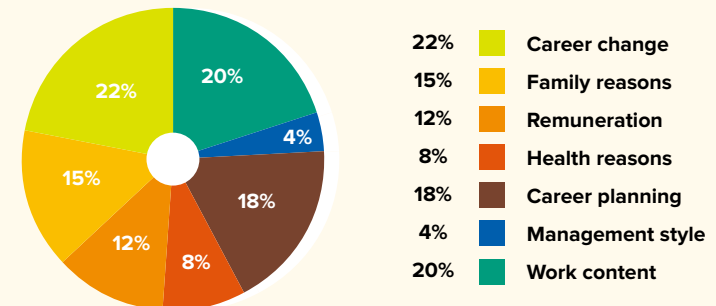
Notes

* The above calculation of turnover rate is based on all employees as the denominator.

** The reasons for involuntary turnover include contract expiration, retirement due to age, death, etc.

*** 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.

■ Distribution of reasons for resignation



Compensation and Benefits

- 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.
- The entry level salary standards for university graduates and masters are reviewed every two years. The salary scale was adjusted in November, 2020 with salary structure adjustments made.
- Encouraged supervisor 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; employees will be granted shares of company stock free of charge at a later date, when vesting requirements are met.
- Other long-term incentive measures.

Career Development

- Implementing 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.
- Providing comprehensive learning development opportunities and sound career planning and implementing the Individual Development Plan (IDP)
- In response to the changes made regarding the strategy of operations, Advanced Technology Facilities Business Operations (ATFBO) was formally established in September 2020 to encourage colleagues to develop expertise outside the engineering field and have learning opportunities.
- Expanding job rotation opportunities and care, arranging job rotations based on staff competencies and interests as well as challenging work opportunities.
- 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.
- Supervisors at all levels take on the roles of Coach, Mentor, etc.

Work Content

- Strengthening employees' functional training and allow them to communicate on the direction of future developments, evenly distribute workload.
- Fortify the communication and dialogue methods among supervisors, for example, during the president symposium and department head meetings.
- The "Town Hall" meeting is held regularly by the top executives of each business unit.
- Supervisors need to arrange an hour meeting with employees every month to assist them in achieving a balance between work and family.
- Offer trainings on coaching and mentoring to supervisors to improve their skills.
- Utilizing CTCI University's training platform to conduct training in various professional, management, and general education courses.
- Continuing the launch of different programs, such as recharging, overseas learning rotations (in the USA) and other plans.



Employee Distribution

In regards to the industrial demographics of CTCI Corporation's employees, male employees are more prevalent in number. In 2021, the total number of employees were 2,668 people (excluding other related companies in the group), of which 1,954 were males and 616 were females. The ratio of female to male employees was 1: 2.95. The majority of the age group ranged from 30 to 50 years old. More than half of the total employees (70.31 %) 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 (46.70 %) 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.

Public engineering is an important project for CTCI's business development. Foreign workers have been hired and assigned to different engineering projects according to the demand for human resource and the changes in strategies. In 2021, there were a total of 280 foreign workers. The demand for foreign workers tends to fluctuate due to factors such as project progress, requirements of the proprietor, and government laws and regulations. The number of foreign workers therefore is not included in the total number of employees of that current year. Nonetheless, it is worthy to mention that all relevant management of foreign workers is handled in accordance with the Labor Standards Act and related regulations.

CTCI is an active participant in overseas projects and the expansion of related businesses, and has been moving towards the goal of "globalization," establishing overseas branches. In addition to employing more than 90% of local employees, CTCI has been gradually cultivating local talents for key local positions and local senior management. In the meantime, it responds to the goal of sustainable development-promoting economic development and assists with employment. It is of great significance to CTCI's global expansion. It also shows the direction of CTCI's global operation.

■ Distribution of CTCI Employees

Type		2019				2020				2021			
		Male	Female	Subtotal	%	Male	Female	Subtotal	%	Male	Female	Subtotal	%
Age	Under age 30	312	101	413	14.53	239	90	329	12.80%	227	111	338	12.67%
	Age 30-50	1,136	372	1,508	53.04	1,056	335	1,391	54.12%	1,112	365	1,477	55.36%
	Over age 50	729	193	922	32.43	659	191	850	33.07%	653	200	853	31.97%
Non Management position	Engineers	963	209	1,172	41.22	790	191	981	38.17%	730	199	929	34.82%
	Specialists	58	291	349	12.28	57	249	306	11.91%	52	271	323	12.11%
	Technicians	66	2	68	2.39	41	9	50	1.95%	50	20	70	2.62%
Management position	Senior Manager	33	1	34	1.20	28	2	30	1.17%	24	3	27	1.01%
	Mid-level Manager	405	46	451	15.86	423	44	467	18.17%	493	48	541	20.28%
	Junior Manager	652	117	769	27.05	615	121	736	28.64%	643	135	778	29.16%
Employment Status	Full-time Employee	1,966	523	2,489	87.55	1,811	505	2,316	90.12%	1,729	523	2,252	84.41%
	Contract Employee	59	15	74	2.60	71	26	97	3.77%	204	61	265	9.93%
	Temporary Employee	152	128	280	9.85	72	85	157	6.11%	59	92	151	5.66%
Place of Work	Taiwan	1,877	651	2,528	88.92	1,734	606	2,340	91.05%	1,812	658	2,470	92.68%
	Overseas *	300	15	315	11.08	220	10	230	8.95%	180	18	198	7.42%
Nationality	Taiwan	2,137	656	2,793	98.24	1,915	609	2,524	98.21%	1,939	664	2,603	97.56%
	Overseas *	40	10	50	1.76	39	7	46	1.79%	53	12	65	2.44%

Notes

* Includes Qatar, India, Indonesia, Arabia, Oman, USA, Thailand, Malaysia, Vietnam, Singapore, Philippines, Macau, and China.

** Includes Malaysia, Indonesia, Philippines, Iran, India, Vietnam, Thailand, United Kingdom, Burkina Faso, Swatini, Hong Kong, and China.

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. CTCI has established an incentive system for employee referral and recruits indigenous people and people with disability. CTCI recruited 11 indigenous people and 32 people with disability in 2021. Among them, 60.87% of the colleagues with disability are entry-level employees or mid-level managers. Meanwhile, 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. This fact shows CTCI's commitment to diversity and inclusion in terms of race and ethnicity. In 2021, CTCI has employees from 12 different countries, which demonstrates that CTCI values talent, respects diversity, demonstrates tolerance, and co-creates a shared international outlook.



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■ Recruitment Group Type

2021	Planned number of recruits	Number of recruited employees	Discrepancy	Recruitment ratio (%)
Indigenous people	27	11	16	0.41
People with disabilities	27	32	Over-recruitment of 5 people	1.19
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.		

2020	Planned number of recruits	Number of recruited employees	Discrepancy	Recruitment ratio (%)
Indigenous people	26	9	17	0.35
People with disabilities	26	29	Over-recruitment of 3 people	1.15
Nationalities of employees (excluding R.O.C. nationality)	10	Malaysia, Indonesia, Philippines, Iran, India, Vietnam, Thailand, United Kingdom, Hong Kong, and China.		

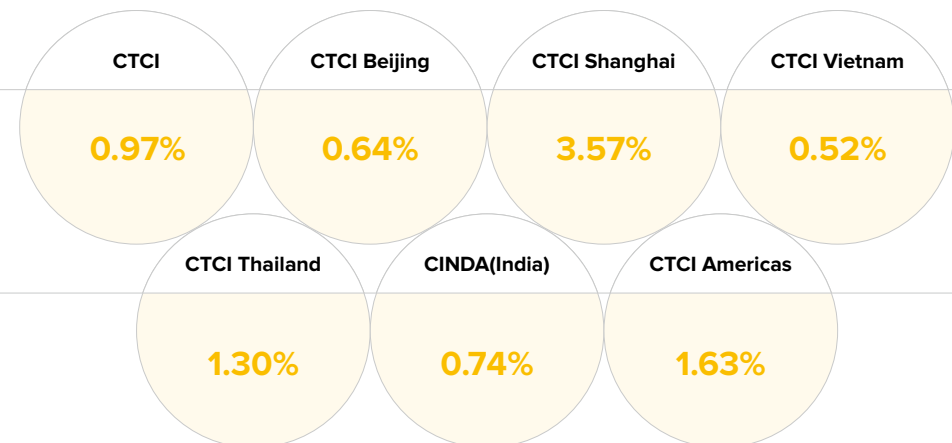
2019 年	Planned number of recruits	Number of recruited employees	Discrepancy	Recruitment ratio (%)
Indigenous people	27	12	15	0.44
People with disabilities	27	31	Over-recruitment of 3 people	1.11
Nationalities of employees (excluding R.O.C. nationality)	10	Malaysia, Indonesia, Philippines, Iran, India, Vietnam, Thailand, Saudi Arabia, Australia, and China.		

Notes 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 (%)		
	2019	2020	2021	2019	2020	2021
Taiwan	98.22	98.2	97.56	98.8	98.71	98.44
India	0.81	0.82	0.71	0.08	0.73	0.59
Indonesia	0.39	0.31	0.75	-	0.24	0.22
Malaysia	0.25	0.31	0.52	-	0.08	0.45
Iran	0.07	0.08	0.07	-	0.08	0.15
China	0.14	0.08	0.07	-	-	0.00
Philippines	0.04	0.04	0.07	-	0.08	0.07
United Kingdom	-	0.04	0.04	-	0.08	0.07
Hong Kong	-	0.04	0.04	-	-	0.00
Thailand	0.04	0.04	0.04	-	-	0.00
Vietnam	0.04	0.04	0.04	-	-	0.00
Swatini	-	-	0.04	-	-	0.00
Burkina Faso	-	-	0.04	-	-	0.00

■ Percentage of senior managers at CTCI & various overseas companies who are locally hired in 2020 (%)



Notes * Senior manager refers to the appointment of local nationals as vice presidents or above.

The engineering industry has a slight unequal gender distribution leaning towards more male employees. This is due to the characteristics of engineering, procurement, construction and operations of the engineering industry. Regardless, CTCI emphasizes that talent is the primary factor when hiring, and that gender is not a factor taken into consideration. The recruiting procedure is open and diverse. Employees' career planning and promotion opportunities are mainly based on the competence and talent suitability.

■ Percentage of female employees and female supervisors (%)

	2019	2020	2021	Goal in 2025
Percentage of female employees (%)	23.43	23.97	25.34	25.00%
Percentage of female supervisors (%)	13.08	13.54	13.82	15.00%
Percentage of female senior executives (%)*	0.08	0.16	0.22	1.50%
Percentage female mid-level managers (%)	3.67	3.57	3.57	4.50%
Percentage of female junior-level managers (%)	9.33	9.81	10.03	12.00%
Percentage of female supervisors at revenue-generating units **	9.09	8.84	9.51	10.00%
Percentage of STEM female staff (%)***	14.43	15.11	16.02	17.00%

Notes

* Definition of executive: Senior executives refers to the position of Vice President and above. Mid-level managers include chief engineer, deputy chief engineer, assistant chief engineer, and senior specialist. Junior-level managers include head of engineer, senior engineer, specialist I, and specialist II.

** Revenue-generating units include EPC Operations (EPCO), Infrastructure, Environment & Power Business Operations (IEPBO), Hydrocarbon Business Operations (HBO), and Plant Maintenance Business Operations (PMBO).

*** 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 9 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 to understand 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 maintain 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.

In terms of identifying abilities, the internal department established a fixed salary structure through the evaluation of positions and work duties suitable for every colleague with no difference in gender. After a promotion, the salary level of the new qualification and salary scale will be applied. At the same time, it links operational performance, departmental performance and personal performance, and repays colleagues' hard work in a fair and reasonable manner, and further strengthen the use of talent retention tools. Regardless of gender, the minimum starting salary for employees in Taiwan is 1.1 times the minimum wage. Salary reviews and salary adjustments are conducted annually according to the market salary surveys, individual position, and performance. The salary structure is divided into a fixed salary and a variable salary. The former is compared with the market, and the latter is correlated with the performance of the department, team, and individual. Apart from the proposed "Four-Year Talent Retention Program-A Program", the

"Restricted Stocks" program has been planned. In 2021, with the support of the Board of Directors and the Shareholders' Meeting, and under the relevant regulations of the competent authority, the first tranche of restricted shares was implemented. Employees are divided into category A and category B: category A refers to senior management and category B refers to ordinary employees; A is for the achievement of the Company's operating objectives and the achievement of the performance objectives of business unit for the most recent year set by the Company B is for the achievement of the Company's operating objectives, and the average AB score of individual performance in the latest year is not lower than the specified score.

The internal department established a fixed salary structure through the evaluation of positions and work duties suitable for every colleague with no difference in gender. After a promotion, the salary level of the new qualification and salary scale will be applied. At the same time, it links operational performance, departmental performance and personal performance, and repays colleagues' hard work in a fair and reasonable manner. In addition, it can strengthen the retention of talents in using tools. Regardless of gender, the minimum starting salary for employees in Taiwan is 1.1 times the minimum wage. Salary reviews and salary adjustments are conducted annually according to the market salary surveys, individual position, and performance. The salary structure is divided into a fixed salary and a variable salary. The former is compared with the market, and the latter is correlated with the performance of the department, team, and individual. Apart from the proposed "Four-Year Talent Retention Program-A Program", the first restricted stock unit program was rolled out thanks to the support of the board and general meeting of shareholders in 2021.

Female/Male Salary Ratio

		Basic Salary	Remuneration
2021			
Management position	Senior Manager	1.04	1.06
	Mid-level Manager	1.00	1.03
	Junior Manager	1.00	0.95
Non-Management	Non-managers (employees)	0.92	0.87
	Engineers	0.97	0.92
Occupational Classification	Specialists	1.02	0.99
	工員職系	0.87	0.89
2020			
Management position	Senior Manager	1.09	1.08
	Mid-level Manager	1.00	1.00
	Junior Manager	1.00	0.97
Non-Management	Non-managers (employees)	0.94	0.91
	Engineers	0.98	0.98
Occupational Classification	Specialists	1.02	1.00
	Technicians	0.89	0.90
2019			
Management position	Senior Manager	1.02	0.99
	Mid-level Manager	0.97	0.97
	Junior Manager	1.07	0.99
Non-Management	Non-managers (employees)	0.94	0.96
	Engineers	0.99	0.98
Occupational Classification	Specialists	1.04	0.97
	Technicians	0.78	0.94

Notes Compensation: basic salary plus bonus, overtime pay, etc.

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.

In response to COVID-19, the flexible diversion of class AB to work has been adjusted since 2020/3/16; class A maintains the original flexible working hours; class B is 8:30~9:30 in the morning, and the off-duty time is 17:30~18:30.

Work from home

- Following the policy of the Group Coronavirus Prevention Center (GCP), the company has implemented the "Work from Home".
- In order to maintain an agile and safe working environment, respond to changes in future work patterns, and attract and retain talents, evaluate and propose mixed office solutions.
- In response to the work needs of the extraordinary period, employees are arranged to work at different times and locations on certain working days. The same work is divided into two groups of people who work at different times/places, and will be replaced every week/two weeks.

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.

Feeding leave

- 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 headquarters building is equipped with a breastfeeding room, which has been certified as a healthy workplace and won the "Excellent Breastfeeding Room Certification" from the HPA.

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.

Stock option

- CTCI Corporation Employee Shareholding Committee" was established to operate employee stock trust funds. By the end of 2021, the total number of participants amounted to 1,716 and the participation rate was 67.9 %.

Group insurance

- The company fully covers health, accident, and occupational hazard insurance.
- Employees can choose additional insurances, e.g. hospitalization insurance, injury from an accident medical insurance, maternity insurance, parents' hospitalization medical insurance, cancer medical insurance, and funeral allowance (the company will cover 60 % of the self-insured insurance premium and employees will pay 40 %).
- Since 2020, self-insured insurances (i.e. hospitalization insurance, accidental injury medical insurance, and funeral allowance), where 40 % of the premium was originally covered by employees, will now be paid in full by the company. Other selective items, which used to be 60 % covered by the Company, are now adjusted to 50 % covered by the Company.
- COVID-19 vaccine and medical insurance, which apply to foreign migrant workers as well.

Language Training

- Subsidy for TOEIC training: half of the cost of every training session will be subsidized for unlimited number of sessions up to NT\$12,000.
- Subsidy for TOEIC exam: the first time an employee applies for a subsidy for the TOEIC examination fee, the date of the test must occur after the employee has joined the company. The test score is irrelevant. For the second time an employee applies for the subsidy (inclusive), the test scores need to be higher than the previous TOEIC score. There are no limitations on the number of times a subsidies can be provided. For those whose TOEIC test results meet the requirement of the Deputy Head Engineer in the company, subsidies will no longer be provided.

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

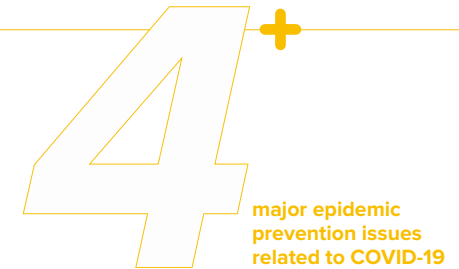
- The company covers fees for certification exams and the annual fee for PMI Association for the first year (NT\$12,000).

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 2021, 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 Unpaid Paternity Leave

	2019			2020			2021		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Number of employees qualified to apply for an unpaid paternity leave in the given year	97	33	130	97	35	132	93	35	128
Number of employees applying for an unpaid paternity leave in the given year	9	13	22	14	17	31	10	18	28
Number of employees anticipated to return to work from an unpaid paternity leave in the given year	9	15	24	15	17	32	11	22	33
Actual number of employees who returned to work from an unpaid paternity leave in the given year	9	14	23	15	16	31	9	19	28
Number of employees still in the company one year after a reinstatement in the previous year	7	24	31	8	14	22	11	12	23
Unpaid paternity leave application rate (%)	9.27	39.39	16.92	14.43	48.57	23.48	10.75	51.43	21.88
Unpaid paternity leave return rate (%)	100	93.33	95.83	100	94.12	96.88	81.82	86.36	84.85
Unpaid paternity leave retention rate (%)	100	88.89	91.18	100	93.33	95.65	73.33	75.00	74.19

Notes — * 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

Information and materials

Response measures

Operation management

In 2020, to ensure continued operations, CTCI established an epidemic prevention center to address and manage four major epidemic prevention issues related to COVID-19: information and materials, response measures, operation management, and care bulletins. Moreover, the center compiled a Business Continuity Plan (BCP). Overseas colleagues can use the company's online SOS medical service to seek consultations or assistance. In addition, CTCI also provided "employee assistance programs" for overseas colleagues and their family members who cannot return home due to the pandemic. We regularly reviewed the severity of the pandemic in every country where we have operations on a quarterly basis, and provide monthly hardship allowance compensation, nucleic acid testing and other expenses, comfort money for diagnosed colleagues, and rewards for colleagues who are unable to return to Taiwan for vacation. CTCI Group Chairman personally wrote letters to the overseas colleagues and their families and gave gifts as a gesture for his care. The human resources department also asked colleagues or family members to send greeting cards or greeting videos to colleagues abroad as a way of comfort. The company's epidemic prevention measures have been well in place, such as providing necessary masks, protective clothing, and information package to help colleagues get access to resources more easily. In addition to basic benefits, CTCI also provided an excellent group insurance package in response to the impact of the COVID-19 pandemic to take care of their expatriates. In particular, travel insurance coverage has been included in the COVID-19-related medical insurance. Some colleagues have contracted COVID-19 overseas during this period, and CTCI has regularly reported, in a timely manner, their medical conditions to their family members, as well as learned about what their family members needed. In short, CTCI took the initiative to care for the health of their colleagues and gives reassurance to family members. In order to strengthen the resistance of colleagues, the "resident doctor" hired by CTCI is also asked to issue nutrition, vitamins and medical care related information to all colleagues, including overseas subsidiaries, reflecting the due action of prevention over treatment. In response to the outbreak of COVID-19 in 2021, in order to reduce the risk of cluster infection in the office, take into account the health of colleagues in the workplace and the safety of the Company's operation,

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Care bulletins

cooperate with the third level measures of the national COVID-19 pandemic alert, we adopted practices such as divided shifts and work from home; adopted checkerboard seating in the office to maintain a safe distance; reduce movement across floors; and gave priority to video conference in meetings. The flexible working hours on weekdays were extended by one hour to avoid the risk caused by the crowd of people taking public transport. In addition, in order to increase the group immunity, CTCI epidemic prevention center offered vaccination incentives. In December 2021, in response to the rapid spread of the mutant Omicron in various countries, we cooperated with the nation's Central Epidemic Command Center to launch the third dose of vaccination measures, contacted external resources, coordinated with the Yangde Neighborhood Residents Center next to the group headquarters, and set up a vaccination station to serve residents and CTCI colleagues. We also worked with medical institutions near project sites in Taoyuan and Taichung to help colleagues in these two regions get their third dose vaccinations.

Period	Pandemic prevention measures	Description
2021/5/15 ~2021/7/26	Work from home	Adopt the method of divided shifts and work from home; adopt checkerboard seating in the office to maintain a safe distance
2021/6/7~6/11	Company rapid test	The registered nurses of the headquarters carried out rapid test operation for the whole group, and completed rapid tests for 739 internal colleagues (all negative)
6/15~6/24	Company rapid test	The medical hospital assisted in the implementation of the corporate rapid test of CTCI group. A total of 3,534 samples were collected Domestic construction site colleagues, including foreign migrant workers, also cooperated with local medical hospitals to carry out all rapid test operations, which are still ongoing
2021/4/7~5/30	Overseas pandemic prevention care	With the rapid rise of the pandemic in India, Indian companies and project sites have confirmed cases one after another. The headquarters health center assisted in the planning of remote medical treatment, set up temporary infirmaries, transported 20 oxygen generators from Thailand to Indian offices and project sites, and was guided by Adani resident doctors, shot videos and taught in local languages. At the same time, the nurses of the headquarters health center produced Chinese manuals to guide the use of oxygen generators and used bilingual education advocacy to launch the physician care service and pandemic prevention health information advocacy for Taiwan and Indian colleagues.
2021/8~2021/12	Rapid test at home	CTCI provided rapid test kits to be done at home and launched self-test at home every month. 5,712 people have completed their tests in five phases.
2021/8/10	Vaccination landing	Working on the health care platform, nurses and supervisors took the initiative to care for and remind colleagues to vaccinate, and nearly 80% of them have received booster shots.
2021/10~2021/12	Incentive for vaccination	The vaccine registration award is completed by the lottery every month, and a total of 1,815 winners are drawn out in three draws.

■ Expat Easypack

- Quarantine taxi fare
- Two PCR testing fees
- Quarantine hotels-Greater Taipei Metro Area:\$3,000; Outside Greater Taipei Metro Area:\$2,000
- Quarantine pack:D-grade quarantine suit, alcohol pads, N95 masks, protective eyewear, gloves)
- 014 paid quarantine time off
- Pandemic relief aid(paid monthly, for relocation only)
- Homecoming bonus for forfeiting time-off during the pandemic (one time disbursement at the beginning of next year. For relocation only)
- Employee Assistance Program(EAP)
Professional Third-party CTCI Group EAP consultation application
24-hour hotline
0800-025-985(including first degree kinship)
E-mail:world.wide.union2@gmail.com
- Compensation for confirmed COVID-19 patients(for traveling and relocation only)
- For overseas emergency health and medical questions, contact SOS global hotline for online consultation with doctors and nurses.
- Travel insurance(for traveling and relocation only)**
In addition to group insurance(maximum \$80,000 or \$700 daily allowance for hospitalization up to 60 days),the company will pay for your business travel insurance.

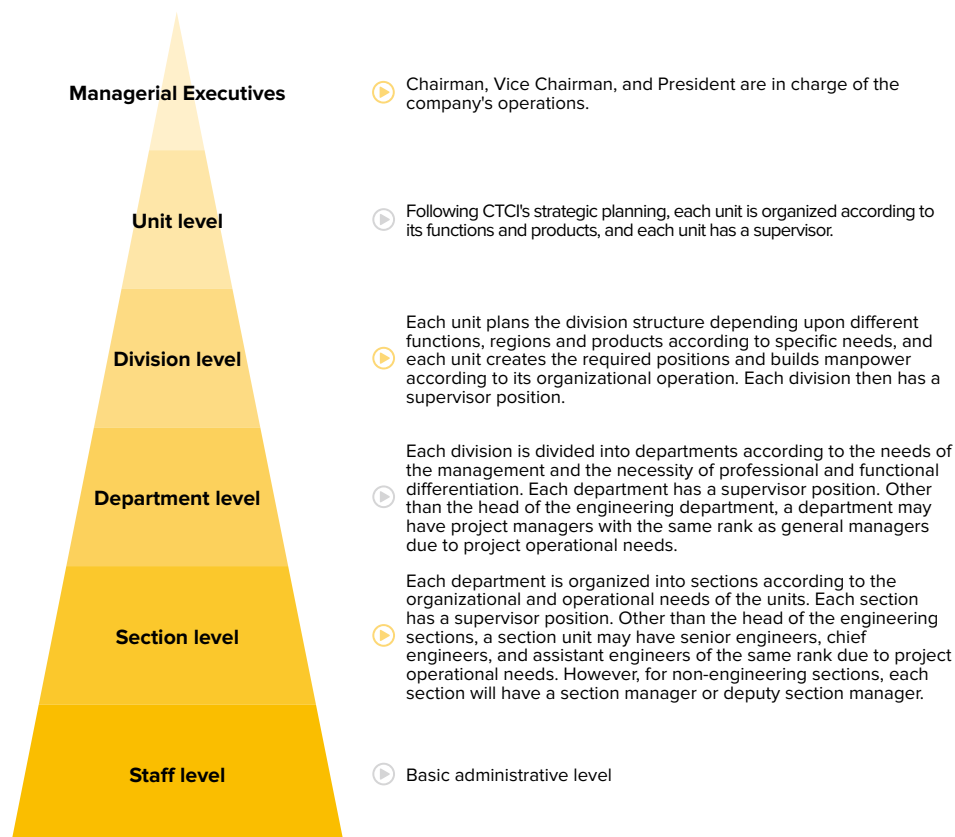
Insurance content	travel insurance / China Life
sudden illness overseas- Hospitalization	\$500,000
sudden illness overseas-hospitalization compensation	\$50,000
sudden illness overseas-Outpatient insurance	\$7,500
sudden illness overseas-emergency insurance	\$75,000

- Expatriate inbound and outbound airfares (including chartered flights)

Career Development and Training

Workforce analysis and planning

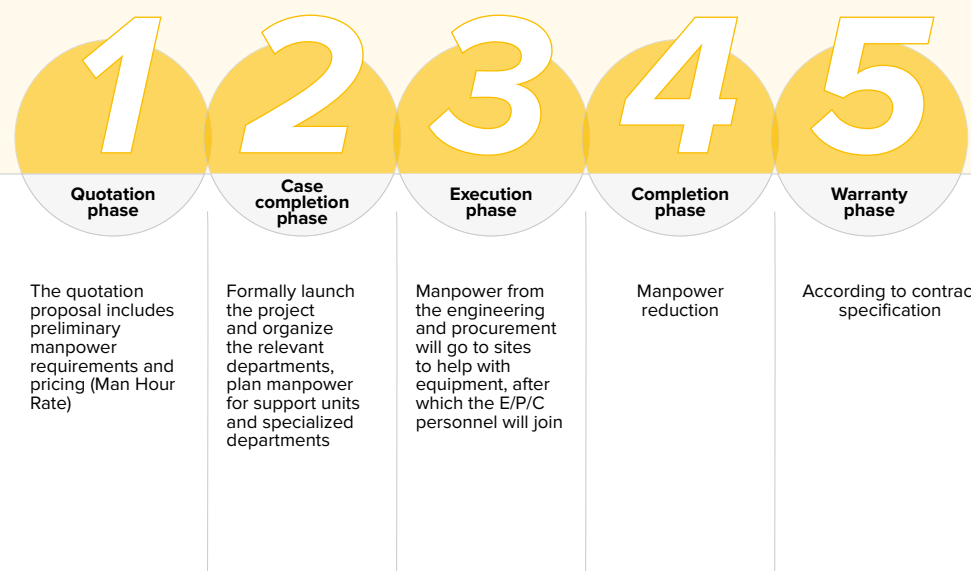
As mentioned earlier, the total number of employees at CTCI in 2021 was 2,668. A stable, balanced employee dispersal is required in such a large corporation for its healthy development. Corporate growth, age, and experience are important indicators in our annual organizational health check. Therefore, in addition to related (organizational management and job development) methods, we also create an organizational structure according to the company's business strategy and developmental needs, while maintaining a certain degree of flexibility to respond to market needs in an agile manner. Building such an agile organization is a major challenge for high-tech business activity. The organizational development structure of CTCI's development plan is as follows:



After the organizational structure is determined, annual manpower need is planned and organizational reviews are conducted while considering external supply and internal training, resignations and retirements, and transfers and assignments for domestic and overseas sites. In addition, we would discuss the differences between the periods and propose various measures and improvements; review and improve the measures to attract and retain talents both externally and internally, and adjust annual manpower planning in March, June, September and December of each year.

With the exception of the back office support, more than 80% of CTCI's staff will be involved in different stages of generating quotations, design and execution of a project. Therefore, from the very beginning of the quotation phase, the staff of the relevant departments will be involved and different "project codes" will be assigned to calculate the costs.

Project Manpower Planning





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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 280 employees. However, at present, there are only 235 employees, making the current manpower composition clearly insufficient. A detailed analysis shows that the proportion of employees with less than one year's experience and those with 3-5 years experience is too low. CTCI has cross-referenced this analysis with the following databases:

- Based on last year's average data for reference.
- External competitive analysis; dynamic changes in environmental factors, such as recruitment by other industries (e.g. wind power sector) or other companies (e.g. technology industry).
- By analyzing the influence of overall employee age, experience, retirement eligibility and Employee Well Being.
- By analyzing the Employee Engagement Survey.
- Others (e.g. the impact of COVID-19 outbreak on CTCI's 2020 operations). Based on the above data comparison and analysis, we propose the following reasons for resignation and measures to improve:

	New employees with less than 1 year experience	Employees with 3-5 years of experience	All employees
Reasons for resignation	<ul style="list-style-type: none"> • Some skill sets are scarce in the labor market. • CTCI is the leader in the domestic E, P, C, and has a unique management model and operation mechanism. Newcomers may thus find it hard to adapt. 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Supervisor's management style and work allocation: no clarity of work content and an unclear organizational division of labor within projects
Improvement measures	<ul style="list-style-type: none"> • 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 firefighting department, which is the only vocational school in Taiwan (WuFeng University Department of Fire Science), as well as grants to encourage foreign language studies for students, and accommodation allowances for those not living in Taipei City/New Taipei City. • Scholarship 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: Aims to invite potential job seekers and contact potential employees who are interested in changing jobs but are not yet actively looking at 104 (Taiwan's job search website). • By applying new technology in daily work, CTCI builds industry-university collaboration on special themes with famous schools, departments and professors within the country and abroad. • 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. 	<ul style="list-style-type: none"> • 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. • Outsource work to group affiliates, subcontractors or third parties. • Company transformation: Expansion of high-tech facilities, big data analysis, diversification of technology and market planning. • Family considerations: Short-term housing assistance, employees with babies can apply for flexible work from home. • Remuneration factors: Adjusting salary structure or bonus for important positions or important professional skills, and proposing measures to retain talents and provide substantial subsidies. 	

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 a 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.

Management by objectives

All employees (The management and employees have different indicators.)

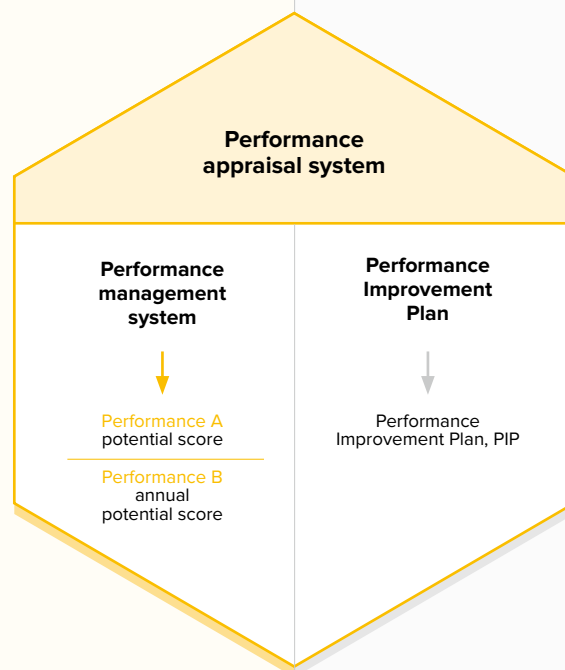
Mode of operation

The objectives in the performance management system are divided into departmental and project goals. The department's supervisor assesses the goal of the department and the project manager assesses whether project achievement status is met or not, in order to meet the objectives of continuously improving employee performance and achieving operational performance of the business units.

the A score is linked to annual salary adjustment target, and the B score to the current year's end bonus. Regardless of the scores of A or B, in addition to the fixed distribution ratio, the head of the business unit (BU) will finalize and decide the final salary structure.

Description

- 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%.



Management by objectives

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 every month.

Description

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 three years are as follows:

Counseling year	Examination year	Employees in PIP	Outcome			
			Dismissal	Resignation	Completed counseling	Continues counseling
2018	2017	17	2	3	10	2
2019	2018	14	0	2	12	0
2020	2019	13	4	2	0	7
2021	2020	9	1	1	0	7

In order to conduct performance interviews between supervisors and colleagues, we would run a performance interviewing skill course every year. We also focus on the issues and communication models that are of concern to millennial employees, aiming at effective two-way communication. In addition, the Human Resources Department will take the initiative to identify those with a big difference between A and B scores, and interview and encourage them to strengthen communication among colleagues. In order to enable them obtain a more precise picture on their input and performance, the performance evaluation system is made open to employees for inquiries on their supervisor's feedback and we would initiate an annual performance discussion. These policies are aimed at creating opportunities for two-way communication and the results serve as valuable references in the pursuit of their goals and personal development. KPI across the board will begin in 2020. KPI optimization briefings will be organized to assist departments in setting more specific and practical goals. We also expect supervisors to meet with each employee for one hour every month, so that we can actively care for our employees and communicate with them about their work status. In doing so, not only can we provide feedback on their performance, but can also enable them understand their future responsibilities more concretely and in an enriching way.

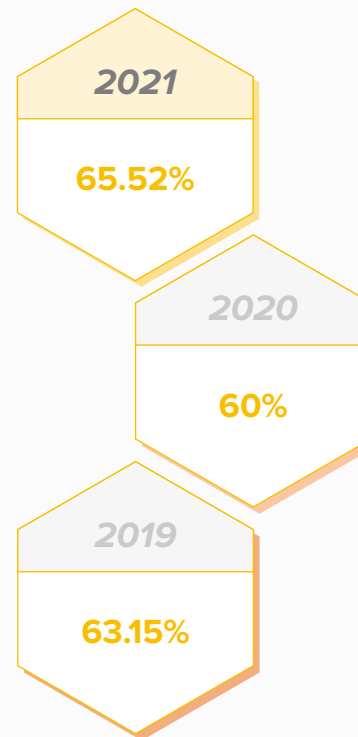
As for career planning, in order to strengthen talent nurturing and use human resources effectively, an internal rotation platform is established to enhance the internal development opportunities of talents, and appropriate mechanisms are set up for position rotation according to colleagues' personal career planning.

There are two types of job rotation: the first type is colleague/department-initiated 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, and 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 entire group to use.

Ratio of job vacancies filled internally



Overview of internal staff replacement

		2019	2020	2021
Type	Total percentage of job openings filled by internal candidates	63.15%	60%	65.52%
Gender	Male	91.67%	75.00%	84.21%
	Female	8.33%	25.00%	15.79%
Age	Under age 30	25.00%	8.33%	10.53%
	Age 30-50	75.00%	91.67%	84.21%
	Over age 50	-	-	5.26%
Occupation	Junior Supervisor	8.33%	-	42.11%
	Mid-level Manager	-	-	-
	Senior Manager	-	-	-
	Engineer	91.67%	100%	57.89%

Competence development

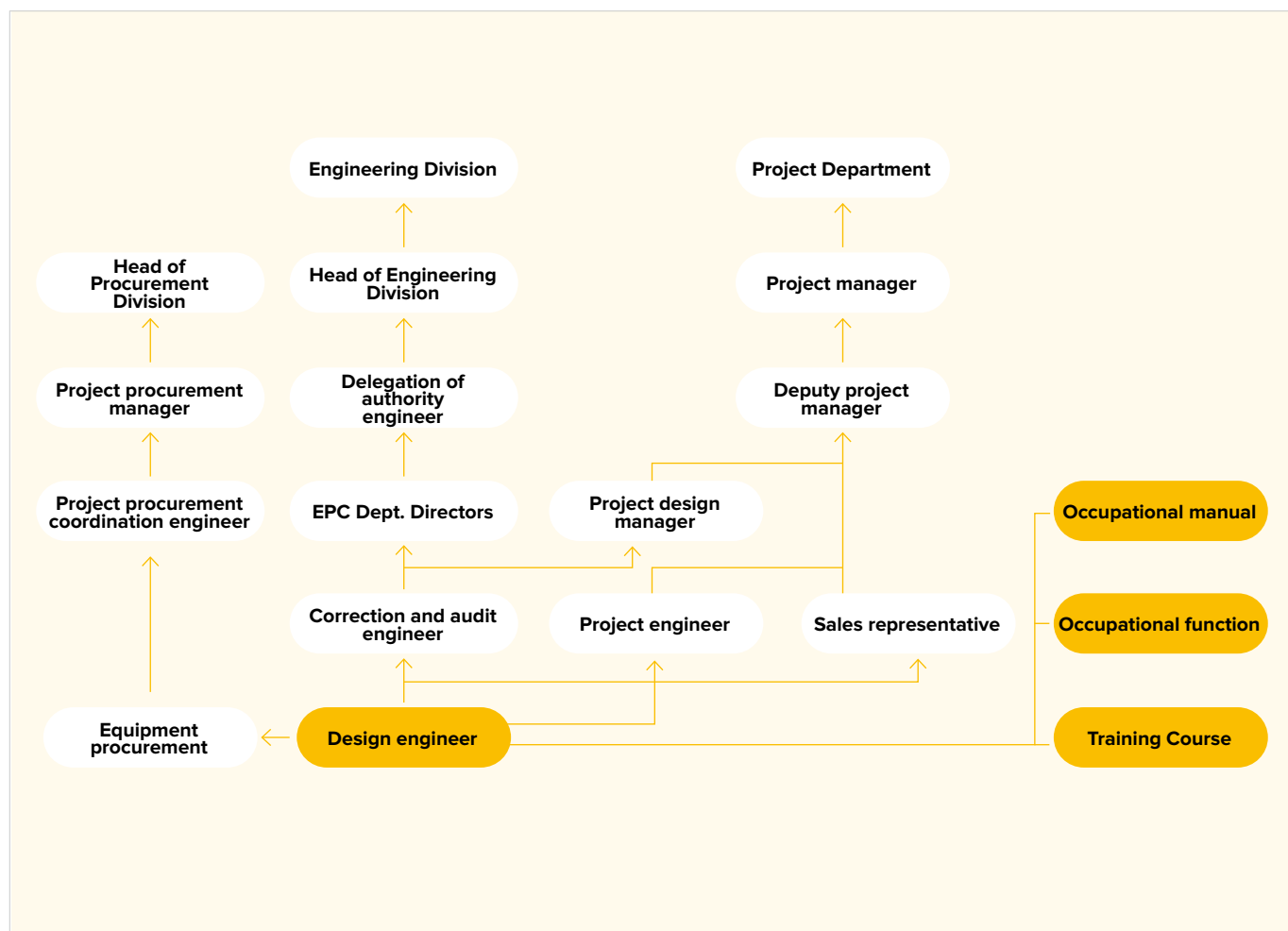
CTCI actively invests resources in talent cultivation, hoping to attract like-minded professionals, and makes an overall plan on comprehensive education and training, trains new talents, and provides professional training for different categories. In addition to assisting each employee's career development 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 and share CTCI's corporate culture and heritage. 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 2021, the in-place rate of knowledge assessment is 81.0; in the future, evaluation will serve as a mandatory prerequisite for promotions, rotations, and transfers.

Function centered

Design function-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 the effectiveness of the curriculum.

Position centered

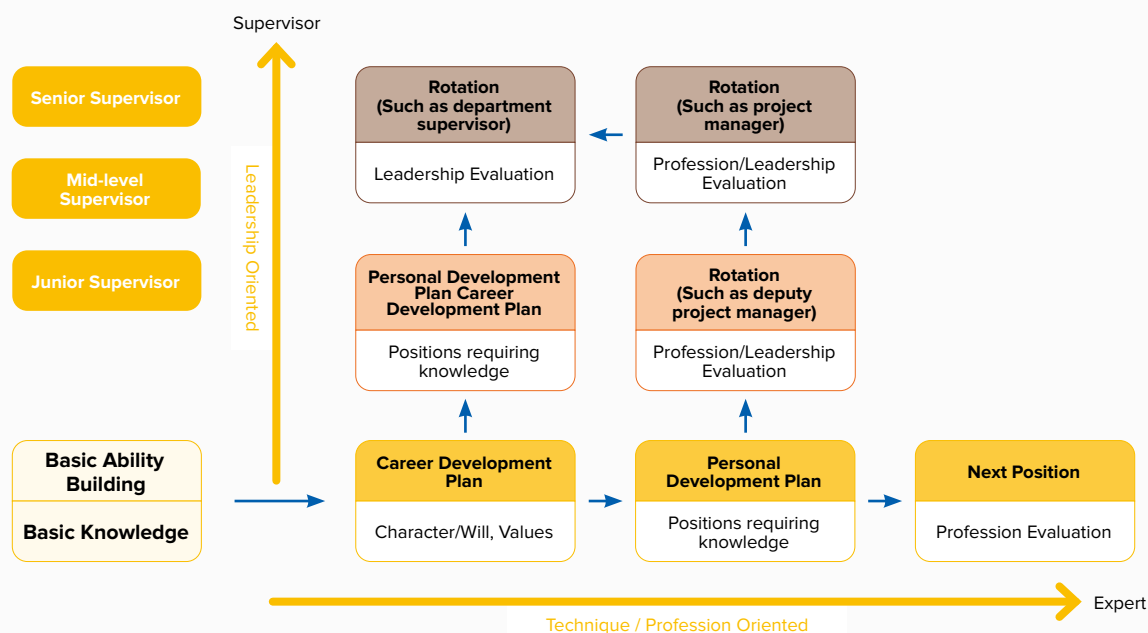
The positions clearly define the R&R, and starting from there, one can see the qualities required and development inputs needed for training; everyone can see the course of their development and career development path.



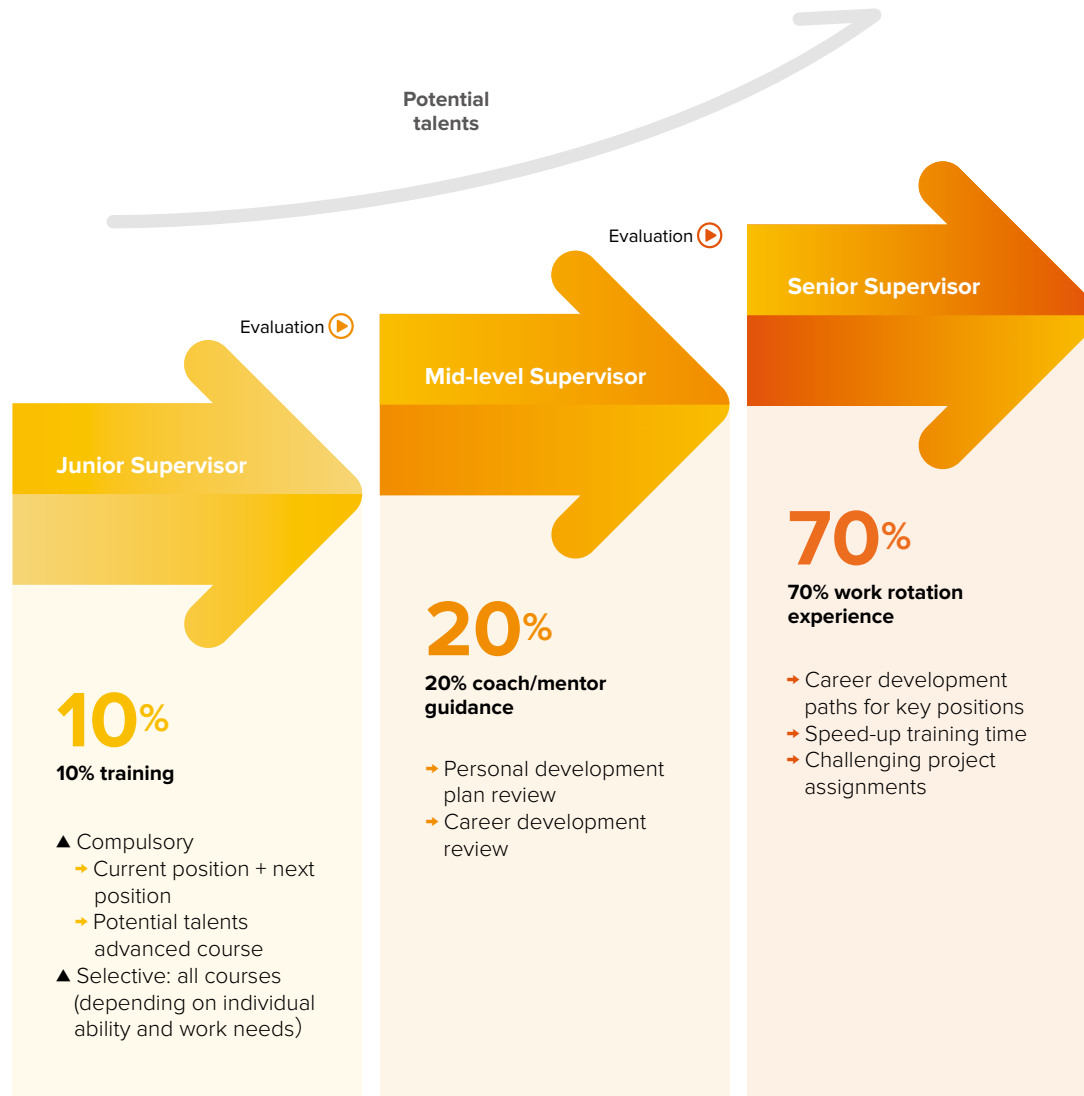
Talent Cultivation

- In relation to individual development plans for those primed for key positions, not only do we encourage our employees to enhance their own knowledge, skills and attitude, they also can understand their own strengths and weaknesses by communicating with workplace mentors, and improve competitiveness in diverse ways. This will enhance our overall employee competitiveness and benefits both the development of our employees as well as the Company, while also building a work environment that is not constraining and has boundless opportunities for growth.
- In elite talent training, the Group's key positions, high potential and potential youth (Young-Po) are identified and listed according to its future development needs and capabilities. Their past performance is then considered in the stage of screening.
- In 2020, 15 employees were identified as Young-Po Plus, the age defined as being under 35. In addition to their learning ability, we have obtained full details of their performance, English ability and personality. CTCI hopes to nurture overseas management talents over the next 10 years. The Group Chairman acted as the "Group Mentor", sharing his valuable experience and life lessons through face-to-face communication with young, high-potential employees.

The first stage is to conduct 360-degree and leadership potential evaluation in order to understand the candidate's strengths and weaknesses, and set out training and provide mentoring and coaching programs accordingly. With the help of external consultants, the candidate's highest supervisor has to tailor-make development projects, including career planning and development. 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. 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 well-rounded leader. From 2020 to 2021, we continue to arrange additional elite talents for evaluation. As a result, we are able to propose a customized IDP for potential candidates that meets their individual needs.



	LII	GLI	LPEI	Total
2018	288	45	-	333
2019	-	22	186	208
2020	-	5	153	158
2021	-	1	58	59
People/ Subtotal	288	73	397	758
Amount	345,600	657,000	1,191,000	2,193,600



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: 95%
- Every year** Professional competence completion rate: 92%
- Every six months** Reduce the quality loss rate: Over 80 points



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Training effectiveness

2019		2020		2021	
Total cost of training	Average training fees	Total cost of training	Average training fees	Total cost of training	Average training fees
15,272,406	5,371.93	10,557,173	4,107.85	10,050,630	3,767.10
Total training hours	Average hours	Total training hours	Average hours	Total training hours	Average hours
230,256	80.99	175,431	68.26	177,040	66.36

Occupational classification	2019				2020				2021			
	Total training hours		Average hours		Total training hours		Average hours		Total training hours		Average hours	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Senior Manager	984	37	29.82	37.00	1,060	96	37.86	47.75	414.5	20	17.27	6.67
Mid-level Manager	13,044	941	32.21	20.46	25,547	2,768	60.40	62.90	29,716	3,192.5	60.28	66.51
Junior Supervisor	22,205	5,463	34.06	46.69	39,706	4,918	64.56	40.65	36,850	9,595	57.31	71.07
Engineer	145,146	30,399	150.72	145.45	71,213	22,006	90.14	115.21	74,756	15,367.5	102.41	77.22
Specialists	2,146	8,430	37.00	28.97	1,481	6,284	25.99	25.24	801.5	5,708	15.41	21.06
Technicians	1,413	48	21.41	24.00	312	41	7.60	4.50	460	159	9.20	7.95
Total	184,938	45,318	84.95	68.05	139,319	36,111	71.30	58.62	142,998	34,042	71.79	50.36

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:

■ Evaluation of Training Effectiveness

		Level	
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.	<ul style="list-style-type: none"> ➔ Reduce development cost for key personnel ➔ Reduce turnover cost for new employees ➔ Reduce quality rework cost 	Level 5
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.	<ul style="list-style-type: none"> ➔ Internal employee promotion rate 19.53% ➔ 1~3 year employee promotion rate 42.86% ➔ 3~5 year employee promotion rate 34.4% ➔ Key personnel retention rate 81.7% (target rate 95%) 	Level 4
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.	<ul style="list-style-type: none"> ➔ Professional expertise achievement rate 81%(target 92%) ➔ Low design quality missing rate 85.6 points (target >80) ➔ Defect rate 90.6 (target > 80) ➔ SOJT Completion Rate 95.03% 	Level 3
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.	<p>Annual training plan achieved 94%</p> <p>Average score from all training courses (*) result 94.49</p> <ul style="list-style-type: none"> ➔ Learning effectiveness evaluation, including tests, field operation, simulated practice, learning reflection, report, action plan after class, instructor evaluation. 	Level 2
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.	<ul style="list-style-type: none"> ➔ Training Completion Rate 97.35% ➔ Training Satisfaction Rate 93.88% 	Level 1

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		2019		2020		2021	
Level	Particulars	Results	Total Score	Results	Total Score	Results	Total Score
Return on investment (ROI)	Reduce key position development costs (NT\$)	\$218,376	8.07	-\$20,007,473	7.81	-\$35,397,837.38	8.32
	Reduce the cost of new employees (NT\$)	-\$140,180,625		-\$127,408,613		-40,185,113	
	Reduce quality rework costs (NT\$)	-\$6,360,000		-\$61,480,000		-\$59,260,000	
	Employee productivity (NT\$)/person	\$10,000,117.13		\$10,067,614.79		\$11,537,537.11	
	Human capital return on investment (%)	8.09		8.12		9.09	
Results	Key position retention rate (%)	95.1		85.9		78.9	
	External customer satisfaction (score)	78.3		82.90		81.80	
	Total employee turnover rate (%)	7.03		10.35		9.96	
	New employee turnover rate (%)	19		18.18		12.58	
	Internal employee promotion rate (%)	16.36		18.25		19.53	
	1-3 years employee promotion rate (%)	34.22		40.51		42.86	
	3-5 years employee promotion rate (%)	20.80		25.73		34.4	
Behavioral assessment	Achievement rate of professional competence (%)	98.39	8.07	97.95	7.81	81.00	8.32
	Low design quality rate (%)	79.4		74.20		85.60	
	Low-quality event rate (%)	87.5		85.70		90.60	
	SOJT completion rate (%)*	95.00		94.96		95.03	
Learning	Average learning evaluation results of each training course (minutes)	93.50	8.07	94.86	7.81	94.49	8.32
	Annual training plan completion rate (%)	99.46		97.35		94.00	
Reaction	Average completion rate for each training course (%)	98.18	8.07	97.24	7.81	97.35	8.32
	Average employee satisfaction rate of each training course (%)	93.15		93.85		93.88	

Notes SOJT : Structure On-the-job-Training, which aims to provide the employees who still need to improve their skills with professional attitude and ability required for independent operation. In addition to training courses, the department assigns a mentor during daily operations to impart necessary knowledge, skills, work methods and other tasks.
The SOJT completion rate refers to those who have mastered professional skills after completing the SOJT training program.
We use Kirkpatrick's four level training evaluation model to evaluate the training effectiveness, and then connect it with the corporate operation results to review the return on investment after training.
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

In 2021, 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.

Project Name	Content and Objects	Benefits and Impact on CTCI	Kirkpatrick Training Evaluation Level
Elite Talent Rapid Growth Plan	<p>Target: Elite talents at key positions Content:</p> <ul style="list-style-type: none"> ➔ 360-degree leadership potential evaluation ➔ Professional consultant one-on one explanation and feedback ➔ Discuss development plans with coach ➔ Set up a learning journey course and regularly review its effectiveness ➔ Arranging a senior executive as a mentor to assist in enhancing one's perspective and accelerate development <p>Action Learning: Learn from doing and apply skills learned to work</p>	<p>Advantages of training:</p> <p>A total of 21 sessions with 16 classes each. There were 1591 participants with a total of 2302 training hours.</p> <p>Benefits to business:</p> <p>Nurture talents with potential in a planned manner, develop them systematically and quickly through individual development plans, and reserve talents that meet the long-term needs of the organization.</p> <ul style="list-style-type: none"> ➔ Key position retention rate: 78.9% 	<p>Comparison of Kirkpatrick Training Evaluation Level</p> <p>Level 4 - Result assessment: Our goal of developing a Managing Director for our affiliated companies (including overseas) within 10 years of appointment, In 2021, four will be sent overseas as overseas general managers to experience related management work experience.</p> <p>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.</p> <p>Level 2 - Learning assessment: The average course pass rate is 100%</p> <p>Level 1 - Reaction assessment: Average satisfaction grade after the course: 4.65</p>
Agile Project Management Team Development	<p>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:</p> <ul style="list-style-type: none"> ➔ 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 quickly. ➔ 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 	<p>Benefits to business:</p> <p>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 people with potential for cooperation, flexibility, a will to learn and a positive attitude.</p> <p>Since this project is a "cross-country teamwork" project led by the Taiwanese team and executed by CTCI, cross-cultural communication and teamwork is one of our constant endeavors.</p> <p>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.</p> <p>High tech facilities are changing rapidly. Therefore, inviting experts and scholars in relevant fields to communicate regularly is the key project of all staff learning activities.</p>	<p>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%.</p> <p>Level 3 - Behavior assessment: Change the workflow and work methods up to 100% to respond to the needs and changing responses of the owner.</p> <p>We have changed the existing sign-off process to significantly save time, and are committed to reducing communication costs and responding to regular and occasional requests and reports from the owner to keep up with the pace of the industry.</p> <p>Level 4 - Result assessment: We received the first design project from the owner within three months, and then received the second development project from the owner at the end of the year to improve the company's revenue.</p> <p>Level 5 - ROI assessment: The time period is relatively short, and has not yet been counted.</p>
Expert program refinement	<p>Formulation of the "Colonel - Regimental Commander" system, i.e. Dual Ladder system, for the six disciplines of the Engineering Division.</p> <p>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.</p>	<p>Due to the impact of the COVID-19 pandemic, CTCI has launched the CTCI University online learning platform in a very 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.</p>	<p>Level 4 - Result assessment: Time efficiency improvement: about 30% reduction in man-hour</p> <p>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.</p> <p>Three of the six disciplines saw an increase in the rate of professional competencies.</p> <p>Level 2 Learning assessment: Average after-school learning assessment score: 94.99</p> <p>Level 1 - Reaction assessment: Average satisfaction rating after classes: 4.84</p>

CTCI University

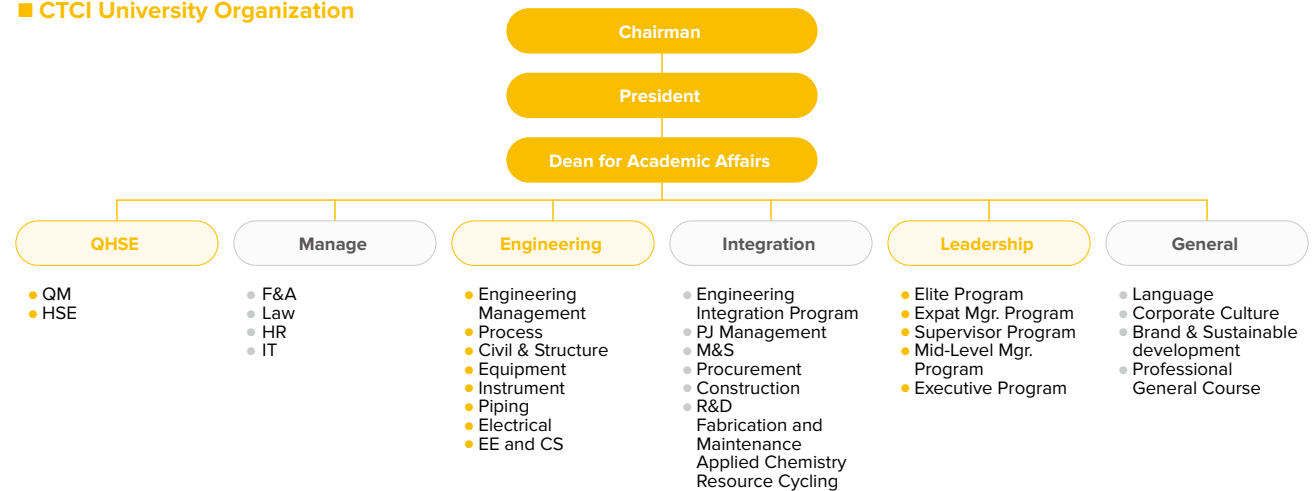
CTCI University, an online learning platform, was officially established in 2020, integrating training resources into a single online platform to pass on our experience and promote sustainable growth. Through comprehensive and professional career education training, we can help and motivate our employees to continuously improve, while at the same time cultivate an international perspective to help them become a global talent with diversified development. Together with our knowledge-management platform and Lesson Learned, we can effectively pass on our experience and serve as a reference to encourage continuous learning. CTCI University has six colleges: the College of HSE, the College of Engineering and Design, the College of Project Integration, the College of Business Management, the College of Leadership, and the College of Co-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. By the end of February 2021, more than 800 digital courses have been completed.

■ CTCI University's four major development directions

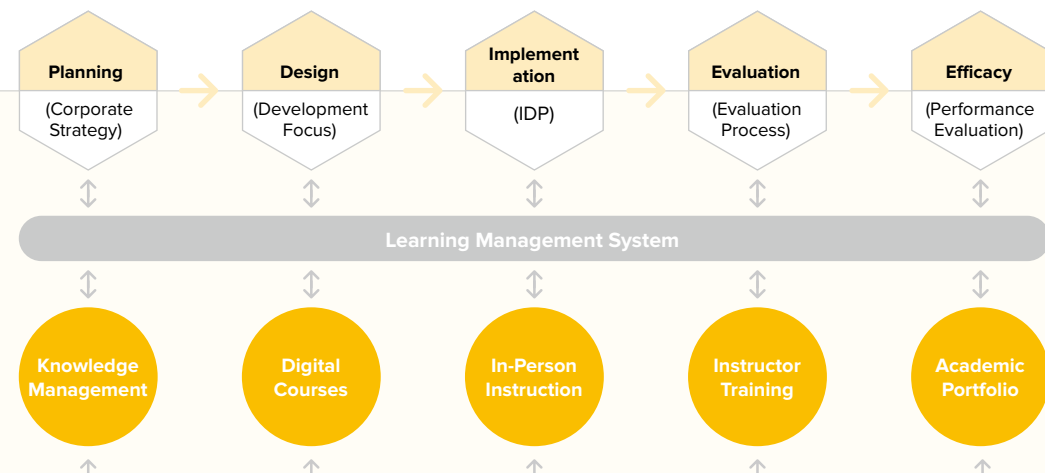
Enhance global competitiveness	Cultivating creative and forward-looking international talents in line with the Group's strategic development needs.
Solidify professional skills and knowledge	Making use of systematic and efficient training programs to pass on knowledge and skills in various areas of expertise, resulting in stronger corporate core
Laying the foundation for leadership and business management	With diversified development as our guiding motivation, we cultivate the leadership echelon and improve key personnel
Brand internationalization and culture promotion	With the goal of sustainable corporate management, CTCI implemented the brand spirit of being "most reliable" and a corporate culture emphasizing "professionalism, integrity, teamwork, and innovation to realize our vision of being "the most reliable global engineering services provider"

Every colleague at CTCI Group is enrolled in an academic department, and has mandatory credits tailored to his/her job requirements, so that the colleagues can quickly and effectively advance toward the goals in their career planning. At the same time, we provide a fast-track talent development plan for outstanding colleagues by initiating an "advanced" system, meaning that once our colleagues complete their relevant courses and certifications, they can move on to relevant courses for the next position (advanced system).

■ CTCI University Organization



■ CTCI University Operating Model



Labor Rights and Human Rights



Human rights management

CTCI's Human Rights Policy (<http://www.ctci.com/www/ctci2016/csr/upload/page/PG1065-F0.pdf>) 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 (<http://www.ctci.com/www/ctci2016/upload/page/PG74-F26.pdf>) 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 2020, human rights issues with potential risks are working hours, safety, and health. Compared with 2018, the risk value increased from 38.52% to 46.30%, mainly due to the impact of overtime and health check tracking issues. 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
CTCI Codes of Ethical Conduct	All employees and employees of contractors	Safety	HSE Risk Assessment	Employees feedback mailbox HR@ctci.com.tw 
	Office staff	Health	Health check-up	
	All employees	Working hours	Work hour management	
	Female employees	Sexual harassment	Sexual Harassment Complaints Handling Committee	
	All employees	Abnormal load	Overwork scale, health checkup, work load / type survey	
	All employees	Workplace violence	Identification and evaluation of wrongful harms	
	Female employees after pregnancy and childbirth	Maternity protection	Workplace hazard identification, personal health risk assessment	
	All employees	Privacy	Reward and Penalty Review Board	
	All employees	Labor-Management dispute	Survey of employee opinions	
CTCI Vendor Code of Conduct	Supplier employees	Health	Supplier sustainability risk questionnaire	External reporting platform https://secure.conductwatch.com/ctci/?Pg=1&Lang=en-US 
	Supplier employees	Safety		
	Contract employees	Forced labor		
Privacy Policy	Customers	Information security and privacy	Information security	
CTCI HSE Policies	Community	Environmental rights and noise	Construction site environmental monitoring	

Human Rights Policies

<http://www.ctci.com/www/ctci2016/csr/upload/page/PG1065-F0.pdf>



CTCI Codes of Ethical Conduct

<http://www.ctci.com/www/ctci2016/upload/page/PG74-F26.pdf>



CTCI Vendor Codes of Conduct

<http://www.ctci.com/www/ctci2016/upload/page/PG1222-F7.pdf>



Accusation management regulation

<http://www.ctci.com/www/ctci2016/upload/page/PG74-F20.pdf>



CTCI privacy

<http://www.ctci.com/www/ctci2016/page.aspx?L=CH&C=1500>



CTCI HSE policies

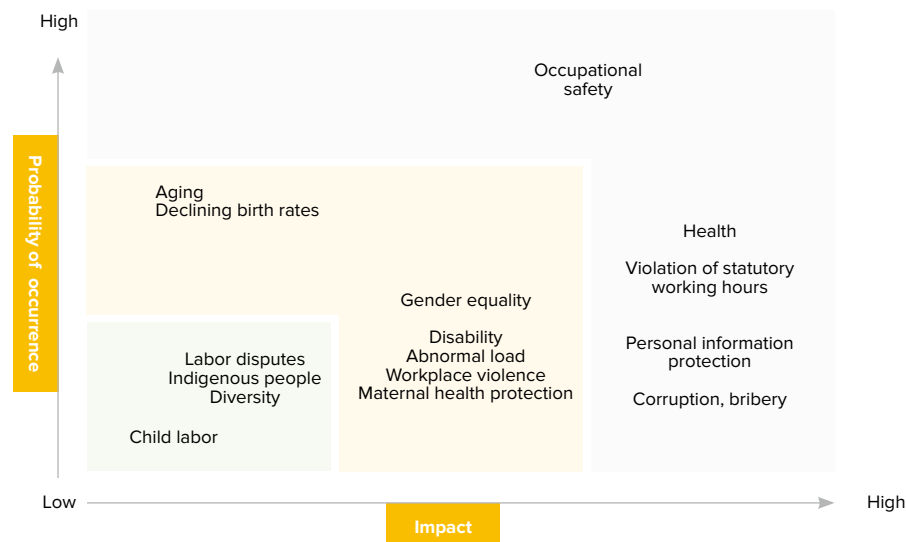
<http://www.ctci.com/www/ctci2022/upload/page/PG45-F7.pdf>





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■ CTCl Human Resource Management Risk Matrix



■ Human rights mitigation and remediation measures

Risk Category	Employees			Suppliers	
	Working hours	Health	Safety	Forced labor	HealthHealth
Mitigation measures	<ul style="list-style-type: none"> Work hour management Health assessment of extended overtime hours 	<ul style="list-style-type: none"> Health checkup to identify high-risk groups Drive workplace health promotion 	<ul style="list-style-type: none"> Convene regular HSE meetings Occupational safety culture promotion HSE assessment 	<ul style="list-style-type: none"> Risk survey: Conduct annual human rights risk survey On-site audit: Complete on-site audits of ten suppliers Corrective measures: Request the completion of improvements within deadlines 	
Remediation measures	<ul style="list-style-type: none"> Provide compensation for overtime Evaluation of return to work and fitness for work 	<ul style="list-style-type: none"> Professional psychologist \ consultation Employee Assistance Program(EAPs) Work fitness arrangement 	<ul style="list-style-type: none"> Occupational hazard application HSE competition 	Suppliers are required to provide "psychological counseling", "compensation" or "system modification" for employees who have suffered from human rights violations.	

■ CTCl Human Rights Assessment

Human rights issues	Subject	Methods of risk assessment	
Sexual harassment	Female	Number of cases	38.52%
Working hours	All employees	Number of individuals who work in excess of statutory hours	2019 Risk value
Safety	All employees	Number of injured workers	
Privacy	All employees	Number of cases	22.88%
Labor-Management dispute	All employees	Number of cases	2020 Risk value
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 women	Number of high-risk individuals who require further tracking in terms of maternal protection in a given year	2021 Risk value
Overwork	All employees	Number of cases	

■ Human rights training

	2019	2020	2021
Male	80	47	160
Female	22.5	24.5	70.5
Total	102.5	71.5	230.5
New employees trained as a percentage of all employees	7.21%	5.59%	17.28%

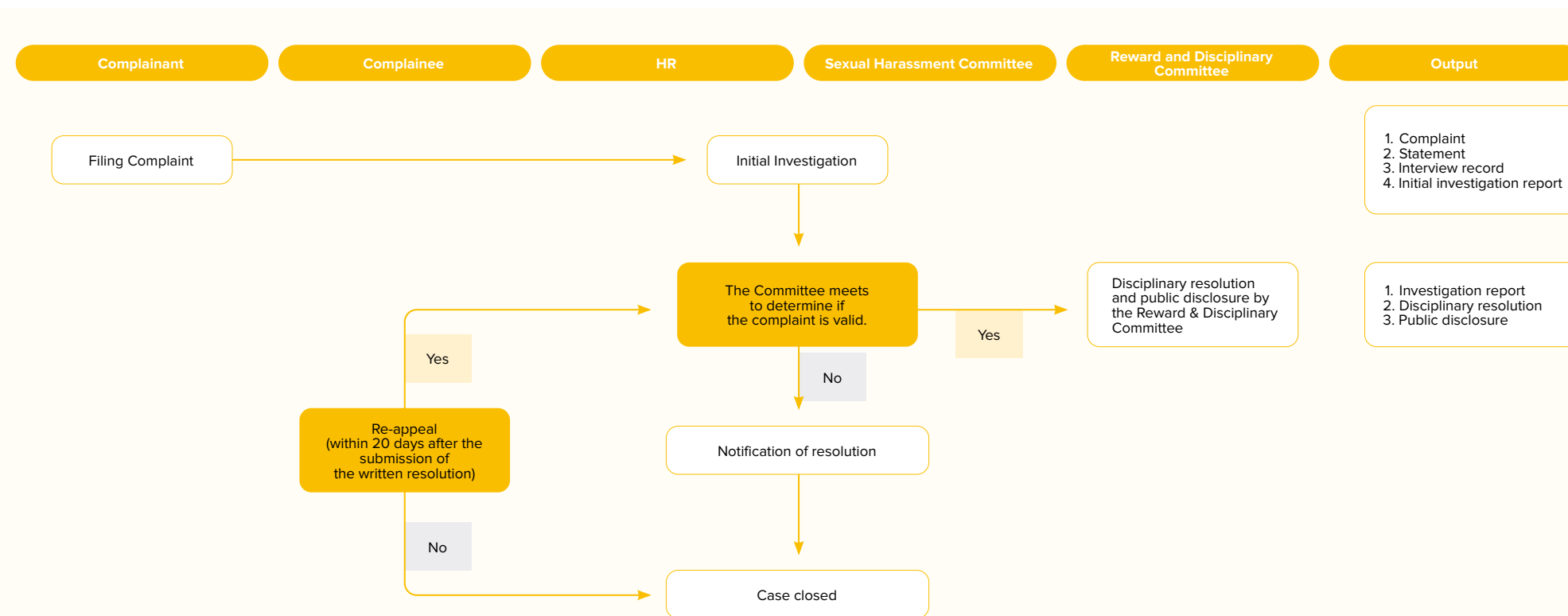
Notes Human rights training takes place during pre-service training for new employees

Sexual harassment

For sexual harassment case reporting, the Human Resources Department has set up a hotline and a designated e-mailbox to handle sexual harassment complaints. A "Sexual Harassment Complaints Handling Committee" was organized to handle sexual harassment incidents or suspected cases. Once a complaint is received, the committee would initiate the investigation procedure and carry out necessary activities 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. 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. Female committee members shall not be the minority. There were no cases of sexual harassment in 2021.

Complaints	2019	2020	2021
Number of sexual harassment cases	0	0	0
Number of discrimination cases	0	0	0
Total	0	0	0

■ Sexual Harassment Complaint Flowchart



Employee communication

CTCI values the opportunities to carry out bilateral communication with our employees, and provides open and transparent channels for communication because only unimpeded communication between employees and the company will create a workplace that encourages active employee participation. Our employees can report all kinds of issues encountered at the workplace and have the issues resolved to create a better workplace through various channels, including labor relation conferences, internal service satisfaction surveys, new employee lunch talks, talks with senior executives and engagement surveys. After the meeting, we would collect feedback from attendees and make short-, medium- and long-term plans for effective communication. In the short term, we provide different communication resources and assistance on a case-to-case basis, while in the long term, we will hold regular meetings to boost effective communication within business units in order to implement the Company's policies and various systems.

The results of the 2019 CTCI Engagement Survey showed that there are gaps and misunderstandings between supervisors and colleagues in terms of communication and information transmission. Therefore, starting from November 2019, CTCI requires each supervisor to have at least one hour of bilateral communication sessions each month with his/her direct report. The topic of conversation is not limited to work, family and interests, etc. The Human Resources Department would also collect data and conduct effectiveness surveys at the appropriate time.

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. Meeting minutes are made available to all employees.

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; areas that have received negative feedback and opinions from employees are thoroughly discussed and actions are planned to implement improvements.

Lunch seminar with new employees

- The head of the 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

- Organize quarterly "senior executive- employee conferences"
- The conferences provide opportunities for employees and senior executives to communicate face-to-face and facilitate bilateral communication.
- From its initial launch in 2009 to 2020, 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, innovation, 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 executive management, performance and promotion, career planning, learning and development, rewards and benefits, job satisfaction, teamwork, communication, talent retention, division of labor and resources, among others.

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, 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 shows that since the implementation of employee engagement survey and action plan in 2016, employees have given positive feedback, which is not easy under the impact of COVID-19. On the whole, colleagues generally highly agree with the specific actions of "corporate social responsibility (CSR)", "COVID-19" and "corporate policy and transformation", and think that "career and talent deployment", "senior executive leadership" and "overseas assignment experience" are the three projects that need to be improved most.

Employee Engagement Survey

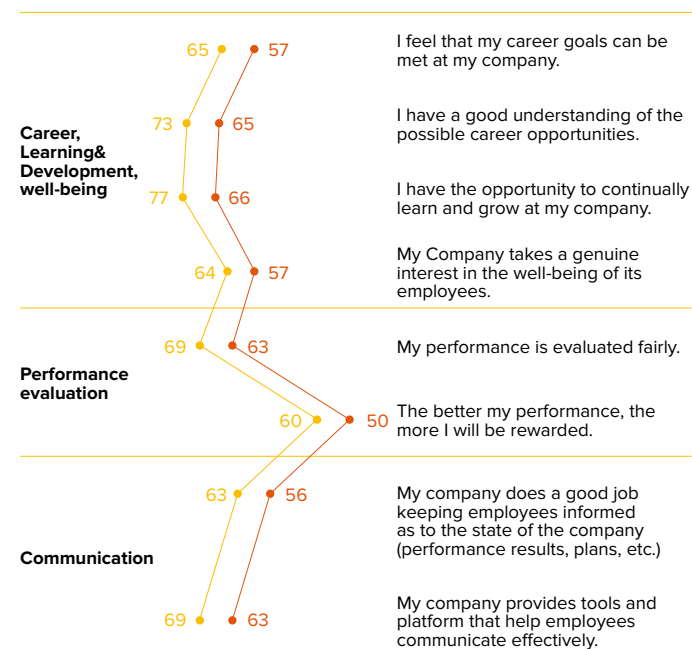
Item	End of 2016	2019	2021
Proportion of employees who have high level of identification with CTCI*	48%	72%	73%
Proportion of female employees who have high level of identification with CTCI	45%	63%	69%
Proportion of male employees who have high level of identification with CTCI	49%	73%	74%
Proportion of employees who have low level of identification with CTCI**	21%	7%	6%
20-30-year-olds who have high level of identification with CTCI	39%	66%	70%
30-40-year-olds who have high level of identification with CTCI	42%	65%	67%
40-50-year-olds who have high level of identification with CTCI	55%	76%	75%
50-60-year-olds who have high level of identification with CTCI	57%	81%	80%
Above 60-year-olds who have high level of identification with CTCI	71%	81%	84%
Proportion of engineering track employees who have high level of identification with CTCI	-	70%	71%
Proportion of specialist track employees who have high level of identification with CTCI	-	68%	70%
Proportion of worker track employees who have high level of identification with CTCI	-	85%	83%
Proportion of managers who have high level of identification with CTCI	-	85%	85%
Recovery rate	80%	89%	94%

Notes

- * 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.
- ** In order to further understand and listen to the voice of colleagues, we also invited the vendor of Mercer team (assisting in the implementation of Engagement Survey) to conduct "Focus Group" to fully understand the relevant feedback as a reference for improvement. Among them, "communication" is the main focus.

Survey Dimension Results At A Glance - By Gender

Female employees require a decent work environment to maintain dignity, fair treatment and inclusion.



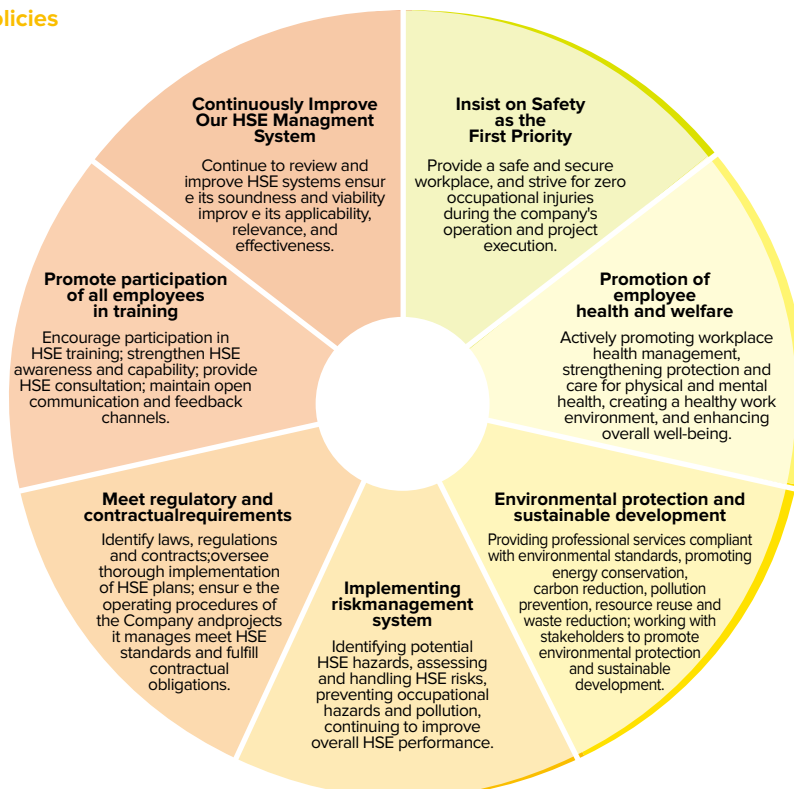
Safe and healthy working environment

Safe working environment

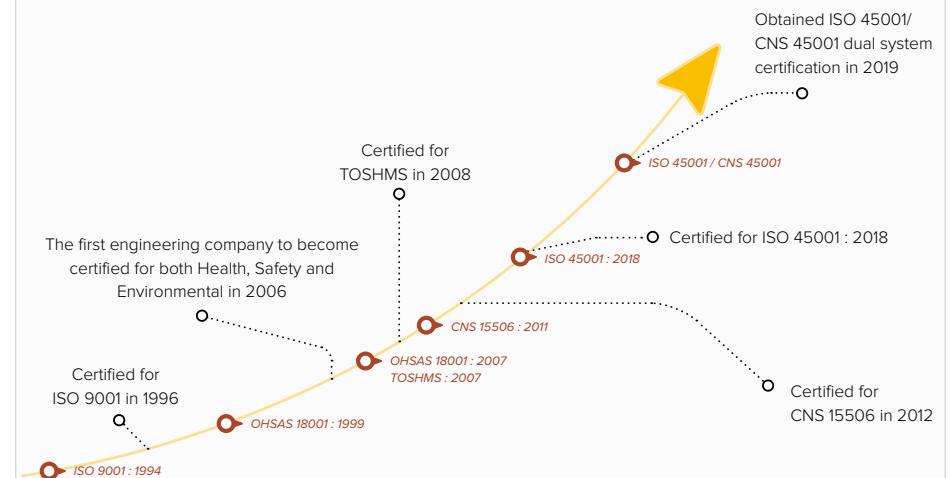
● Policies and systems

CTCI's HSE policies' focus is on "total safety." The Company continues to make improvements to employee health and well-being, environmental protection, risk management, compliance with legal and contractual requirements, and total employee engagement to provide a safe and secure workplace for all colleagues. CTCI requires all employees to abide by HSE policies and procedures on entering its plant facilities. At the same time, the policy statement scope applies to the due diligence in the merger & acquisition process, and suppliers and working partners are fully informed of CTCI's HSE policies and procedures. CTCI's HSE management meeting reviews relevant standards, regulations and risk assessment annually; HSE policies are endorsed by all senior executives of the business units, demonstrating the Company's commitment to clients and the society.

■ HSE Policies



■ 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 Occupational Safety and Health Committee

Chairman: EMO President	<ul style="list-style-type: none"> 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.
Number of labor representatives: 6	<ul style="list-style-type: none"> Review of the HSE policy statement, safety and health education training, and management measures (Inspection, Environment monitoring, etc.)
Meeting frequency: Every 3 months	<ul style="list-style-type: none"> Review of health management, occupational disease prevention and health promotion.

■ HSE Senior Executive Review Meeting

Chair: President	<ul style="list-style-type: none"> 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.
Frequency of meetings: Annually	<ul style="list-style-type: none"> Participants include the top management of each BU(business unit) head.

CTCI's safety and health-risk assessment follows the provisions of ISO 45001: 2018. Risk level above moderate refers to risk and opportunity to cope with. Action plans should be developed to eliminate hazard and minimize risk. High-risk items commonly seen at construction sites and their corresponding operational controls are as follows: 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.

■ Risk hierarchy management mechanism

Scope of assessment	<p>General: Safety, chemical, physical, biological and ergonomic hazards</p> <p>Organizational: Workload, work hours, violence, harassment and bullying</p>	<p>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 items to be inspected and improved by the supervisor.</p>
Assessment Frequency	<ul style="list-style-type: none"> - 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 	<p>Relatively high risk: Establish operation control procedures and measurement-monitoring requirements. The effectiveness of control and monitoring is reviewed annually.</p> <p>Moderate risk: Conditional acceptance with proper procedures, controls and safety protection; establish control mechanism as needed.</p> <p>Low risk: Acceptance of the current situation. No further action is required.</p>



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



Based on assessors' profession and experience, each potential hazard factor is quantitatively assessed for severity, probability, and effectiveness of risk control, and according to the assessment, risk value would be calculated to identify risk hazard factors.



For the moderate-risk factors, improvement and control measures would be proposed and implemented, and additionally, implementations of measures would be audited to ensure that they are effective.



High-risk items common at project worksites and their operational control:

High-risk projects Hazard type	Operational control
Excavation and retaining works - Collapse and structural failure	<ul style="list-style-type: none"> Permit must be obtained prior to operation Review the site with the proprietor and other units for underground pipelines, strata, and geological conditions, and draw up excavation plans with proper control. Retaining support structure shall be put in place for excavations deeper than 1.5 meters. However, if the geology is unusual or alternative methods are adopted, safety must be confirmed by a professional. Construction diagrams must be drawn for the retaining structure. A specialist must be designated to certify its safety before construction begins. If the vertical excavation depth is more than 1.5 meters, an open-air excavation line manager should be appointed. A retaining support line manager should be appointed to supervise the assembly and dismantling of the retaining support structure onsite.
Elevated - Fall	<ul style="list-style-type: none"> A permit be obtained before operation or before removing safety facilities Develop fall-prevention plan; install fall-prevention measures, such as safety net, guardrail, fall-prevention device Personnel working at height must receive training before operations. Safety and protective equipment checklist for staff before work Appoint monitor-and-command line managers or supervisors
Temporary electricity use - Electric shocks	<ul style="list-style-type: none"> Permits must be obtained before operation. Lockout/tagout must be implemented. Electrical equipment must be inspected by a specialist at the project site and labeled with color stickers before use; inspections shall be performed quarterly. Operators must have training records Inspection shall be performed before operation. Safety and protective equipment checklist for staff before work
Hoisting operation - Falling objects	<ul style="list-style-type: none"> Permit must be obtained before operation Plans shall be drawn up and implemented when hoisting large-scale equipment according to weight, lifting route, and lifting loads of the equipment. Obtain three certifications before a crane is allowed to enter a worksite. A crane must be inspected before entering a project site; the inspection must be performed quarterly and labeled with color stickers for identification. Crane operators must have training records Pre-operation checks must be carried out daily and the areas of operation area must be covered.
Confined space operation - Hypoxia and poisoning	<ul style="list-style-type: none"> Permit must be obtained before operation Develop confined space-hazard prevention plan An hypoxia operation line manager and on-site monitoring personnel shall be assigned to control and supervise Operators must have hypoxia training record Gas detectors, ventilation equipment, and emergency rescue equipment must be equipped; all equipment must be inspected according to operating procedure before use. Inspected and confirmed working before operation.
Fire- Explosion, fire, electric shock	<ul style="list-style-type: none"> Permit must be obtained before operation Fire monitors need to be assigned for supervision. Access must be restricted for underground operation site. Operation site must be equipped with fire extinguishers, fire blankets, fire collectors, etc. Operators must have training records Checks (cylinders, welding machines, etc.) should be carried out before the operation Safety and protective equipment checklist for staff before work
Construction scaffolding assembly - Falling, falling objects	<ul style="list-style-type: none"> Permit must be obtained before operation For the assembly and dismantling of suspended construction scaffolding, cantilever construction scaffolding and construction scaffolding with a height of more than five meters, a construction scaffolding assembly line manager shall be assigned. For assembly and dismantling of construction platforms, suspended construction scaffolding, cantilevered construction scaffolding, and other construction scaffolding or lifting platforms with a height of more than five meters, construction diagrams shall be properly designed in advance according to the principle of structural mechanics and the maximum load of the expected construction. An engineering specialist shall be appointed to review and approve the calculation and the design. Pre-operation checks should be carried out daily; routine inspections should be performed weekly. Safety and protective equipment checklist for staff before work

As required by the International HSE Management System, CTCI HSE Management team sets annual objectives, key performance indicators, and periodically reviews the effectiveness of the HSE management system. The result is shared with all management to inform of future resource allocation decisions, and helps set objectives and performance indicators for the next fiscal year. Dynamic management with a complete feedback loop ensures the Company pay keen attention to the matter.

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, 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. CTCI highly values employee feedback on HSE issues. At the first HQ building, quarterly office behavior-based safety (BBS) survey for a prize is posted at the HQ building to assess employees' level of understanding of HSE issues, and to respond to employee suggestions. The results of the survey are shared quarterly with the Occupational Safety and Health Committee. Concerns are conveyed to the departments in charge to further review and address the issues. For instance, employee feedback indicated that the washroom and the metal grille in underground parking lot are prone to falling risk when wet. Department in charge immediately installed anti-slip tapes to address the concern. Another employee pointed out that the blindspot at the exit gate of the parking garage prevented exiting vehicles from seeing the traffic in the opposite direction. In response, a mirror was installed to increase visibility and to secure a safe working environment at the building. In addition, in response to the epidemic, colleagues suggested strengthening the disinfection of public areas such as stair handrails, doorknobs, printers, etc., and advocated not to talk in elevators. All responsible units have cooperated with the above issues.

HSE management during engineering design, construction and commission

Project Design Phase	<ul style="list-style-type: none"> Use the regulatory and law system module to master the HSE laws and regulations related to the Company and other relevant HSE requirements that the Company agrees to abide by. Continue to collect, identify, and update regulatory information and regularly assess compliance of the Company/project operations.
Construction Phase / Commissioning	<ul style="list-style-type: none"> A construction review meeting is held daily to track and monitor the construction quality of partner firms. The components of evaluation include project progress, challenges faced, defects in quality and in safety, health, and environment, work allocations, multidisciplinary negotiations, arrangements for workflow in equipment and machinery in various plants, and proposals for improvements.

Construction safety and quality

Near-miss incidents are closely monitored and corrective measures taken, as near-miss incidents are key to identify potential risk. In 2021, there will be a total of 274 near-miss incidents, and for the reported near-miss, the construction site is required to strengthen the publicity of safety precautions to prevent occupational accidents. In light of the fact that most industrial accidents are caused by unsafe behaviors and environment, CTCI also champions BBS (Behavior-Based Safety) at project sites, in addition to the first HQ building. First-line operators, including vendors, first observe and record unsafe behaviors and conditions.

To make BBS observation more convenient and timely, CTCI has developed a BBS observation APP, which can be operated on mobile devices. Onsite HSE personnel would check the results weekly and make improvements to HSE practices accordingly. Periodic HSE review meetings are held at the project sites to review and propose improvement measures on relatively high-risk items. The Company recognizes BBS as a very effective tool in raising safety awareness among first-line workers. The observation of other people's unsafe behaviors often triggers critical self-reflection, enabling them to become labor-safety role models, and forging a safety culture at the worksites.

■ BBS observation APP interface



In addition, HSE Scorecard is implemented at the project sites, allowing project site managers to make weekly self-assessments and to summarize the week's safety assurance activities at the site, such as reviewing BBS discoveries, touring sites, identifying hazards, etc. Assessment results are submitted to HSE management team weekly for further tally and analysis. Outlier projects on the top and the bottom are required to provide further explanation and review. Through self-assessment, project site managers can easily follow the checklist to ensure full implementation of the HSE measures without fail. It also enables the management team to reward outstanding performance accordingly and to monitor closely projects with unsatisfactory scores before those issues deteriorate into serious safety concerns.

To encourage sound implementation of HSE management mechanism at worksite, and the enhancement of project safety performance, CTCI has developed an incentive system, offering special project rewards for projects exceeding certain number of safe work hours at completion. In addition, we conducted the "2021 Excellent HSE Project Site and Personnel Selection", the projects with excellent HSE performance and the on-site supervisors and safety personnel will be rewarded to be set as role models. HSE personnel also often attend HSE-related conferences or training provided by the government to keep abreast of current developments in HSE regulations. External experts or academics and internal specialists are invited to speak at corporate events, providing onsite diagnosis to illustrate the spirit of the law and their key emphasis on the safety and health of all workers.

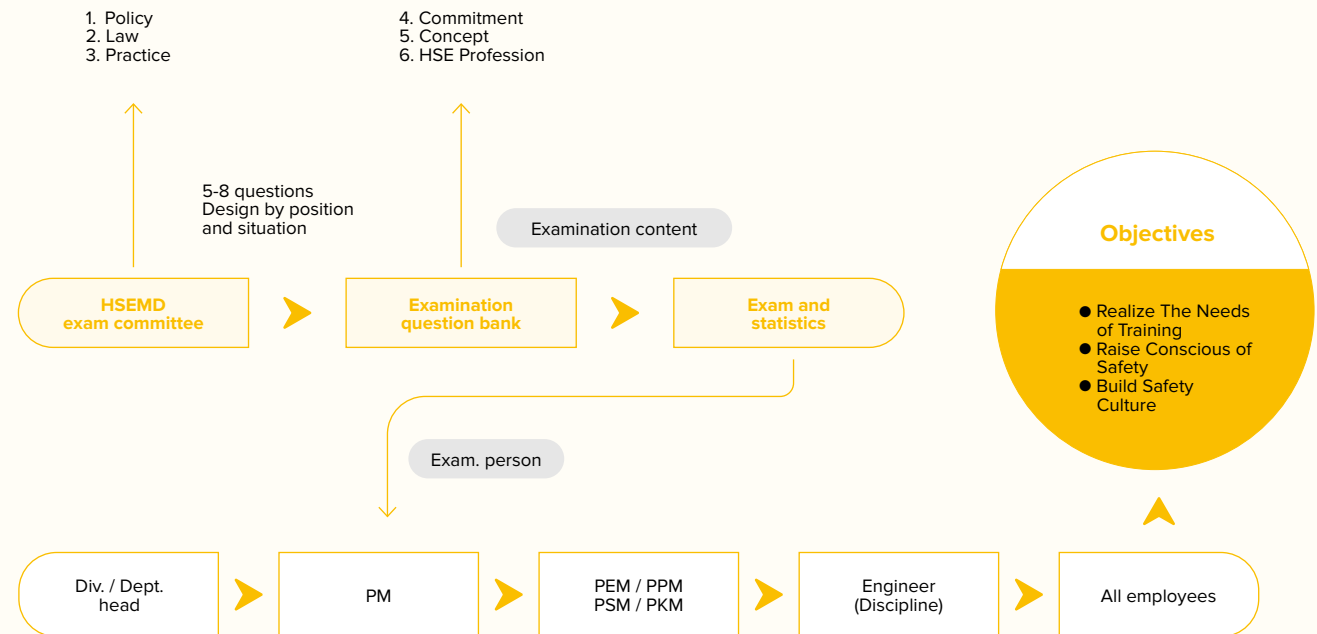
Total HSE Culture

CTCI's culture of "professionalism" is built upon the internal culture of safety. CTCI endeavors to drive "safety first" as the top priority of professionalism among colleagues with the inclusion of safety criteria in the year-end performance review. CTCI realizes that the effectiveness of HSE relies on the collective effort of all employees. Recognizing "people" as the core of a safety culture, the Company has expanded HSE participation and assessment to all employees.

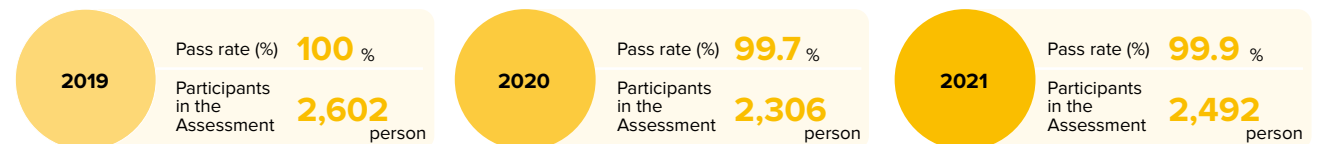
The purpose of Total HSE Evaluation is to promote precise HSE knowledge among all employees, especially among colleagues who are not directly involved in HSE-related work, department heads, and project managers. The evaluation enables employees to get familiar with HSE regulatory requirements, and develop safe behaviors and positive attitudes. Since 2013, CTCI has conducted Total HSE Evaluations. All questions are divided into three major topics: HSE policy commitment, HSE basic concept, and HSE practice.

Evaluation questions are designed based on target audience, recent modifications to procedures, current affairs, as well as job-related subjects to assess the level of understanding of all employees. Each evaluation result 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



HSE Assessment Results



Notes — 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.

CTCI has held Group HSE activities since 2018 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 2021, CTCI has launched a series of group HSE activities, including public letters from senior executives, selecting and rewarding HSE excellent vendors, construction site/ plant promotions, HSE fun contests, group HSE annual meeting, themed speech. Besides, CTCI has required senior executives to regularly inspect project construction sites, remind people the importance of HSE, and integrate corporate culture into each activity, so as to raise employees' HSE awareness and recognition. CTCI makes it clear that "safety first" is one of the vital conditions of achieving professionalism and hopes that every employee has in their mind values of workplace safety, physical and mental health and environmental protection. In addition, CTCI has included "safety first" into criteria in the year-end performance review, showing that the company has attached great importance to and pursued the value of safety.

Group HSE series activities

Senior executive letters on the topic of HSE

- HSE-themed speeches delivered by senior executives of each company. Hope that executives of different levels and employees can work together to put into action the philosophy of "safety first".
- Published on the company's EIP website and posted in project construction sites both at home and abroad.
- Select one domestic and one overseas vendors that have excellent HSE performance.
- The award ceremony takes place during the CTCI's annual supplier meeting. This helps convey the idea of "safety first" to attending vendors.

Construction site/ plant communications

- Key communications include: Communicate the expectations from senior executives, as seen in the HSE letters, to all employees, including: sling work management, fall hazard prevention aggravated punishment for safety guideline violation, and lessons from recent accidents etc.
- 3,947 people participated, including 808 CTCI construction site employees and 132 staff from supporting vendors.

Group HSE annual meeting

- HSE executives of each company in the group attended the meetings, reviewed and shared HSE management experience.
- The meeting was held in the form of online conference due to the pandemic.

Award vendors with excellent HSE performance

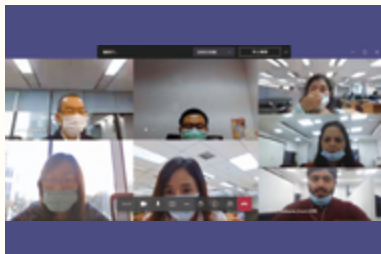
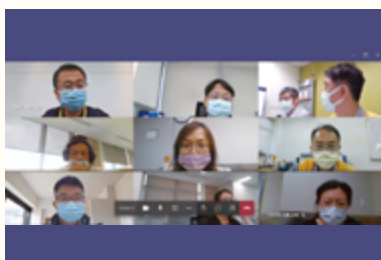
- Select one domestic and one overseas vendors that have excellent HSE performance.
- The award ceremony takes place during the CTCI's annual supplier meeting. This helps convey the idea of "safety first" to attending vendors.

HSE fun contests

- Design questionnaire that asks employees to identify work safety hazard, so that they know what are the safety and health hazards in the workplace. This helps improve the hazard identification ability of group employees.
- 2,522 people participated.

HSE-themed speech

- Held one lecture and invited external project executive to deliver a speech on safety and health management in the fast changing era.
- The lecture recorded will become an online course of CTCI college available for all group employees to learn.



Supplier Conference and Vendor Award for Excellent HSE Performance

Annual Group HSE Online Meeting

Project Site HSE Communication Conference

Top executives and supervisors from all levels inspect the site to stress that safety is top priority

Safety and Health Hazard Identification fun Contest

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 on 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 CTCL 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 category and role types, as a way to ensure all project workers are properly trained. In addition, the coverage rate of the project site manager's "Construction Industry Class A Occupational Safety and Health Supervisor" certificate has increased. CTCL 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 promote CTCL employees and contractors' workers to receive the safety and health card training. In order to strengthen the crane inspection capabilities of on-site supervisors and safety personnel, the HSE Management Department invited external associations to conduct basic inspection training for cranes in the North, Central, and South Taiwan in the first half of 2021. The advanced version of the crane self-inspection training was also carried out in the second half of 2021, and arranged the on-site practical operation drills. In total, 137 people were trained.

In 2021, all trainings participated by employees at CTCL first HQ building as well as project sites reached 290,302 hours. In addition to regular internal and external education and training, CTCL also forms long-term partnership with external experts to promote worksite safety, including periodic worksite visit to offer diagnosis and directions to improve worksite practices.

Total hours of
training (hours)

2019

223,314

2020

232,797

2021

290,302

Notes Total HSE training hours at CTCL first HQ building and project sites.

CTCL's commitment to HSE can be seen in CTCL management practices and the projects it manages. Achievements at the HQ include ongoing accumulation of safe man-hours (an accumulation of 56,870,458 safe man-hours from January 2007 to December 31, 2021). Many large projects also maintain excellent record of safe man-hours. Among the 17 large-scale projects under construction in 2021 (with a contract value of more than 6 billion), 8 projects exceeded more than 1 million safe man-hours, and 6 of them 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. In addition, CTCL's excellent HSE management performance is also shown in the awards given by the owner. The EP1 Project in Qatar was awarded the Best Contractor Safety Award. Singapore T250 Project acquired Annual SHE Award 2021. All of these awards fully demonstrate CTCL's excellent record of industrial safety and engineering performance.



The EP1 Project in Qatar was given the Best Contractor Safety Award.



The Singapore T250 Project was given the Annual SHE Award 2021.



The PTT LNG project in Thailand achieved 20 million safe man-hours.

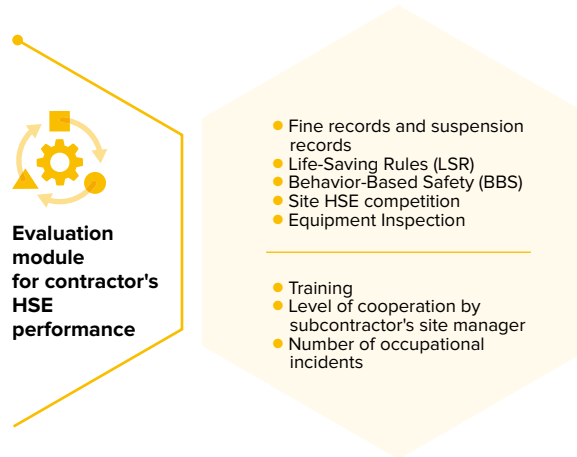


The Coal Handling Project in Taichung achieved 1 millions safe man-hours.

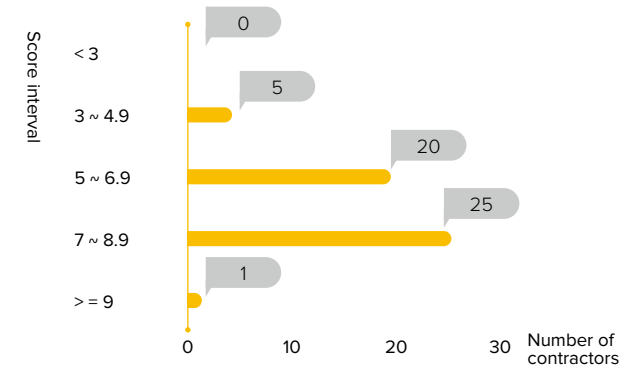
Contractor Management

To urge contractors to comply with HSE regulations and the company's HSE requirement, CTCI has formulated "Construction Subcontractor HSE Management Rules," so that the contractors can clearly understand and follow the rules during the procurement and contracting stage. CTCI continues to develop innovative techniques for managing safety and health effectively. CTCI utilizes information technology to support routine HSE activities, implement HSE information management systems, and provide real-time and relevant information to enhance HSE effectiveness. For high-risk operations such as on-site lifting and hoisting, CTCI has strengthened inspection regulations on the entry of contractor cranes to worksite and added requirements for the age of cranes and the seniority of operators to strictly manage hoisting equipment on-site. Contractor HSE performance has been a key agenda item among CTCI's international clients. A contractor-weighted HSE assessment module was implemented by the HSE management team, forming part of the overall assessment of project contractors. This achievement is a clear demonstration of the Company's effort in enforcing HSE practices among contractors.

The HSE Management Department regularly conducts contractor HSE evaluation. Evaluation results are fed back to the company's contractor's completion evaluation. Selection criteria include contract amount of the contractors and the accumulated construction hours. According to the above criteria, 51 contractors were selected for regular evaluation in 2021, totaling 293 evaluations, and the evaluation completion rate is 100%. The HSE assessment is mainly divided into 8 evaluation items. By translating contractors' HSE performance into quantifiable standard metrics, CTCI can compare contractor performance during contractor selection and the contract-awarding process.

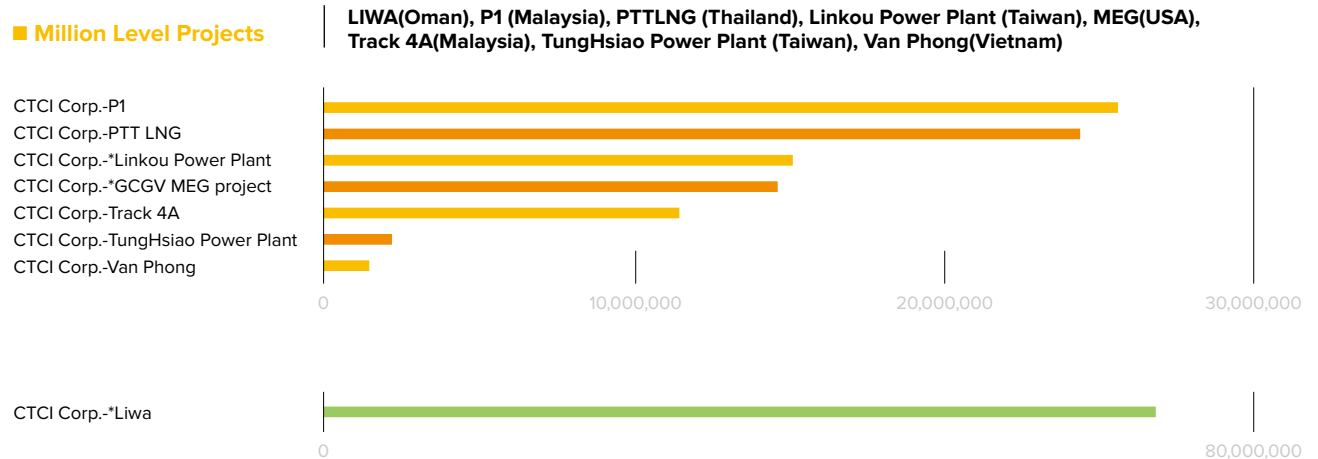


■ HSE Evaluation for Contractor (Assessment period: from Jan. 2021 to Dec. 2021)



Many large projects maintain excellent record of safe man-hours. Among 17 large-scale projects under construction in 2021 (with a contract value of more than 6 billion), 8 projects exceeded more than 1 million safe man-hours, and 6 of them even exceeded 10 million.

■ Million Level Projects

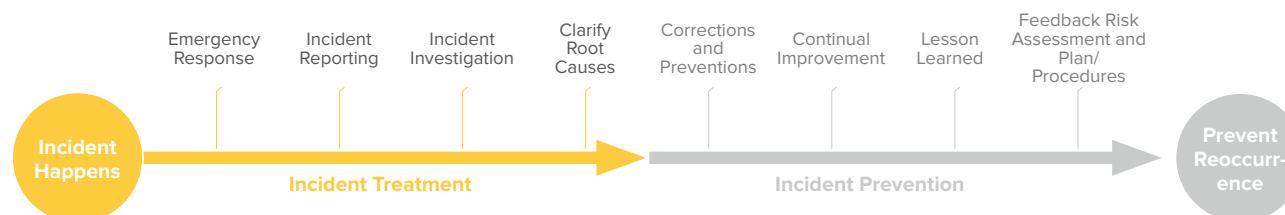


註 * Safe man-hours of Liwa project (ended in August), Linkou project, and GCGV MEG project (both ended in November).

To minimize the risk of damage after an incident, the Company has established a standard procedure for incident investigation. When an incident happens, the incident is first assessed in terms of severity, and a corresponding seniority of personnel is assigned to investigate the matter within a given timeframe. The results of the investigation will form the course of remedial measures to be taken, followed by the issuance of case studies (Lessons Learned) for future guidance, and require all the sites to strengthen the training for employees and contractors.. Feedback from engineering design, procurement, and construction units is collected to assess systemic risk. Improvements are made to policies and procedures to prevent future occurrence.

In addition, targeting work-related falling and fire accidents on project construction sites in 2021, we have actively reviewed and proposed improvement solutions including strengthening opening prevention equipment, requiring opening registration management and increasing opening prevention inspection frequency; revising and fortifying work permit system for high risk work, send supervisors depending on risk levels or set up mobile camera for real-time monitoring; strictly requiring contractors to implement insurance covering, supervising and spot checking contractors' insurance covering; immediately improving management measures when accidents occur and conducting complete corrections and preventions for all the other projects, reviewing accident causes from work-related events in the past and feedback to work-related management system on the site. Moreover, CTCI also continuously requires construction sites to take safety management measures, including joint inspection frequency on construction sites, conforming to CTCI project life saving regulations (LSR), and implementing a regional person-in-charge system. We expect that these measures would help reduce occupational incidents at project construction sites and prevent hazards.

■ Incident Treatment and Prevention Procedure



■ CTCI and contractors' work-related injuries in the last 5 years

		2017	2018	2019	2020	2021
Total Man-Hour	CTCI	12,502,762	8,273,402	8,897,847	6,837,702	6,707,421
	Contractor	25,474,691	23,199,832	19,913,120	13,850,902	19,066,827
	Total	37,977,453	31,473,234	28,810,967	20,688,604	25,774,248
Fatalities ^{Note 1}	CTCI	0	0	0	0	0
	Contractor	2 _(BC)	1 _(C)	0	1 _(C)	2 _(BB) ^⑦
Recordable work-related injury cases	CTCI	1	1	1	1	0
	Contractor	11	13	8	6	11 ^②
Fatality Rate ^{Note 3}	CTCI	0	0	0	0	0
	Contractor	0.02	0.01	0	0.01	0.02
Major Occupational Injury Rate ^{Note 4}	CTCI	0	0	0	0	0
	Contractor	0	0	0	0	0
OSHA Total Recordable Case Rate (TRCR) ^{Note 5}	CTCI	0.02	0.02	0.03	0.03	0
	Contractor	0.09	0.11	0.08	0.09	0.12
	Total	0.06	0.09	0.06	0.07	0.09
Lost Time Incident Rate (LTIR) ^{Note 6}	CTCI	0	0	0	0	0
	Contractor	0.04	0.01	0.02	0.01	0.06
	Total	0.03	0.01	0.02	0.01	0.05

Notes

Formula and Description :

- ① Fatal Hazard Category (A : Struck / B : Falling / C : Falling Objects)
- ② Recordable Work-Related Injury Cases (B : Falling / C : Falling Objects / D : Cut or Slash / E : Clipping or Winding)
- ③ Fatality Rate = (Number of deaths) * 200000 / Total work hours.
- ④ 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.
- ⑤ 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.
- ⑥ Lost-Time Incident Rate (LTIR) = (Number of Lost-Time Injuries) x 200'000 / Total work hours.
- ⑦ The two victims include one male and one female.

Healthy Workplace

Strengthen anti-epidemic work

As COVID-19 pandemic develops, virus mutations bring unforeseen difficulties to the entire world and make us reflect on ourselves. Facing uncertain changes time and again, we should be prepared for everything in advance, strengthen prevention and assess possible risks and opportunities. To broadcast important epidemic prevention information, we regularly update information on group health and care platform, so that employees both at home and abroad can access the latest information from the company and the governmental epidemic prevention institutions. When employees undergo home quarantine after coming back to Taiwan, suffer from abnormal body temperature or are identified to have overlapping footprints with the confirmed case, they can use APP on mobile phones or PC to report their body temperatures and physical conditions online.

Before the roll-out of national mass vaccination program, nurses at CTCI headquarters have conducted in June 2021 an enterprise rapid test for 739 employees and the first universal rapid test for 3,534 domestic employees of CTCI group in collaboration with Taipei Medical University Hospital, Tungs' Taichung Metro Harbor Hospital and Fangliao General Hospital. All employees received rapid tests and were healthy. Starting from July 5, monthly rapid test at home has started with home rapid test kit available through free registration so as to ensure the safety and health of employees and co-residing families. For employees who had to go to overseas construction sites or do business trips, the company has continuously provided complete epidemic prevention kit as a way of making employees feel at ease when taking planes.



CTCI Group epidemic prevention information platform



Temperature report system mobile APP



Enterprise rapid test announcement



Enterprise rapid test conducted by nurses



Enterprise rapid test construction site conducted by hospital



Enterprise rapid test headquarters conducted by hospital

Group healthcare platform

In accordance with the Occupational Safety and Health Act and Labor Health Protection Rules, CTCI has provided assistance in nurse recruitment in affiliated enterprises and guided nursing personnel to practice healthcare since 2017. The CTCI group health care platform, which was inceptioned in 2019 and put to use in 2020, allows employees to obtain instant epidemic prevention information, health information, and health examination resources. Platform features include the latest health information from the government, group epidemic prevention information, health checkup and hospital list, health questionnaire identification (abnormal workload, human factor risk assessment, maternal health assessment and psychology related measurements), and registration for health promotion activities.



Rapid test announcement

Risk identification system

We have developed an electronic risk identification system that includes abnormal workload identification, business trip risk identification, and human factor risk assessment and identification. Employees can get identification results immediately after completing online questionnaire. Nursing personnel would analyze the identification result and determine if there is a need to offer health education and on-site physician health counseling to people with high risks. This is real-time interaction and paperless documentation process.



Abnormal workload identification system



Business trip risk identification system



Human factor risk assessment and identification system

Health risk identification and management

● Health risk management

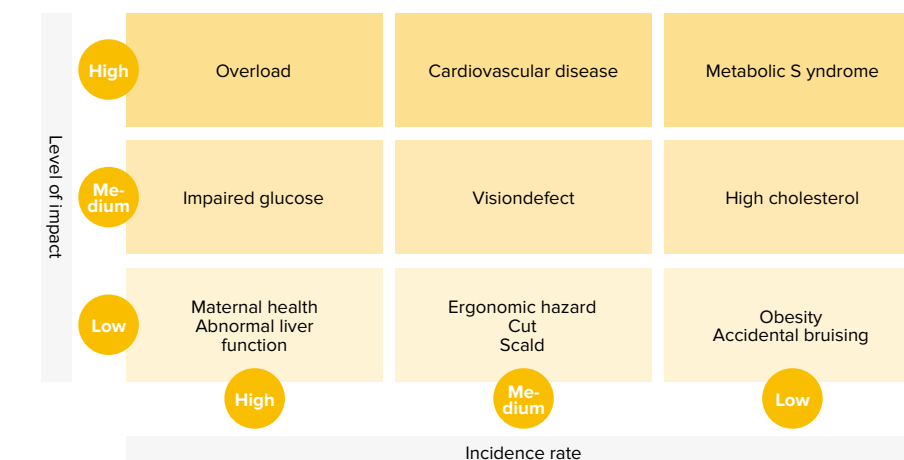
As employees are important assets for the company, CTCl has been committed to creating a healthy and friendly occupational environment, continuously caring and protecting employee health and providing reassuring occupational environment. In recent years, health center has been committed to breaking traditional health management practices, changing health management model, hoping to prevent occupational disease and actively promote employee personal health while achieving all-around health management. Through regular regulation identification, we have tracked and revised our adherence to existing regulations.

Special population health management (cases)	2019	2020	2021
Abnormal workload identification system	256	318	126
Maternal health protection management	15	11	21
Human factor muscle injury prevention and protection	8	4	55
Extended overtime work management	210	106	266
General employee healthcare	1,024	851	771

● Health risk identification system

We analyze the injury and illness incidence of employees based on the health examination materials collected between 2019 and 2021 as well as employee health care materials. We then identify CTCl employees' health risks and formulate health management and mitigation measures.

■ CTCl employee health risk matrix



Notes

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

■ Risk levels and mitigation measures

Level	Mitigation measure
High	<ul style="list-style-type: none"> 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 specialist physician. Offer care and support by executives when necessary.
Medium	<ul style="list-style-type: none"> Track and assess employees' health and risk factor regularly, offer on-site counseling by physicians and health education by nurses. Hold health promotion activities to enhance understanding of illness.
Low	<ul style="list-style-type: none"> Send health education messages via email on irregular basis, strengthen health self-management consciousness. Advocate for health on group health and care platform on irregular basis

● Health promotion

Preventive medicine calls for a 3-level and 5-stage prevention approach and healthcare measures to end or mitigate disease progression. This is exactly what CTCI is doing, where we commit to helping affiliated enterprises implement a consistent health management model with the ultimate goal of improving group employees' health.

Apart from caring about employees' physical health, our health center also launched a series of courses and lectures to help employees strike a work-family balance. Lecture themes cover disease prevention, psychological stress relief, weight loss, and healthy food. In 2021, construction site immigrant worker education and promotion campaign has been initiated to help domiciled employees, expat employees as well as with program construction site employees obtain complete health and care services through continual offering of various caring services and supportive environment.

	Physical and Mental Health Lecture	Cancer Screening	CPR Education	Notes
2019	1,074 cases	127 cases	167 people	We helped foreign proprietors implement AED training in English
2020	481 cases	0 cases	36 people	<ul style="list-style-type: none"> Due to COVID-19 pandemic, all health lectures and promotions including cancer screenings were suspended from January to June. Health promotion caravans on construction sites in Taiwan have been initiated since July: Awareness-raising on tuberculosis
2021	630 cases	0 cases	82 people	<ul style="list-style-type: none"> Health promotion caravans on construction sites in Taiwan: Awareness-raising on coronary heart disease Health promotion campaign for construction site immigrants in Taiwan: Say no to drugs!



Healthy Workplace Certification Health Promotion Mark We have passed the accreditation in spite of the fact that the accreditation was delayed in October, 2021.



AED Safe Place Certification of Department of Health, Taipei City government



Excellent Breastfeeding Room Certification of Department of Health, Taipei City government

In 2019, CTCI Headquarters Building promoted workplace health and actively implemented health promotion measures, creating a healthy work environment. The HQ passed the workplace assessment by Health Promotion Administration, Ministry of Health and Welfare, and received a Badge of Accredited Healthy Workplace. CTCI HQ has also been accredited by Department of Health, Taipei Government as AED Accredited Safe Workplace and Excellent Accredited Nursing Room issued. The credential remained valid in 2020.

As for employee mental care, the human resources department has added an organization function of Employee Relationship (ER) since 2017, offering employee care and support, employee opinion handling (including proposal improvement, employee complaint, unlawful infringement, sexual harassment, report and exposure), labor compensation dispute handling, working condition risk assessment (such as extended work hour risk assessment), labor inspection. In addition, the human resources department has also successively hired a professional counseling psychologist to offer employees psychological counseling services and care for employee mental health. In 2021, the professional counseling psychologist handled 48 psychological counseling cases. The department has also entrusted external professional units to process CTCI employee assistance proposals (EAPs), helping employees deal with their personal troubles and offering employees a comfortable workplace.

Consultation	Establish a mental health platform	Well-being classes
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,	Includes online psychological self-assessment instruments (sleep, emotion, depression, and stress, etc.), mental health education, resource channel and information, etc.	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. The budget mainly come from corporate funding and comprises four categories: general welfare, leisure, educational support, and others. Total expenditure of employee benefits in 2021 amounted to NT\$55,697,617. 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\$)

2019

57,740,225

2020

41,419,373

2021

55,697,617



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Currently there are 18 clubs at CTCI, of which sports-oriented clubs are basketball, badminton, table tennis, baseball, swimming, mountaineering, tai-chi, and qigong. Non-sports clubs include photography, calligraphy, home economics, music, charity, Buddhism, reading, recreation, information technology, foreign languages study, and bridge. All clubs are open to family members. All club activities were suspended during the first half of 2021 due to COVID-19 global pandemic. As the pandemic eased in the second half of the year, activities resumed under some conditions, such as prohibiting face-to-face conversation, plum-blossom seating pattern, ID registration system, mask at all time, and social distancing at a minimum of 1.5 meters.

The Company sponsors club activities through annual funding as well as employee-voted Club of the Year award. Clubs will receive funding of various amount based on the voting result. Besides regular meetings, each club also participates in the activities organized by the Employee Welfare Committee, such as volunteer play day at local nurseries, used clothing drive, charity run and outing trips in partnership with travel-oriented clubs. Club activities offer an outlet for employees to relax during weekends and holidays.

● Photography club



● Bridge club



● Basketball club



● Buddhism club



● Home economics club



● Mountaineering club





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CTCI's Sustainable Role IV

A Corporate Citizen Willing to Commit

Promoting ESG is a commitment that CTCI implements as a corporate citizen. By aligning to the SDGs set by the United Nations, CTCI has collaborated with CTCI Education Foundation and local communities to improve the quality of engineering in Taiwan, hoping to make our society better.

Highlights

21.2 million
NTD

in charity expenditure

50 Associations

we participate in, including
academic and professional
associations

11,583 people

attended CTCI Education Foundation's
events

2.5 million
NTD

funding for industry-academia
collaboration programs at
universities

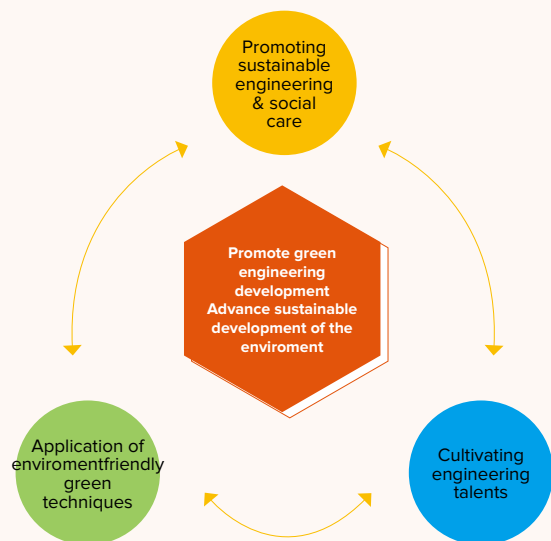
Social Impact

On our path to sustainability, we at CTCI continue to serve as a leading force in Taiwan's engineering development with our own professionalism and core strengths, and are committed to giving back to the society.

We follow the 2030 Sustainable Development Goals (SDGs), which is set by the United Nations, and identify "application of green-technology, cultivation of engineering talents, and promotion of sustainable engineering and social care" as the three pillars behind our vision of "promoting green engineering and improving environmental sustainable development."

Approaches include industry-academia cooperation, supporting academic research and outstanding students, and giving volunteer service for the disadvantaged. We have also integrated "CTCI Education Foundation" and local communities into an integrated charity network to bring out positive power in society.

We continue to make social investments. To review the benefits from the investment, we have adopted the London Benchmark Group (LBG) as our evaluation mechanism. Each investment category is divided into activity goals and cost. We evaluate the positive benefits generated from the investment and measure the impact of social engagement to help determine reasonable corporate resource allocation. We review the benefits of the resource input so as to effectively integrate financial and nonfinancial information, while at the same time meet the expectation of multiple stakeholders and create shared values. In terms of resources investment, CTCI mainly makes cash donations, which accounts for 97.49%, while volunteer investments accounts for about 2.25%. In recent years, public welfare activities are the main commercial initiatives that we are involved in with our core competencies, including engineering projects that use environmentally friendly technologies, industrial development and improvement of CTCI's professional capabilities, talent cultivation and innovative technology, industry-academia cooperation, as well as sustainable engineering and charity, which account for half of the activities executed.






Activity Category	2019		2020		2021	
	Amount Invested (in NTD)	Proportion (%)	Amount Invested (in NTD)	Proportion (%)	Amount Invested (in NTD)	Proportion (%)
Charity activity	2,302,256	11%	477,479	3%	4,778,398	22%
Community investment	8,437,512	41%	6,880,981	45%	7,804,910	37%
Commercial activities	9,985,800	48%	7,943,474	52%	8,617,082	41%
Total	20,725,568	100%	15,301,934	100%	21,200,390	100%

Investment Method	2019		2020		2021	
	Amount Invested (in NTD)	Proportion (%)	Amount Invested (in NTD)	Proportion (%)	Amount Invested (in NTD)	Proportion (%)
Cash donations	17,799,675	85.88%	13,143,819	85.90%	20,668,000	97.49%
Goods donations	390,160	1.88%	99,524	0.65%	41,140	0.19%
Volunteering	2,474,122	11.94%	2,055,711	13.43%	476,250	2.25%
Management Cost	61,611	0.30%	2,880	0.02%	15,000	0.07%



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■ Three Major Benefits

Focus	Purpose	Business Benefits			Community Benefits				
 Applying environmentally friendly technologies	To deal with climate change and reduce CO ₂ and greenhouse gases emissions, we have implemented green management and incorporated ecofriendly concepts into our business management. We provide energysaving and carbonreduction services for our clients and offer eco-friendly advice to our clients during quoting and executing, helping them take actions to cope with climate change.	2019	2020	2021	2019	2020	2021		
		Number of green engineering projects	6	8	3	Amount of electricity saved (MWh/year)	4,216.7	16,794.1	2,383.26
		Revenue from green engineering (in thousand NTD)	6,396,578	8,171,630	6,302,938	Amount of water saved (10,000 tons/year)	65.7	309.00	231.9
		Notes	Revenues are calculated on the basis of engineering projects with 90% completion progress that year.			Amount of GHG emissions reduced (tons/year)	266,973.7	123,930.3	9,535.44
						Amount of VOC reduced (tons/year)	468.73	224.30	138.06
 Cultivating engineering talents	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.	2019	2020	2021	2019	2020	2021		
		Reduce recruitment costs (%)	1.87	--(*)	9	Number of students benefited*	2575	640	350
		Employees serving as campus instructors (number of people)	12	6	3	Number of schools that joined industrial-academia cooperation schemes	4	2	1
		Innovative technology development (number of items)	4	2	1	Number of students who took internship	6	6	1
		Notes	* Due to the Covid-19 pandemic, campus recruitment or general recruitment activities were reduced or cancelled during 2020 to 2021.			Notes	* Students benefited include those who came to campus lectures, campus fairs and briefing sessions		
 Promoting sustainable engineering and social care	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 ecosystem, and exert our efforts to social charity and welfare events.	2019	2020	2021	2019	2020	2021		
		Number of international seminars on sustainable engineering we have organized	3	2	2	Number of people who took part in CSR and sustainability events	9,774	9,175	10,554
		Number of CSR awards we have won	9	8	7	Number of external parties that we work with	113	89	71
		Number of times our brand was exposed through media	600	666	645	Number of University CSR seminars we took part in	1,555	1,386	281
		Number of employees that participated in sustainable activities	355	163	174				

Engineering and Social Welfare

Fostering Engineering Talents

We at 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 2021, we ran industry-academia cooperation projects with one universities, with expenditure of NT\$2.5 million. The projects are about developing automatic machines that can tighten industrial pipeline flange bolts instead of adopting traditional torque wrench tightening method to improve engineering quality and efficiency.

	2019	2020	2021
Amount Devoted (in thousand NTD)	5,919 thousand NT\$	3,500 thousand NT\$	2,500 thousand NT\$
Collaborating Partner(s)	National Taiwan University, National Chiao Tung University, National Cheng Kung University, and National Taipei University of Technology	Cheng Shiu University, National Taipei University of Technology, and Wu Feng University	Cheng Shiu University
Details of collaboration	Intelligent unmanned vehicles perform tasks in replacement of manpower working in confined space, which prevents hazards on personnel working in dangerous environments. This in turn achieves the goal of automation and intelligent construction, as well as improves work efficiency.	<ul style="list-style-type: none"> ● Develop a controllable mobile vehicle to enter the pipeline in order to clean and replace the traditional purging method, and improve work efficiency. ● The lightning protection system is designed with 3D software. Through the 3D model, a comparison table of the building locations in each area and a comparison table of protection distances are established to plan lightning protection devices. 	The development of automatic equipment can be used to tighten industrial pipeline flange bolts, replacing the traditional torque wrench tightening method, thus improving engineering quality and efficiency.
Benefits for CTCI	Unmanned aerial vehicles The UAV can automatically take images at the construction site and check if the personnel onsite are wearing safety helmets.	Pipeline cleaning robot Using the pipeline cleaning robot to remove the material and dust remaining in the pipe during the welding process.	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.
	BIM in project progress tracking Using UAV to create 3D images of construction sites to track construction progress.	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.	
	Wooden box management The equipment materials in the wooden boxes can be unboxed and merged, and the quantity can be selected. Voice recognition can also be used instead of text input, and direction indication and distance display are added on the map.		
	Research on the application of the Hololens smart glasses Evaluate the advantages and disadvantages of the two AR devices, the Smart Glass and Hololens, and test possible application integration with the information platform. In the future, appropriate equipment will be sought based on the evaluation.		

Participation in Academic and Professional Associations; External Initiatives

We at CTCI hope to contribute our engineering knowledge and serve public construction projects through our professional core competence. We actively engage with academic/professional associations, serving important roles, such as manager and supervisor, in various major associations. We are committed to running conference affairs, fostering international economic and cultural exchanges, as well as continuously cultivating engineering talents to expand impact of the engineering profession, ensure its sustainable development, and enhance competitiveness of the nation. We also support external initiatives and participate in various activities, such as "Do Something for the Tamsui River" hosted by the CommonWealth magazine, "Earth Hour," and other initiatives organized by the TAISE to drive positive social impact.

In 2021, we have joined 50 academic or professional associations as group member and individual members; the Group subsidized 529 people to participate in related events, with total subsidy reaching NT\$2,226,266.

■ Academic or Professional Associations We Joined in 2021

Director

Chinese Institute of Engineers (Main Chapter), Chinese Institute of Engineers (Kaohsiung Chapter), Chinese Petroleum Institute, Taiwan Institute of Chemical Engineers, Sino-Arabian Cultural & Economic Association, Middle East Business Association, Taiwan India Business Association, Chung-Hwa Railway Industry Development Association, Cross-Strait CEO Summit, Taiwan Carbon Capture Storage and Utilization Association, Taiwan Institute for Sustainable Energy, Taiwan Welding Society, The Chinese Association of Engineering Consultants, The Taipei Federation of Engineering Consultants, Taiwan Electric Power Association, Sino-Indonesia Cultural and Economic Association, Chinese Society of Mechanical Engineers, Chinese Society of Structural Engineering, Taiwan Institute of Steel Construction, Nuclear Science & Technology Association, Chinese Environmental, Safety and Health Association, and Association of Taiwan Net Zero Emissions

Supervisor

The Chinese Association of Engineering Consultants, The Taipei Federation of Engineering Consultants, Taiwan Institute of Steel Construction, and Taiwan Offshore Wind Turbine Foundation and Marine Engineering Association.

Year	Number of Academic or Professional Associations We Participated in	Amount Invested	Number of Employees Subsidized	Description
2018	49	2,480,686	568	<div>Professional Training</div> <div>Provide professional training for chemical process engineers to meet the needs of the chemical industry.</div> <div>Co-organizing Events and Sponsorship</div> <div>Sino-Arabian Cultural & Economic Association; Sino-Indonesia Cultural and Economic Association; Middle East Business Association Chinese Institute of Engineers; Chinese Institute of Engineers (Kaohsiung Chapter); Chinese Petroleum Institute; Taiwan Institute of Chemical Engineers; Taiwan Welding Society; Sino-Indonesia Cultural and Economic Association; Chinese Society of Mechanical Engineers; Taiwan Electric Power Association; Taipei Society for Traffic Safety; Chinese Society for Management Of Technology; Rail Engineering Society of Taiwan; Chinese Taipei Tunnelling Association; Taiwan Nuclear Grade Industry Association; The Chinese Institute of Electrical Engineering; Chinese Taipei Geotechnical Society; Chung-Hwa Nuclear Society; Chinese Institute of Civil and Hydraulic Engineering; Taiwan Institute for Sustainable Energy.</div>
2019	48	1,350,734	552	<div>Professional Training</div> <div>The same training session as the previous year.</div> <div>Co-organizing Events and Sponsorship</div> <div>The list of academic and professional associations we participated in is the same as the previous year. We also participated in the Asia Petrochemical Industry Conference (APIC) hosted by the Petrochemical Industry Association of Taiwan and Forum for Visionary Youth by Monte Jade Science& Technology Association of Taiwan.</div>
2020	50	1,318,557	535	<div>Professional Training</div> <div>The same training session as the previous year.</div> <div>Co-organizing Events and Sponsorship</div> <div>The list of academic and professional associations we participated in is the same as the previous year. We also participated in Forum for Visionary Youth and Center for Talented Youth (CTY) with a theme of the "Xplorer" by Monte Jade Science& Technology Association of Taiwan.</div>
2021	50	2,226,266	529	<div>Professional Training</div> <div>The same training session as the previous year.</div> <div>Co-organizing Events and Sponsorship</div> <div>The list of academic and professional associations we participated in is the same as the previous year.</div> <div>Contribution of Technical Articles to Professional Journals and Sponsorship</div> <div>Journal of CIE by Chinese Institute of Engineers; Journal of Petroleum by Chinese Petroleum Institute; and the annual publication by Taiwan Electric Power Association.</div>

Social Care

■ Social care and major achievements

Disaster relief and epidemic prevention activities

- Donated NT\$ 3 million for Taiwan Taroko express accident
- Established group epidemic prevention center and maintain constant operation and epidemic prevention management by six mechanisms
- Developed "myCTCI" APP, established employee health management and feedback mechanism, covered epidemic prevention insurance for employees and granted hardship allowances for overseas employees.
- Stored and offered epidemic prevention supplies to front line employees all over the world through overseas subsidiaries, distributed supplies to employees and families in 2020 when the pandemic began to spread; offered rapid test for 5,000 group employees across Taiwan in collaboration with Taipei Medical University Hospital; so far, we still offer free home rapid test kit every month.
- Held regular health lectures and provided professional on-site services by physicians and nurses at companies and construction sites; Motivated employees to take vaccines and promoted measures such as epidemic prevention health test station.



Care about vulnerable group and local community

- Outsourced employee dorm cleaning to Syin-Lu Social Welfare Foundation as a way of helping people with mental and physical disability to find their feet and value in the society
- Held SeFun bakery charity sale activity every two weeks in cooperation with Children Are Us Foundation, shaping the culture of preferred procurement of food and gift boxes for festivals, group celebrations and large events
- Constantly raised and donated vouchers to Genesis Welfare Foundation
- Placed food raising trucks in cooperation with Carrefour and donated to food banks nearby
- Procured safe boxes from tsunli charity platform at headquarters and on construction sites, donated to Huashan Social Welfare Foundation and Taiwan Fund for Children and Families
- Procured masks from Down Syndrome Foundation R.O.C and presented to all employees
- Promoted "Your old computer, his new hope" activity, donated old computer to Taiwan Triple-E institute to reduce urban-rural digital gap
- Give priority to hiring local labor force to promote local employment, being neighborly and donated living supplies to local vulnerable group



Implement ecological conservation

- Promoted Sustainable Environmental Education: One Step at a Time in nearby operation sites and remote primary schools combining group core business of circular resources and incinerator operation
- Headquarters plants: 170 Kelat Paya, 200 Britton Ruellia, 520 Dwarf Ixora around the first headquarters building. Plants around the second headquarters building include 68 Taiwan Zelkova, 820 Broad-leaved Podocarpus, 4,300 Orange Jasmine, 2,900 Schefflera arboricola, and 4,900 Kelat Paya
- Provided clients with the best environmental protection solutions utilizing green design, displaying energy-saving and water-saving benefits and reducing air pollution, noise and resource wastes. We undertook programs including renewable energy, reclamation water plants, wastewater treatment, air pollution



Promote sustainability education and sustainable engineering

- Established CTCI Learning website, the first engineering digital education platform, which is freely accessible to the industry, government, university and the public to register and learn since November 1, 2021. With professional engineering knowledge and precious practice and experiences accumulated for over 40 years, CTCI hopes to develop sustainability-related talents. So far, there are 176 courses available online and registration number reached 627 as of December 31, 2021.
- Youth gathering for sustainability: We established platforms to connect with and listen to the thoughts of young generation so as to broaden education scope and effectiveness. Attendees listen to what speakers share and reflect on sustainability issues.
- The 8th edition of Taiwan in my eyes 120h event: Sustainability On The Go. We offered scholarships for cross-nationality college group activities, giving the international community a deeper understanding of sustainability endeavors in Taiwan and enabling international students to understand Taiwan and get acquainted with enterprise CSR and local custom and habits outside the campus
- Established CTCI Education Foundation in 2016 to align with United Nations' Sustainable Development Goals by 2030 and promote sustainable engineering development



Promote employee fitness culture

- The group holds sports day every 2 years on a regular basis with different themes such as power walking and baseball to promote employee fitness culture
- The company has established 18 clubs, among which physical fitness clubs add up to 8 including basketball club, badminton club, table tennis club, baseball club, swimming club, climbing club, Tai-chi club and Qigong club. All of these clubs hold activities accessible to employees and families. Apart from subsidies granted by the company to sponsor activities every year, clubs also receive allowances in varying amounts depending on year-end employee voting. On the basis of routine fitness courses and activities, physical fitness clubs also offer benefits to support competitions. For example, clubs would promote fitness culture by inviting children to play baseball, meet community and school baseball team, watch competitions, and hold classical baseball lectures.



Promote art and culture

- Long-time supporter of Shilin and Zhishan Cultural Festival: We promote cultural exchange through music and social arts.
- The company has established 18 clubs, among which 11 are non-physical fitness clubs, including photography club, drawing club, housekeeping club, music club, Faith, Hope and Love club, Buddhism club, book-reading club, entertainment club, technology club, foreign language club, and bridge club. Apart from subsidies granted by the company to sponsor activities every year, clubs would also obtain allowances in varying amounts depending on year-end employee voting. Nonphysical fitness clubs would hold routine courses, lectures, performances or art activities such as musical instrument courses, drawing course, and calligraphy course. Music club would carry out music performance in community or national music hall in collaboration with external units. Besides, supplementary coupons were also bought to promote art and culture development.



Promote experience exchange and industryuniversity collaboration

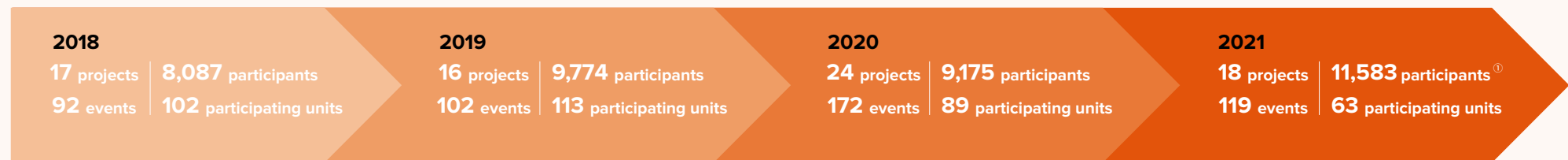
- CTCI has shared professional engineering practices with the academic community by having our experienced engineers and senior executives serve as lecturers of engineering departments in universities and colleges, and provided internship opportunities for students who are interested in engineering, so as to bridge the gap between industry and academia and continuously enhance youth training
- In 2020, we held 6 lectures and a total of 640 students took part; In 2021, due to the severity of the pandemic, we held one corporate visit and received nearly one hundred of students from department of civil engineering, TamKang University at the end of the year; In 2022, we will run CTCI forum courses for the department of civil engineering, National Cheng Kung University.
- In 2021, we developed the in-pipe cleaning robot in cooperation with Cheng Shiu University and won the 2021 platinum award in Taipei international invention exhibition. The robot was transported to construction sites in India to help improve project progress in mid-November.
- In 2021-2022, we developed pipeline flange bolts tightening robot in cooperation with Cheng Shiu University and won the 2021 Gold award in Croatia International Exhibition of Inventions.



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



Notes — ① Number of lecturers and participants participating in the Sustainability Camp as of 2021

Cultivate sustainable talents Deepen sustainable knowledge

Issues to Be Solved

The talent of young professionals is singularized and cannot be developed across different sectors.

Our Actions

- Talent cultivation
- Knowledge empowerment
- Policy initiatives.



Statements on Social Impact

- Cultivate young leaders from the campus, deepen the value and trust in sustainability and corporate responsibility, and stimulate sustainable actions through competitions and practical workshops.
- Sustainable education is being promoted in campuses, while sustainable development and CSR knowledge development plans are designed for young students, university management staff as well as teaching and research personnel.
- Cultivate new generation of opinion leaders, support the sustainable role of universities, promote and advocate sustainable development policies; drive and increase relevant education needs, and create job opportunities.

Dedicated Efforts in Sustainable Education, Promote Industry-academia Cooperation

Issues to Be Solved

Issues regarding promotion of sustainable education on campus

Our Actions

- Industry-academia exchanges
- Cross-sector conversation
- Academic seminars



Statements on Social Impact

- Advocate sustainable beliefs, SDG values, and the connection among ESG, CSR, and USR to the public through the UN's publications, workshops, as well as resources from the industry, government, and academic institutes.
- Facilitate cross-disciplinary interaction between stakeholders such as government, enterprises, academic research institutes and NGOs.
- Matching action plans, carry out innovation and solutions.
- Through publication awards, seminars and workshops, experts and scholars at home and abroad are gathered to strengthen research capabilities and build sustainable think tanks to gradually deepen sustainable value and make it mainstream.

Promote international exchange Expand international perspectives

Issues to Be Solved

The youth's international perspectives are not aligned with domestic and information at the international scene.

Our Actions

- Trend implementation
- Example output



Statements on Social Impact

- Introduce the latest international knowledge, trends and examples, link global and local practices, and use the demonstration effect to drive domestic learning and strengthen Taiwan's international competitiveness.
- Construct a regional and global platform to spread Taiwan's latest achievements in sustainable developments and become a role model for universities around the world.

Promote social inclusion Implement local practice

Issues to Be Solved

Social Inclusion

Our Actions

- Public promotion
- Social care



Statements on Social Impact

- Through polls on energy transformation, the UN SDGs booklet, and speech broadcasts to understand the public's opinions. And further promote the concept of sustainability to the general public.
- The concept of "Sustainable education, one step at a time" in combination with the CTCI Group's core business model of "resource recycling", has helped us promote the concept of waste recycling to schools in the community to help Taiwan build a society under circular economy.

All employees commit to sustainability and integrate it into the core business



Performance Demonstration of Total Participation CSR Excellence Practice (CTCI Micro-Film Contest, CSR Moment Ceremony)

One session
110 participants

Continuing the hype from the "2019 Total Participation CSR Excellence Practice - Corporate Sustainability Proposal Competition", this year we have held "2020 CTCI Micro-Film Contest" and "CSR Moment" in hopes that our colleagues can be inspired to realize CSR, implement ESG, and make contributions to sustainability. Together, the Group and the employees can fulfill the goals of sustainable innovation, green engineering, and environmental protection.

Co-organized with CTCI Group Shared Services.



Achievement exhibition of total participation
CSR excellence practice



Office relocation ceremony of CTCI EF and book launch

One session
21 participants

On August 2, CTCI EF was moved to a new office. On August 27, a "new office relocation housewarming party and release of a new book" was held. The grand opening was participated by the CTCI Chairman, John T. Yu, Chairman of CTCI EF, Eugene Chien, as well as the directors and committees of the foundation.

Co-organized with CTCI Group Shared Services.



Office relocation ceremony of CTCI EF and book launch



CSR Moment in 2021

60 entries
24 entries selected

Promote Total Participation of CSR Excellence Practice through the four core competencies, and encourage colleagues to share their relevant experience and results of their work regarding the Group's CSR promotion. Up to 20 excellent pieces and 4 outstanding pieces have been selected in each issue and included in the group's CSR Moment database.

Co-organized with CTCI Group Shared Services.



CSR Moment in 2021

The Most Reliable Global Engineering Services Provider / Trailblazer of Green Innovation /
The Best Employer That Builds / A Corporate Citizen Willing to Commit



2021 Taiwan Sustainability Engineering Forum - Intelligent and Green Technologies, World Cafe

Two Sessions
264 participants

Invite famous experts, professionals in the industry, and CTCI employees to discuss and pay attention to sustainable development as well as net zero CO₂ emissions. The Forum focuses on the four core skills of CTCI - iEPC, Smart Plant, Circular Economy, Green Engineering - and carbon neutrality, contemplating how to promote sustainable development through engineering.

Co-organized with CTCI Group Shared Services.



2021 Taiwan Sustainability Engineering Forum -
World Cafe



2021 Taiwan Sustainability Engineering Forum -
Intelligent and Green Technologies



Strengthen sustainable education and cultivate sustainable talents

Scholarship programs

3 topics
169 winners



Through diversified competitions and projects such as the "Youth Sustainability Innovation Program", "CSR Academic Research Paper Award", and "The Living Lab Award", we award "CTCI Scholarship" to young students of excellence. This helps build a foundation in sustainable education to implement and promote corporate social responsibility.

Co-organized by the Taiwan Academy of Corporate Sustainability and Taiwan Institute for Sustainable Energy (TAISE)

Youth Sustainability Leadership Program

Two Sessions
262 elites of sustainability (online)



In order to increase the participation of domestic youngsters and abroad on global issues and contribute more to sustainable development, 50 domestic and foreign college students who are interested in sustainable development issues are selected to participate in 3-day online training courses and performance presentations. The event included domestic/foreign trends shared by experts in the industry and academic professionals, 17 SDGs and zero net carbon emissions, innovative case studies, etc. The students completed SDGs innovation projects in teamwork. It was hoped that this event can broaden students' global perspectives. Students can apply their influence to implement the sustainable development concept on campus, and be able to integrate global issues with education.

Postgraduate students who are interested in sustainable development issues both domestically and abroad.

2021 CSR Master Lecture

One session
281 participants



To allow people in high education to better understand SDGs and CSR values, 2021 CSR Master Lecture encourages people to engage more in sustainable development. Keynote speeches were held to share the global trends of sustainable development and the experience of implementing social responsibility in colleges. It was hoped to expand the participants' global views and cultivate diverse thinking skills.

Center for Corporate Sustainability and National Cheng Kung University.

2021 Sustainable Development Education Seminar

One session
129 participants



CTCI EF published a series of books related to sustainable development. This event was based on the fourth volume, Sustainable Development Education, and SDGs. It was hoped that participants can better understand the history of sustainable development education and sustainability issues around the globe. Participants get to know more about the development and outcomes from the perspective of a company.

Co-organizer:
National Taiwan Normal University



2021 the 6th SDGs Academic Paper Award Sustainable Education Presentation



Youth Sustainability Innovation Program - Performance Presentation



2021 CSR Master Lecture



2021 Sustainable Development Education Seminar

The Most Reliable Global Engineering Services Provider / Trailblazer of Green Innovation /
The Best Employer That Builds / A Corporate Citizen Willing to Commit

2021 UN's ESDGs Co-planning Courses and Faculty Workshop

Two Sessions
70 participants



Famous experts in education and sustainable development, as well as enterprises that are dedicated to sustainability, were invited to share their practical experiences. Through SDGs and integrated courses of ESD, faculties are introduced to systematic thinking, in-depth discussion and practices to learn more about the latest trends of SDGs and ESD. Teaching materials and activity projects were further designed, which enhanced the understanding of core values, trends, and applications in SDGs and ESD for faculties at all educational institutes

Co-organized with the Taiwan Institute for Sustainable Energy.



2021 UN Education of Sustainable Development Goals (ESDGs) Co-Planning Courses Faculty Workshop

2021 the 6th SDGs Academic Paper Award

146 papers entering the final selection stage
A total of 12 papers won the award



To encourage domestic colleges and enterprises to promote sustainable development and the research of knowledge application, the 6th SDGs Academic Paper Award follows the CSR Academic Research Award over the past five years and carries out in three aspects: environment, economy, and society. It is hoped that through this event, knowledge sharing, communication and interaction featuring sustainable development can be made domestically and abroad.

Co-organizer: Taiwan Academy of Corporate Sustainability (TACS), Taiwan Institute for Sustainable Energy (TAISE)
Implemented by: Center for Corporate Sustainability



Group photo of the 6th SDGs Academic Paper Award winners in 2021

2021 Living Lab Awards

Two Sessions 198 registrants
74 registrants selected 61 participants



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.

Co-organized with the Taiwan Institute for Sustainable Energy.



2021 Living Lab Awards

The Most Reliable Global Engineering Services Provider / Trailblazer of Green Innovation /
The Best Employer That Builds / A Corporate Citizen Willing to Commit

Follow global trends and expand international horizons

2021 120h - Taiwan in My Eyes - Pioneering Workshop

One session 80 participants
12 schools 20 countries



The aim is to ensure the international society has a better understanding of Taiwan's sustainable development; for foreign students to learn more about Taiwan; to understand more about corporate CSR and local culture outside of the campus; to create more opportunities for communication; to increase students' understanding on multicultural and international perspectives; and to brainstorm through different cultures. In 2021, due to the COVID-19, physical visits were replaced with online workshops.

Co-organized with the Center for Corporate Sustainability and 5 CSS member corporations.

2021 International Conference on Integrated and Innovative Solutions for a Circular Economy

3 Sessions
224 participants (online)



Invited experts from home and abroad who are dedicated to the circular economy to analyze global trends. A platform is provided for industries, government institutes, or academic institutes for sharing new ideas. International seminars were held online. In one of the activities called World Cafe, people from various industries were invited to focus on 1. sustainable consumption and production 2. carbon neutrality 3. waste reuse. Suggestions for the circular economy were provided to the government, industries, and research institutes, and were consolidated into reports.

Co-organizer: CTCI EF, National Cheng Kung University, Bureau of Southern Taiwan Science Park, National Taiwan University
Advising Unit: Alliance for Sustainable Development Goals, A-SDGs

2021 Global Corporate Sustainability Forum (GCSF)

5,584 participants
10 workshops



In response to the UN Sustainable Development Goals (SDGs) and the Paris Agreement, which are actively responded to by global production officials, CTCI is committed to promoting responsible investment and sustainable development. Asia's biggest "Global Corporate Sustainability Forum" connected academic research contexts and trends. Communication with the international community allowed participants to raise awareness of international SDGs and CSR trends to implement sustainable development and explore the world for business opportunities.

Main Organizer: Alliance for Sustainable Development Goals, A-SDGs

Co-organizers: Taiwan Institute for Sustainable Energy (TAISE), Center for Corporate Sustainability, Taiwan Academy of Corporate Sustainability (TACS), CTCI Education Foundation (CTCI EF), BSI Taiwan, Deloitte Taiwan, Environmental Science Technology Consultants Corporation, Ernst & Young Global Limited, Green University Union of Taiwan, ISS Corporate Solutions, ICLEI Kaohsiung Capacity Center, MSCI, College of Business at National Taipei University, PwC Taiwan.

Advising Unit: Ministry of Economic Affairs, Ministry of Foreign Affairs, Environmental Protection Administration

Partners: Cathay Financial Holdings, Sinyi Realty Inc., Shin Kong Financial Holdings, AU Optronics Corp., Taiwan Semiconductor Manufacturing Company Limited, Taiwan Glass Ind. Corp., Taiwan Power Company, Taiwan Cement Ltd., China Steel Corporation, TWSE, CTCI, Taipei Exchange, CPC Corporation, Taiwan Research Institute, ASE Semiconductor, CTBC Holding, E. Sun FHC, Blusseeds, Hotai Motor

Special Thank You to: CSRone



The 7th 120h - Taiwan in My Eyes - Pioneering Workshop (online)



2021 International Conference on Integrated and Innovative Solutions for a Circular Economy



Group photo of GCSF in 2021



Group photo of GCSF in 2021

The Most Reliable Global Engineering Services Provider / Trailblazer of Green Innovation /
The Best Employer That Builds / A Corporate Citizen Willing to Commit

Advocate sustainable value, create a platform across different sectors

University USR X SDGs Sustainability Newsletter

51 issues of newsletter
996 subscriptions



The university campus is an important base for sustainable development. In order to gain insight into domestic and foreign trends, share sustainable strategies and achievements of various universities and promote sustainable campus activities, the "University Sustainable USR x SDGs" weekly newsletter was issued in April 2020. In addition to providing the latest international and domestic educational topics and sustainable trends on campus, the newsletter also shares the first-hand and latest sustainable trends at home and abroad, expand and analyze the readers' diverse views, and strives to become the top provider in sustainability news and information.

Co-organizers: Taiwan Institute for Sustainable Energy,
Center for Corporate Sustainability



University USR X SDGs Sustainability Newsletter
ECOVE Step by Step: Factories for Sustainable
Environmental Education

Youth Platform-Sustainable Youth Gathering

1 Session
7 Participants



In order to further expand the scope and effectiveness of education, we have established a platform to connect with the new generation of youths and organized the "Sustainable Youth Gathering" to listen to the voices of the new generation, and allow participants discuss about sustainability as well as how it connects to their lives. The Sustainable Youth Gatherings will continue to be held every quarter in the future so that students can have a platform where they can discuss about sustainability across different professional fields.

-



Youth Platform-Sustainable Youth Gathering

University Sharing Platform - Cooperation with Tamkang University
2021 University Sustainable Development Goals and Industry
Development and Operating Strategies Exchange Workshop-
Practices of Sustainable Development and Innovation in Industry
and Academia

One session 426 representatives participated
from the industrial, governmental, academic and
research sectors (online)



The workshop aims to promote exchange among the industry, public sector, and academic institutes, allowing people in the high education to understand the values of ESG (Environmental, Social, Governance) and Corporate Social Responsibility (CSR), as well as their connections with University Social Responsibility (USR). It was hoped that through the speeches, interactions, and new ideas inspiration, there will be more opportunities for cooperation between industry and academia, fostering the development of society in Taiwan.

Co-organizer: Center for Corporate Sustainability and
Tamkang University



Cooperation with Tamkang University - 2021 University
Sustainable Development Goals and Industry
Development and Operating Strategies Exchange
Workshop-Practices of Sustainable Development and
Innovation in Industry and Academia

ECOVE Step by Step: Factories for Sustainable Environmental Education

21 Sessions 15 elementary schools
2,759 participants



This program aims to promote environmental education at elementary schools with CTCI's core competencies. The purpose of the program is to give back to society, fulfill social responsibilities, enhance CTCI's brand image, and generate CTCI's social influence.

Co-organized with ECOVE Environmental Corp.



ECOVE Step by Step: Sustainability Education Trip



- **126** Corporate Governance
129 Risk Management
132 Information Security

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.

Highlights

7

Years in a row

Listed in DJSI Emerging Markets

7

Times

CTCI scored 7 times top 5% of Corporate Governance Evaluation System

1

Person

New female independent director

0

Case

Major information security incident

Corporate Governance

"Professionalism, Integrity, Teamwork, Innovation" is not only CTCI's corporate culture, but is also CTCI's most fundamental principle in daily operations. We value reliable and trustworthy relationship with customers, cooperative partners, suppliers, and contractors, looking forward to working with them for the long-term. That is why we have made it our vision to become the "The Most Reliable Global Engineering Services Provider," with a mission to "Satisfy Our Customers with Optimized Engineering Services," so that we can create a "Most Reliable" brand spirit when providing global engineering services.

CTCI is committed to sustainable development and strives to promote a transparent corporate governance culture. As for the corporate governance evaluation – from the "Information Disclosure and Transparency Ranking System" to the "Corporate Governance Evaluation System," CTCI ranks among the best and continues to be a leader in corporate governance. Since 2017, CTCI has achieved the highest recognition, "The Most Prestigious Sustainability Award - Top Ten Domestic Corporations," which is part of the Taiwan Corporate Sustainability Awards (TCSA). CTCI earned this award for Five consecutive years, making it number one in the engineering industry.

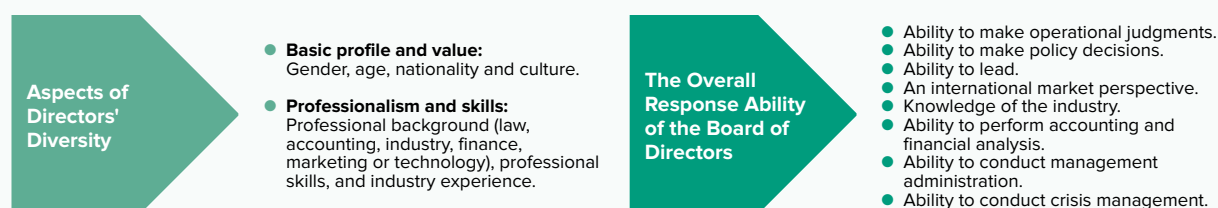
Structure and Operation of Board of Directors

CTCI's Board of Directors is the Company's highest decision-making team, responsible for overseeing CTCI's overall operational responsibilities while overseeing management's policy implementation and results. To establish sound and effective board operations, CTCI has adopted the candidate nomination system for electing its Board of Directors according to its "Articles of Incorporation" and the "Rules Governing the Election of Directors." CTCI has elected 12 Directors (including four Independent Directors within one woman Independent Director) who are composed of the Board of Directors; each Board member term is for three years. Pursuant to the "Rules Governing Procedure for Board of Directors' Meetings," the Board shall convene a meeting at least once every quarter. To follow principles of integrity and avoiding conflict of interest, CTCI has adopted "Ethical Corporate Management Principles". 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 and may not act as a proxy of another director to exercise voting rights on that matter.

To keep improving operation efficiency of the Board, there is "Regulations Governing the Board Performance Evaluation" in place that evaluates the whole Board of Directors, individual directors and functional committees. Such board performance evaluation is carried out at least once a year. The Board performance evaluations in 2021 were carried out at the beginning of 2022 by self-evaluation of individual Board members, the results of which showed that the board is operating well. As to external evaluation, CTCI updated its guidelines in November 2018 that requires a board performance evaluation to be carried out by external evaluation unit once every 3 years. The latest external evaluation is completed in June, 2021, and report to Nominating Committee and the Board of directors in November, 2021. The report result has been disclosed on official website.

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:



According to corporate principles, among the 12 directors of CTCI's 15th board of directors, 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 Jack Huang with experience in practicing law, former Minister of Economic Affairs Yen-Shiang Shih, former Public Construction Committee Chairperson Frank Fan, and qualified accountant Yi-Fang Chen. These four members are either iconic figures from their respective industries, government, the legal field, or academia. This allows CTCI to attain its goals of diversity and demonstrates it has identified complementarity professionals to serve on its Board.

In addition, the Company has one director with employee status, accounting for 8% of the total; four independent directors, accounting for 33%, of which one independent director has a term of fewer than three years, one independent director has a term of three to six years, and two independent directors have a term of six to nine years; one director is under 60 years old, three directors are between 61-70 years old, and eight directors are above 71 years old.

■ CTCI Board of Directors

Date: March 31, 2022

Director	Diversity	Nationality	Gender	Employee	Independent Director's tenure			Operation Management	Industry Knowledge	Law	Finance/ Accounting/ Economics	Crisis Management	International Market Perspective	Leadership	Decision-making Skill	GICS Level 1
					Under 3 years	3-6 years	6-9 years									
Chairman Michael Yang ^②		Republic of China	Male	✓				✓	Construction Consultant			✓	✓	✓	✓	Industrials
Director John T. Yu ^②		Republic of China	Male					✓	Construction Consultant			✓	✓	✓	✓	Industrials
Director Quintin Wu		Republic of China	Male					✓	Plastics Industry / Petrochemical Industry			✓	✓	✓	✓	Materials
Director Johnny Shih		Republic of China	Male					✓	Textile / Banking Industry		✓	✓	✓	✓	✓	Industrials
Director Yancey Hai		Republic of China / USA	Male					✓	Electronics / Banking Industry		✓	✓	✓	✓	✓	Industrials
Director An-Ping Chang ^②		Republic of China	Male					✓	Cement Industry / Investment M&A		✓	✓	✓	✓	✓	Materials
Director Wenent Pan		Republic of China	Male					✓	Petrochemical Industry / Optoelectronics Industry			✓	✓	✓	✓	Industrials
Director Paul Chen ^②		Republic of China	Male					✓	Petrochemical Industry			✓	✓	✓	✓	Industrials
Independent Director Jack Huang		Republic of China	Male				✓	✓	Investment and M&A	✓		✓	✓	✓	✓	-
Independent Director Yen-Shiang Shih		Republic of China	Male			✓		✓	Engineering Consultant / Industrial Economics		✓	✓	✓	✓	✓	Industrials
Independent Director Frank Fan		Republic of China	Male				✓	✓	Construction Consultant			✓	✓	✓	✓	Industrials
Independent Director Yi-Fang Chen		Republic of China	Female		✓			✓	Manufacturing Industry		✓	✓	✓	✓	✓	-

Notes

- ① The Company re-elected all members of the 15th Board of Directors on May 28, 2020.
- ② Representative of the juristic-person director.
- ③ As of first quarter of 2022, the average attendance rate of Betings was 94.05%.
- ④ As of first quarter of 2022, the average duration which the directors held office was 9.62 years.
- ⑤ For Directors' part-time jobs and further studies, please refer to page 127 to 129 of the Company's 2021 annual report.

Article of Incorporation

http://www.ctci.com/www/ctci2016/upload/page/2021_E_PG74-F2.pdf



Rules Governing the Election of Directors

<http://www.ctci.com/www/ctci2016/upload/page/PG74-F6.pdf>



Regulations Governing the Board Performance Evaluation

<http://www.ctci.com/www/ctci2016/upload/page/PG74-F15.pdf>



Rules Governing Procedure for Board of Directors' Meetings

<http://www.ctci.com/www/ctci2016/upload/page/PG74-F16.pdf>



Corporate Governance Principles

<http://www.ctci.com/www/ctci2016/upload/page/PG74-F0.pdf>







Ethical Corporate Management Principles

<http://www.ctci.com/www/ctci2016/upload/page/PG74-F18.pdf>



Board of Directors and Functional Committees

To enable more effective implementation of supervisory, auditing, and management functions of the Board, CTCI has been paying close attention to climate change issues and respond to Taiwan Net Zero activities positively, with the functional committee having been adjusted in 2021; in addition to the established functional committees "Audit Committee," "Remuneration Committee," and "Nominating Committee," "ESG Committee" has been renamed as "ESG & Net Zero Committee" to enhance the quality and efficiency of decision-making as well as to strengthen sustainable development. At the same time, we strive to shape a healthy corporate governance culture by adopting strategies such as "strengthening the supervision of the Board," "enhancing management structure of the Company," "solidifying internal control system," "implementing risk management," "implementing information disclosure," and "establishing corporate self-governing standards."

 ESG & Net Zero Committee	 Remuneration Committee	 Audit Committee	 Nominating Committee
Convener: Yi-Fang Chen Committee members: Yancey Hai, Michael Yang	Convener: Frank Fan Committee member: Jack Huang, Yen-Shiang Shih, Yi-Fang Chen	Convener: Jack Huang Committee Member: Frank Fan, Yen-Shiang Shih, Yi-Fang Chen	Convener: Yen-Shiang Shih Committee member: John T. Yu, Jack Huang, Frank Fan
<ul style="list-style-type: none"> One meeting was held during 2021 and the first quarter of 2022, 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. 	<ul style="list-style-type: none"> Three meetings were held during 2021 and the first quarter of 2022, 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. 	<ul style="list-style-type: none"> Seven meetings were held during 2021 and the first quarter of 2022, 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. 	<ul style="list-style-type: none"> Four meetings were held during 2021 and the first quarter of 2022, 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.

Compensation for Management

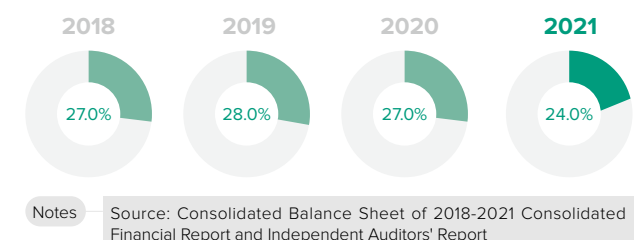
The remuneration policies, long-term incentive regulations, and remuneration determination standards for the management (including the Chairman/CEO) are first proposed by the Human Resources Department to the Remuneration Committee for deliberation. Once deliberation is done, the Remuneration Committee then reports to the Board of Directors for resolution. The Chairman/CEO's annual compensation is determined based on the comparison of the following KPIs between the current year and the past five years: (1) consolidated sales revenue, (2) return on equity (ROE), and (3) earnings per share (EPS). The total score on KPIs is then converted into the financial compensation. The annual compensations for the President, Executive Vice Presidents, and other management members are calculated based on the same logic. The highest personal annual income in CTCI in 2021 is 13.40 times that of the annual employee's median salary, and 11.81 times that of other employee's average annual salary. The highest personal annual income increase was 3.29 times the median annual total compensation increase of other employees.

Shareholders' Equity and Communications

Shareholders' Equity and Communications Information disclosure is an important part of corporate governance. CTCI has always been committed to information transparency and the convenience of information, providing investors with the most immediate information to protect investors' interests. CTCI not only conducts one-way information disclosure, but also sets up the "Investor Section" on the website to disclose information on corporate governance, business announcements, financial statements, group news, corporate briefings, internal audits, among others, in real time. The contents of investor conference presentations session can also be viewed online. Moreover, CTCI publishes detailed information on TWSE's "Market Observation Post System" to allow investors better understand the Company's current situation, which is a way to safeguard shareholders' rights.

CTCI not only fully discloses the information but also regularly participates overseas investor briefings organized by securities firms, thereby having more opportunities to directly communicate with overseas institutional investors. In addition, we regularly pay visit to the the main corporate shareholders who have held long-term shares every year and learn about their suggestions on CTCI's operations. CTCI also has a spokesperson and investor relations specialist, which maintains direct contact with the shareholders immediately by phone, fax, or e-mail so as to respond in the shortest time possible.

Shareholders' Equity



Risk Management

In the face of changing circumstances, in order to control and reduce the risk of operation and to create a resilient organization, CTCI has established a complete enterprise risk management (ERM) mechanism and promoted key behavior indicators under the Company's core values to form a corporate risk culture.

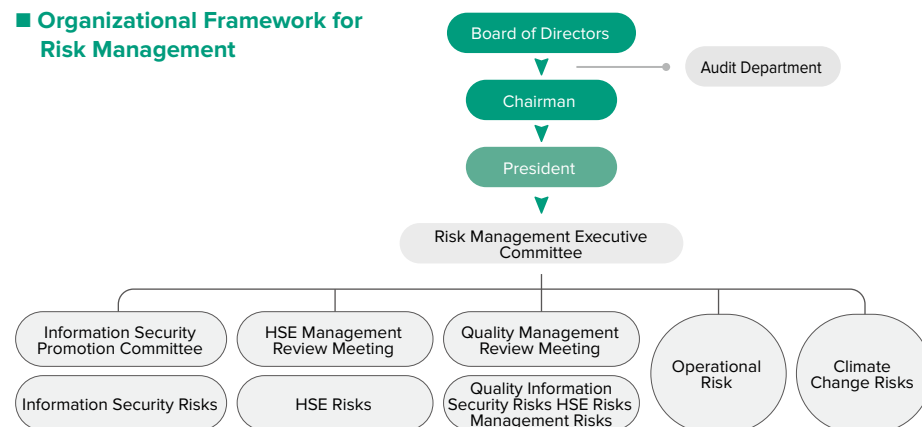
Risk Management Mechanism

In 2006, the Risk Management Executive Committee was established by the organization to approve risk management policies and supervise risk management within the Company. Members included the President serving as the chairman, heads of EMO (Executive Management Office) serving as the convener, and heads of business units serving as committee members. The Risk Management Executive Committee submit a risk management report to the Board of Directors every year. Whenever a risk that may have significant impact on the company's operation and compliance is found, the committee needs to take an appropriate measure promptly.

The Company established the "Risk Management Policy" and "Risk Management Guidelines" approved by the Board of Directors in 2020 to be the highest guiding principles and management procedures for risk management, to clarify and regulate internal policies, achieve objectives, adhere to the scope, maintain organizational structure and units, and to uphold the rights and responsibilities of risk management. It also clarifies the risk management mechanism and implementation process for all colleagues to follow. Each risk management unit should conduct the risk assessment process at least once every six months, and the risk management report shall be submitted to the Risk Management Executive Committee for review after the supervisor's confirmation and approval.

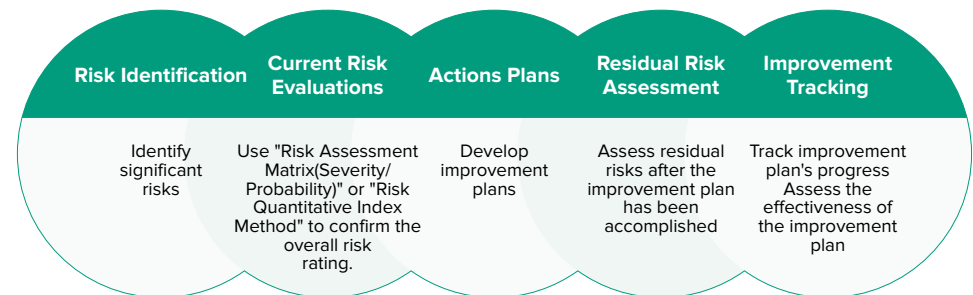
All employees should accept the responsibility to report risks. Should an employee find any significant risk that could impact Company operations, he/she should immediately report this fact to his/her supervisor, and should immediately deliver a report to the risk management secretarial

Organizational Framework for Risk Management



unit to be forwarded to the "Risk Management Executive Committee." The committee should call a risk management meeting to undertake a necessary response if the situation merits to avoid or mitigate possible negative impacts to the Company.

Risk Management Process



The risks identified by CTCI in 2021 include: human resources and business development^④. High-risk projects are being evaluated for their potential impacts and to develop corresponding action plans.

Loss of Outstanding Young Colleagues

Potential Impacts

Promising junior employees with potential should be continuously cultivated. If young colleagues leave the organization, it will create skill and experience gaps and affect the company's business execution and future development.

Action Plans

We established CTCI University, an online learning platform, to enhance employees' professional abilities for career development.
Improve supervisors' management capability. Establish a credible ability evaluation and reward structure, and correspond evaluation and rewards to the promotion system. Implement the talent management plan and potential personnel training continuously for keeping potential talent.

Notes

④ The risk of business development involves sensitive information, so it doesn't disclose.

Insufficient Key Manpower

Potential Impacts

Failing to fill key positions may impact the effectiveness of the company's operations and future operating performance.

Action Plans

Implement work rotation and train colleagues with relevant experience as trainee candidates. Department heads or project supervision personnel should train trainees with the most efficient cultivation method. Train second professional skill to enhance diverse ability and further development.

Emerging risks

Since CTCI takes emerging risks seriously, such risks have been incorporated into the risk management cycle. The idea is to identify emerging risks and focus on global changes through the systematic management system. We not only launched control measures or emerging risks that may arise, but also continue to look for ideal opportunities that may arise from future trends.

RISK DESCRIPTION	POTENTIAL IMPACT	ACTION PLAN
<ul style="list-style-type: none"> The IEA special report published on 18 May 2021 showed a global journey roadmap to net zero by 2050. This includes no investment in new fossil fuel supply projects, and no further final investment decisions for new unabated coal plants, unless it could own the technology of carbon capture. <p>To achieve the goal of net zero by 2050, international petroleum companies need to reduce petrochemical investment, which reduces the contract amount of petrochemical business</p>	<ul style="list-style-type: none"> With fewer petrochemical tenders, the percentage of revenue contributed by the petrochemical business reduces year by year. <ul style="list-style-type: none"> In 2018, the contribution of revenue was 51% In 2019, the contribution of revenue was 43% In 2020, the contribution of revenue was 42% In 2021, the contribution of revenue was 34% <p>Given the decline in percentage of revenue contributed by petrochemical business, it could be foreseen that the revenue of petrochemical business will keep declining in the future.</p>	<ul style="list-style-type: none"> Set up Advanced Tech Facility Business Operation to systematically enter the field of high-tech facility engineering & construction. <ul style="list-style-type: none"> Advantages we have in the Taiwanese market: all engineering field EPC services for factory + clean room construction; such as Li-Battery project and DRAM project. Advantages we have in overseas market: With CTCI's wide bases overseas, we can support Taiwanese companies to expand global business opportunities; for example, Taiwanese semiconductor manufacturers are now building fabs in the U.S. Set up New Business Development & Strategy Management Committee to focus on carbon reduction/net-zero new technologies and new investment business opportunities, and jointly conduct research with clients and Industrial Technology Research Institute of Taiwan on topics such as hydrogen energy, energy storage, CCUS, carbon neutrality application and business development. We also signed a cooperation agreement for the development, verification and application of the new technologies, turning the crisis into a turning point. Set up Sustainability and Net Zero Office (also known as ESG Office) to focus on the requirements for carbon reduction, carbon neutrality and net zero, and to lead carbon inventory, reduction, use of renewable energy, net zero EPC, carbon emission reduction of supply chain and green engineering technology to provide clients with low-carbon turnkey and low-carbon supply chain services. The office will assist CTCI to achieve business transformation strategies and objectives through green technology, green contracting and green investment.
<ul style="list-style-type: none"> The outbreak of Covid-19 causes prolongation of supply chain and the congestion of transportation and logistics, which means the global supply and demand imbalance will continue to deteriorate. In addition, the prices of international bulk raw materials saw a hike. Production cost will thus be reflected in commodity prices. In Taiwan, the expansion of public works, ramp up of production in high tech industry, and inward flow of investment by overseas Taiwanese businesses have all fueled domestic inflation, driving up the cost of companies. According to the price statistics released by Taiwan's Directorate-General of Budget, the annual change rate for Construction Cost index in 2021 was 10.94%, way much higher than 1.41% in 2020. The index in 2021 is the highest over the last 13 years. <p>In terms of IHS Markit's forecast, Taiwan's Construction Cost index will continue to increase in the next 5 years. The index is forecast to rise from 126.8 in 2022 to 133.64 in 2026.</p>	<ul style="list-style-type: none"> Company cost increased 17.4% due to the extraordinary price hike of raw materials in 2021. <ul style="list-style-type: none"> Copper price rose by 23.9% from USD7,862.4/MT in January 2021 to USD9,740.6/MT in December 2021. Nickel price rose by 18.3% from USD17,647.5/MT in January 2021 to USD20,880.5/MT in December 2021. Rebar price rose by 17.8% from TWD19,100/MT in January 2021 to TWD22,500/MT in December 2021. <p>According to IHS Markit's forecast, Taiwan's price fluctuation will keep going up in the future.</p>	<ul style="list-style-type: none"> Our project teams strive for compensation of price adjustment actively, in order to lower the risk of group operation. Sign a pre-bid agreement with vender/supplier's quotation during the bidding stage. Operate metals hedge. Subscribe to two forecast information platforms, IHS Markit Commodity Price and Economist Intelligence Unit, both of which are used by estimation, procurement and project control departments. To manage inflation, CTCI has adjusted the percentage of profit appropriately for quoted projects. Besides, the contingency is increased for lowering the risk of group operation.
<ul style="list-style-type: none"> The schedule of procurement was delayed, causing the project's completion date to be delayed as well. <p>Note: The source of material prices is Commodity Information Portal.</p>		

Building Corporate Risk Awareness

To strengthen risk management and enhance the risk awareness of all employees, CTCI has organized lecture training, and security and HSE (health, safety, and environment) activities through management systems and situational drills. Expand professional knowledge, and ensure that all employees understand the importance of risk. Shaping a risk culture, while simultaneously matching rewards and performance will encourage employees to report potential risks, which will help the organization mitigate negative impacts. The annual employee performance evaluation includes behavioral goals established in accordance with the corporate culture. Among them, "Safety First" is the main topic of risk culture. Employees must strictly abide by the SOPs to identify situations that affect safety and respond immediately. By accurately identifying situations that may lead to future danger, we will be able to take immediate action and eliminate or mitigate this danger.

Risk Management Training

In order to strengthen staff's risk awareness, we select some employees to attend trainings and learn to apply risk management in various professional fields. Courses include on-site safety and environmental awareness training, and high-risk operations (such as hot work, electric shock, confined space, height work, hanging operations, etc.). Employees are encouraged to share their experiences in crisis management, which is a way of raising their risk awareness. In addition to internal experience sharing and case study sessions, CTCI employees also aggressively participate in external seminars to learn new information, share experiences with others, with a hope to stimulate creative and an in-depth risk management thinking.

Risk management training

	2019	2020	2021	2022 Target
Training hours	18,737	18,099	15,930	-
Number of staff required to attend training	8,909	10,339	13,274	-
Actual number of staff who attended training	8,878	10,339	13,274	-
Coverage rate 1	99.7%	100%	100%	100%

Emergency response

To reduce the Company's operational risks, we have formulated an "Emergency Response Management Procedure" covering the headquarters and construction sites for specific major risk events such as fires, natural disasters, environmental impact events, air conditioning anomalies, water cuts, power outages, earthquakes, typhoons, floods, fires, protests, or riots. Crisis drills allow our colleagues become familiar with the contingency measures and reduce the impact in the shortest time in the event of a disaster. In the first headquarters building, we conducted the safety training and fire drill for the fire self-defense team members in April 2021 and the annual evacuation drill in November of the same year.

COVID-19 pandemic prevention responses

The COVID-19 virus has been rampaging around the world and no country has been spared. At the outbreak of the pandemic in early 2020, CTCI Group established the epidemic prevention center, consisting of representatives from all business units, namely the chairmen and general managers of all domestic and overseas subsidiaries. CTCI Group Shared Services CEO has assumed the role of the commander-in-chief to activate the epidemic prevention mechanism. Internally, the center is responsible for program risk management based on the principle of maintaining the health of all employees; while externally, the center has established a consensus with proprietors and partners to implement a sustainable operation plan for each program so as to minimize the impact of the pandemic.

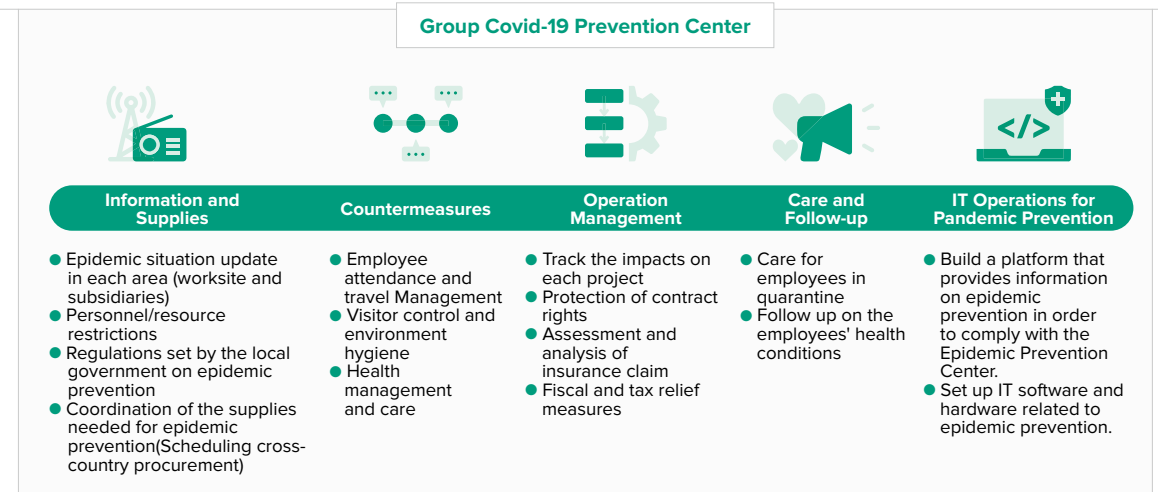
In cooperation with relevant departments at the headquarters, CTCI's pandemic prevention center has compiled pandemic prevention information, actively tracked, verified, evaluated, and notified, and formulated various regulations to supervise the implementation at workplaces across the Group, and regularly convened CTCI global pandemic prevention video conference to issue pandemic prevention reports, so as to accurately grasp the situation in all outlets of CTCI Group and immediately develop countermeasures.

The primary goal of CTCI's pandemic prevention work is to maintain the health of all employees. At the beginning, we established domestic and overseas pandemic prevention notification procedures, distributed masks, and divided into groups to work at home. For employees with foreign assignments, we have planned and provided complete pandemic prevention supplies so that they could be well protected during their travels.

In April 2021, as overseas pandemic worsened rapidly, confirmed cases were found in succession in some of the Group's outlets. CTCI headquarters health center assisted in the planning of telemedicine, temporary medical offices, instruction in the use of oxygen generating machines, bilingual education and promotion, and initiation of care services by Taiwanese and foreign doctors. Shortly after, with the escalation of the pandemic alert in Taiwan in May, confirmed cases were found in CTCI's Taiwan bases, and immediate health tracking and care of confirmed patients and close contacts were conducted. As the pandemic alleviated, in order to ensure the health of our employees and their safe return to work, we have planned and completed a one-time corporate rapid test for our affiliated companies in the north, central and south of Taiwan, and have provided monthly home rapid test kit for our employees to collect upon registration up till now.

To develop group immunity and protect our employees and families, our customers, visitors and communities from infectious diseases, the Group's pandemic prevention center has launched a three-month incentive program in October 2021 to encourage employees to take the COVID-19 vaccine. In December 2021, as the Omicron variant rapidly spread in various countries, the Central Epidemic Command Center began offering the third dose of vaccine. Closely aligned with the government and actively coordinating external resources, we set up a medium-sized vaccination station at the Yangde community center next to the Group's headquarters in February 2022 to serve the residents and employees in CTCI. Besides, we have contacted medical institutions near program construction sites in Taoyuan and Taichung areas, making it easier for employees in both areas to take the third dose of COVID-19 vaccination nearby.

■ Pandemic prevention measures



Business Continuity

CTCI does not have a production plant. We primarily offer engineering, procurement, and construction services. Information system is the main platform which all businesses and operations rely on. In order to ensure our business's continuous operation and reduce the impact in the event of major accidents or disasters, operations are required to follow Business Continuity Plan (BCP) to reduce the Company's operational risks. The 2021 Business Continuity Plan exercise was conducted in May and September, which tested 12 key systems related to engineering, procurement, construction, and project management. The exercise was successful.

Safety Culture

In addition to holding a series of activities for the CTCI group in 2021, various activities are held to strengthen the safety, HSE awareness of all employees, and so that colleagues can learn about the practices that meet corporate culture standards. Managers at all levels are also required to visit construction sites frequently and talk about the importance of safety. Through visible leadership, safety culture can be promoted. From management level to employees on the front line at construction sites, HSE awareness is enhanced. By rewarding projects and personnel with excellent HSE performance, colleagues are encouraged to take responsibility in HSE management to ensure a safe working environment in their daily operations.

■ Safety Series Activities held by CTCI Group in 2021



Information Security

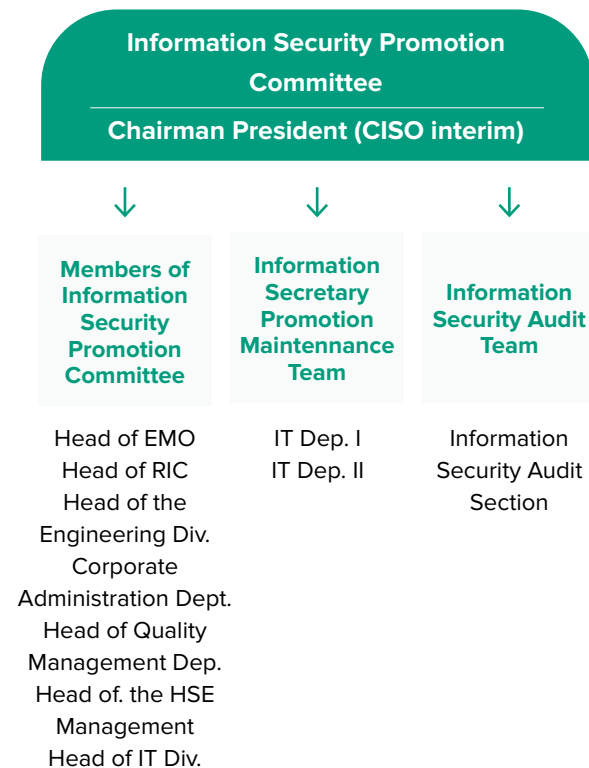
■ CTCI Information Security Policy

Faced with various information security threats nowadays, CTCI has adopted ISO 27001 standards for information risk management since 2014, and is committed to reduce the likelihood and impact from security risks as well as improve the company's ability to carry on business operations. An information security promotion committee was also established, with the President serving as the chairman of the committee. The committee is responsible for the promotion of information security and holds at least one information security management review meeting every year, where they review the risk assessment report, "risk treatment plans," and other matters related to information security management. The outcome of information management needs to be reported to the Board each year.

A complete notification process has been set up for information security-related issues. The Information Security Promotion Committee assists the Chairman of the Information Security Promotion Committee in managing information security goals, and President Todd Chen is doubled as the CISO. Director Johnny Shih, who holds a master's degree in computer science and an MBA degree from Columbia University in the United States, has a solid IT background and provides professional advice related to information security.

In response to the increasing importance of information security and in compliance with the requirements of Taiwan's Financial Supervisory Commission, an independent organization has been established to carry out audit operations.

■ Information Security Team-Information Security Promotion Committee

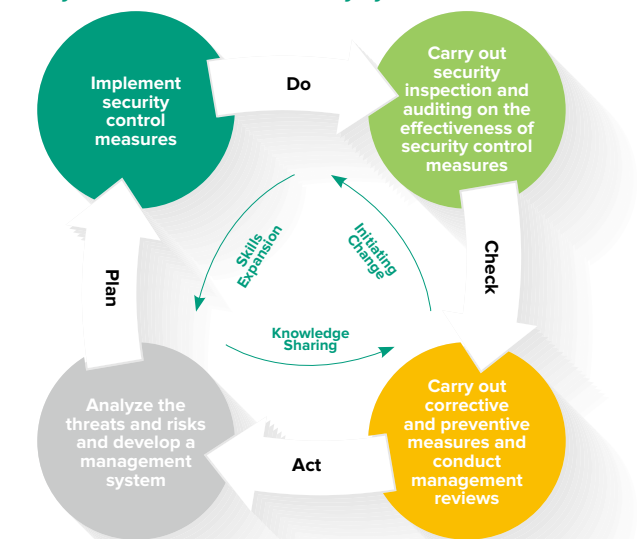


■ Four Major Goals of the CTCI Information Security Policy



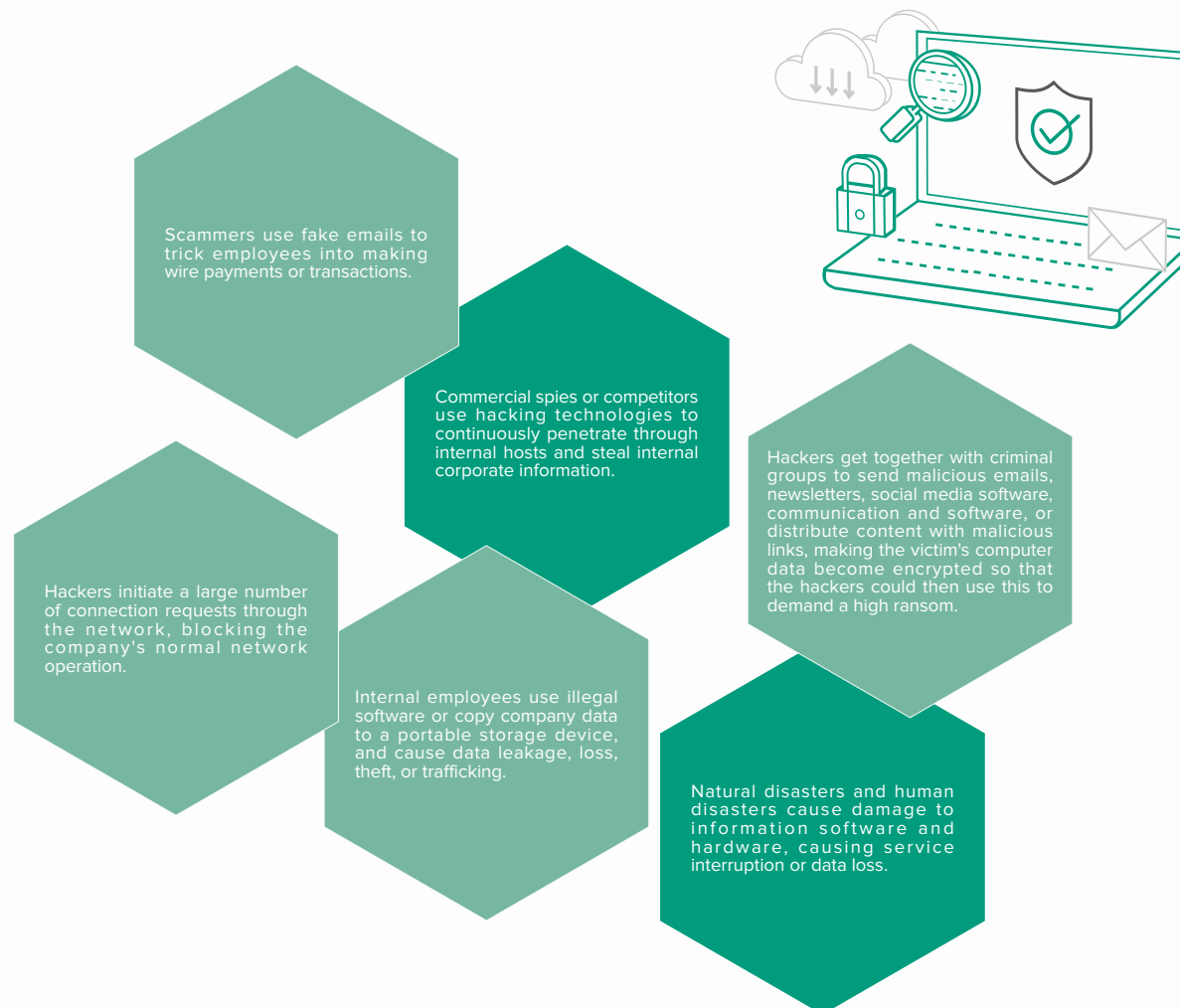
CTCI understands that it is necessary to continuously make improvement by adopting Plan-Do-Check-Act (PDCA) approach when it comes to managing security risks. Three measures, including expanding skills, initiating change, and sharing knowledge, are supplemented to ensure the effectiveness of the overall information security management. In terms of expanding skills, employees who specialize in information technology are encouraged to participate in various types of security-related conferences (such as CYBERSEC), where they can learn about the latest security solutions directly from the supplier. In terms of initiating changes, new control measures, such as USB blocking, digital control for confidential and sensitive documents, private wireless network restrictions, physical isolation in the test area, backup management fortification and inviting external experts to perform cyber security evaluation, are introduced to deal with high information security risks and to reduce the chances of risk occurrence or impact. In terms of knowledge sharing, apart from offline trainings, courses such as social engineering attack prevention and key security advocacy are recorded as digital materials for colleagues to study online.

■ ISMS implementation cycle of CTCI - The management cycle of information security system



Information Security Risk Assessments

Through annual information security risk assessments, CTCI has evaluated possible threats and weaknesses, which include:



In dealing with various information security risks, CTCI has implemented management and key measures related to information security, as well as strengthened its security education and trainings according to the "Information Security Management Regulations." These multiple approaches help improve the information security management mechanism.

■ Key Security Management Measures

Regularly perform internal and external audits, completing internal audit once every six months and external audits once a year, pass and maintain the ISO 27001: 2013 certification, and improve the information security management system operations.

Continue to conduct social engineering attack drills every quarter and provide information security training to enhance employees' awareness regarding email protection.

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.

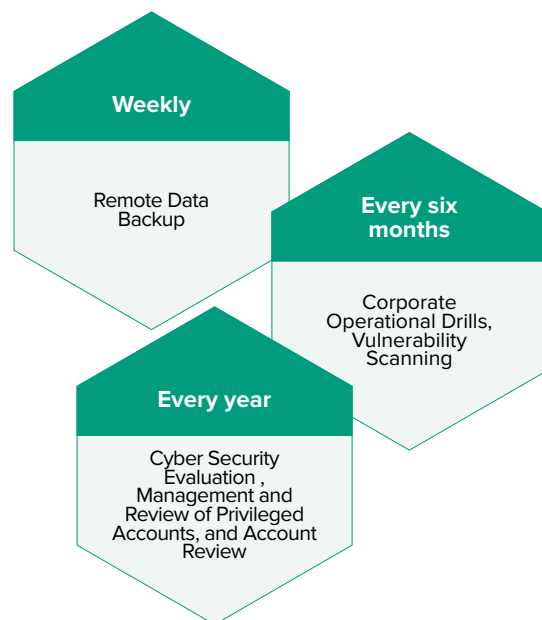
Protect the confidentiality of documents through sensitive document control management system and disk encryption technology.

Ensure a centralized management of host computer, establish environmental control and alert mechanisms for data centers, do regular data backup, and carry out biannual disaster recovery drills.

Investments and Trainings on Information Security

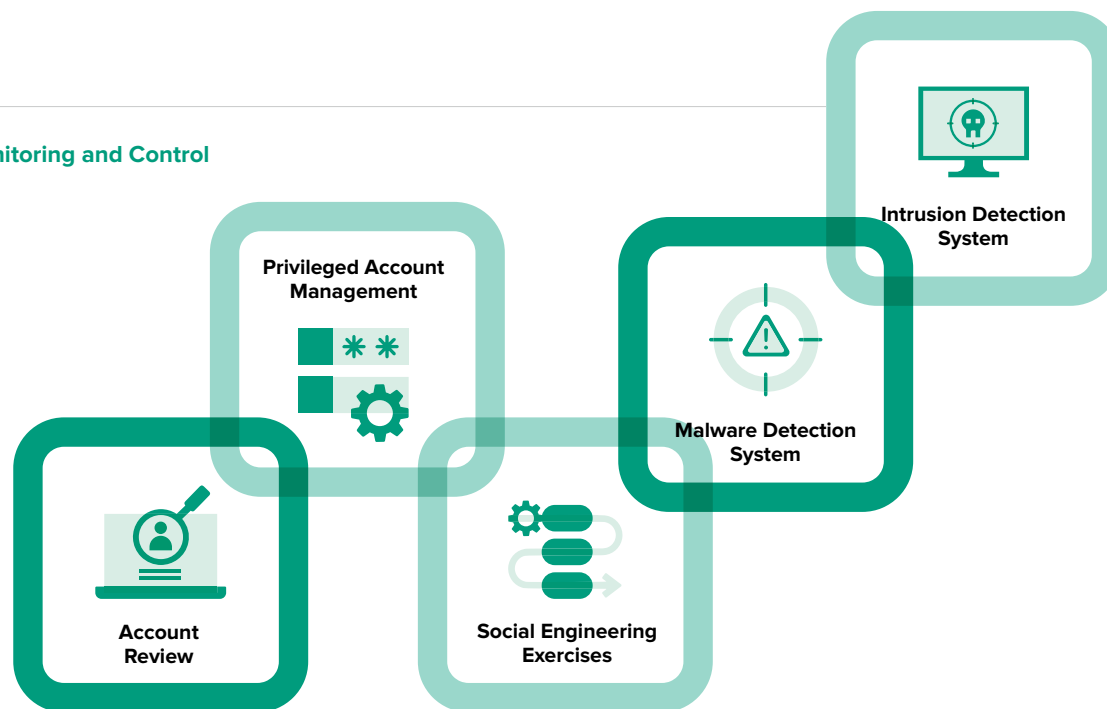
CTCI continues to invest resources in information security every year, including strengthening information security facilities, improving security management systems, and providing education and trainings, and among others. They are fully implemented in terms of management and technical aspects, so as to boost overall information security. To prevent incidents from happening, CTCI not only performs operation drills at Kaohsiung's backup computer facility every six months, but also incorporate weekly remote backup, storage, and testing of important system data, as well as biannual weak spot scanning into security operations.

Frequency of Information Security Affairs



In terms of Advanced Persistent Threat (APT) that has prevailed in recent years, CTCI has adopted the following control measures to reduce such possibility and risk impact.

APT Monitoring and Control



Social engineering attack drills are conducted quarterly to increase information security awareness, where we would randomly pick 50% of employees to participate. Each colleague needs to participate the drill at least twice a year. In 2021, 5,686 people were selected to take part in the drill, with a coverage rate of 100%. Information security announcements were published on the company's internal website so that employees could learn how to use email safely, and the announcements were read by 15,111 employees. We also carried out security trainings specifically designed for the system management employees from the Engineering Division and the IT Division. Total hours of various security trainings reached 1,250 hours. Such courses include: Understanding social engineering attacks and information security, ISO 27001 information security management and implementation, and Microsoft information security training courses.

Information Security Training Overview	Intended audience (Division and Job Category)	Number of People Attended	Training Hours	Coverage rate
Understanding social engineering attacks	Social engineering drills across various divisions medium to high-risk personnel	848	1	100%
ISO 27001 information security management operations	ISO system administrators IT Division / Engineering Division	48	6	100%
Microsoft Information Security Training Course	IT Division	33	3	100%
CYBERSEC	Information Security Audit Section	1	16	100%



■ Information Security Management Outcomes

Information Security KPI	2019	2020	2021	Goals for 2022
Number of Major Information Security Incidents	0	0	0	Number of incidents ≤ 3
Number of cases involving violations of the customer's privacy	0	0	0	Number of incidents = 0
Number of customers who have been affected due to information leakage	0	0	0	Number of customers affected = 0

In response to the increasingly serious threats of malicious and phishing emails, as well as remote working by company's employees due to the pandemic, CTCI conducted drills with realistic social engineering emails consistent with the latest trends in 2021 to cultivate and increase employee vigilance through these exercises. The drill results show the incidence of medium and high risks has increased relative to previous years. Regarding medium and high risks users, the supervisor is required to warn these employees and suspend their rights to use the internet. For new colleagues, they are required to participate in courses such as information security promotion and identification of social engineering phishing email skills to strengthen colleagues' information security awareness. Colleagues can send emails to the fraudulent email notification mailbox "checkmyemail@ctci.com" to ask IT staff to check the increasing number of suspicious emails. This shows that CTCI employees have paid more attention to the best performance indicator of information security awareness.

■ Risk occurrence of social engineering drills over the past three years

	2019	2020	2021
High risk occurrence (from personal information disclosure)	0.99%	2.47%	3.43%
Medium risk occurrence (by clicking email links)	3.63%	7.37%	11.22%
Total fines / Penalties paid for information security incidents	0	0	0



Validity of the ISO 27001 Information Security Management Certificate continues to be maintained (Certificate valid until December 24, 2023)



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Appendix

This year marks the 15th year that CTCI has published Sustainability Report since 2008. As the first company in the engineering service industry in Taiwan to disclose non-financial information, we proactively communicate on our sustainable operation efforts to all stakeholders. The data in this report is mainly based on CTCI, and some data cover the specific subsidiaries of the group and overseas branches. The last Sustainability Report was published in June 2021. In principle, one report is published each year, and the next Sustainability Report is scheduled to be released in June 2023.

About this Report

Timeframe of information disclosure	Scope of information collection: within the organization internally	Scope of information collection: outside the organization	Data Quality Management	GRI Level	Assurance level	Contact
January 1, 2021 to December 31, 2021	CTCI Corporation	Supply chain/ contractors Customers Community Investors Government Media	Financial figures - PricewaterhouseCoopers (PwC) Quality information- ISO 9001:2015 Environmental data- ISO 14001:2015 ISO 14064-1:2018 Social information - ISO 45001:2018 Sustainability data - AA 1000 AS V3 Information security data - ISO 27001:2013	GRI Standards Comprehensive option	TYPE II High level of assurance	<ul style="list-style-type: none"> Joanne Ho Chief Sustainability Officer ESG Office 886-2-28339999 Ext. 18600 lihsien@ctci.com Stella Shih Sustainability & Net Zero Specialist ESG Office 886-2-28339999 Ext. 18602 stella.shih@ctci.com

Scope of information	Within the organization <p>The timeframe of the information disclosed in this Report covers CTCI Corporation's various operations and statistical performance from January 1 to December 31, 2021, in areas ranging from operational management, environmental protection, to social participation. The scope of this Report generally covers CTCI Corporation operations, and excludes its branches overseas and subsidiaries. However, some information does include CTCI's overseas operations. Two of CTCI's subsidiaries, ECOVE Environment Corporation and CTCI Advanced Systems Inc., publish their own Sustainability Reports.</p>	Review	Internal review <p>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. Information and statistics in this Report follow standardized format as part of our internal control to ensure reliability of the numbers and information quality.</p>
	Outside the organization <p>External scope of disclosure includes supply chain/contractors, clients, community, investors, and the government.</p>		External review <p>The financial data found in this Report comes from audited financial data 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), 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 standards, TYPE II High level of assurance, and has been certified by an impartial third party.</p>

CTCI's Sustainable Performance

CTCI Role in Sustainability	Sustainable KPIs	Unit	2019	2020	2021	
Our Reliable Team	Contract Amount NTD Billion	Contract Amount NTD Billion	46,300	130,200	1,259	
	Operating Income NTD Billion	Operating Income NTD Billion	28,400	25,874	307.82	
	Shareholders' Equity	%	28	27	24	
	Signing ratio of Codes of Ethical Conduct	%	100	100	100	
	Coverage rate of Codes of Ethical Conduct Training (Taiwan)	%	100	100	100	
	Number of cases reported through Employee Opinion Platform	-	5	3	4	
	Number of cases accepted on Employee Opinion Platform	-	5	3	2	
	Coverage rate of risk management training	%	99.6	100	100	
	Customer satisfaction score	-	8.25	8.29	8.17	
	Number of suppliers	-	11,708	11,820	11,846	
	Number of Level 1 suppliers	-	193	280	167	
	Number of critical suppliers	-	40	45	39	
	Proportion of critical suppliers	%	20.73	16.07	23.35	
	Proportion of procurement amount from Level 1 suppliers	%	95	95	95	
	Proportion of procurement amount from critical suppliers	%	73.74	60.07	73.55	
	New suppliers signatories to CTCI Vendor Code of Conduct	Number of vendor signitories Percentage of vendor signatories	- %	490 100	344 100	328 100
	Critical vendor signatories to CTCI Vendor Code of Conduct	Number of vendor signatories Percentage of vendor signatories	- %	40 100	45 100	39 100
	Reply rate of Level 1 vendors on supply chain risk assessment	%	81.9	82.5	86.8	
	Reply rate of critical vendors on supply chain risk assessment	%	97.5	100	100	
	High risk ratio of Level 1 vendors	%	9.8	4.6	6.6	
	High risk ratio of Level 1 critical vendors	%	2.5	11.1	10.3	
A Trailblazer of Green Innovation	Greenhouse gas emissions (Scope 1+2)	Tons of CO ₂ e	15,064.8	9,942	9,599	
	EUI of headquarters building	Tons of CO ₂ e/person	1.38	1.31	1.4	
	Emission intensity at headquarters building	kWh/square meter	121.5	120.1	116.4	
	Energy intensity at headquarters building	kWh/person	2,448	2,510	2,612.5	
	Energy intensity at construction sites	Tons of CO ₂ e/million working hours	401.7	293.4	330.94	
	Cost saved from energy conservation at headquarters (power)	TWD	564,725	205,520	1,842,367	
	Water consumption at headquarters	Cubic Meter	18,285	17,551	16,439	
	Waste generated at headquarters (general waste)	Kg	64,760	60,495	56,307	
		Paper	Kg	15,010	14,020	12,060
		Metals	Kg	235	255	288
	Recycling at headquarters	Plastic	Kg	351	271	429
		Kitchen waste	Kg	5,355	4,678	4,786
	Technological R&D expenditure	TWD	113,992,979	100,437,000	144,801,000	

CTCI Role in Sustainability	Sustainable KPIs	Unit	2019	2020	2021	
The Best Employer Who Builds a Brilliant Workplace	Voluntary turnover rate	%	6.36	8.95	9.33	
	Involuntary turnover rate	%	0.67	0.89	0.52	
	Turnover ratio due to poor performance appraisal	%	-	0.51	0.11	
	Total turnover rate	%	7.03	10.35	9.96	
	Recruitment ratio of indigenous people	%	0.44	0.35	0.41	
	Recruitment ratio of people with disabilities	%	1.11	1.15	1.19	
	Number of nationalities of employees (excluding R.O.C. nationality)	-	10	10	12	
	Female employee ratio	%	23.43	23.97	25.34	
	Female supervisor ratio	%	13.08	13.54	13.82	
	Replenishment rate of job vacancies filled internally	%	63.15	60	65.52	
	Average training hours	Hour	80.99	68.26	66.36	
	Score of Kirkpatrick Training Evaluation	-	8.07	7.81	8.32	
	Parental leave application rate	%	16.92	23.48	21.88	
	Health check rate	%	91.9	89.9	86.4	
	CTCI's rate of recordable work-related injuries	-	0.02	0.03	0	
	Subcontractor's rate of recordable work-related injuries	-	0.08	0.09	0.12	
	Occupational illness frequency rate	-	0	0	0	
A Corporate Citizen Willing to Commit	Social investment	TWD	17,425,000	15,301,934	21,200,390	
	Category	Charity activity ratio	%	11	3	22
		Community investment ratio	%	41	45	37
		Commercial activities ratio	%	48	52	41
	Type of contribution	Cash donation ratio	%	65.10	85.90	97.49
		Goods donation ratio	%	1.19	0.65	0.19
		Volunteer ratio	%	6.90	13.43	2.25
		Management cost ratio	%	0.22	0.02	0.07

Material Issues Target Progress

Material Issues	2021 Target	Status	2022 Target
Innovative technology and services	KPI 1 Complete 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 Introduction of new technologies and new skills: 3 items
Supply chain sustainability management	KPI 1 Organize the 2021 Supplier meeting online	Achieved	KPI 1 Percentage of Level 1 critical supplier becoming signatories to Vendor Code of Conduct: 100%
	KPI 2 Proportion of vendors with purchase order that signed Vendor Code of Conduct for the year: 88%.	Achieved	KPI 2 Proportion of vendors with purchase order that signed Vendor Code of Conduct for the year: 90%
	KPI 3 Supplier sustainability research: 85% of Level 1 vendors survey completed	Achieved	KPI 3 Supplier sustainability research: 88% of Level 1 vendors survey completed
	KPI 4 Improvement rate on deficiencies identified during ESG audit on high-risk key suppliers: 70%	Achieved	KPI 4 Improvement rate on deficiencies identified during ESG audit on high-risk key suppliers: 75%
Integrity Management	KPI 1 Rate of completion of the integrity management courses among employees: 90%	Achieved	KPI 1 Rate of completion of the integrity management courses among employees: 90%
Brand Management	KPI 1 170 media reports on CTCI	Achieved	KPI 1 200 media reports on CTCI
Climate Change and Energy Conservation	KPI 1 CO ₂ emissions per person (headquarters buildings): 1.41 tons CO ₂ e/person (The base year is 2018)	Achieved	KPI 1 CO ₂ emissions per person (headquarters buildings): 1.38 tons CO ₂ e/person
	KPI 2 CO ₂ emissions per million hours of work (construction sites): 471.2 tons CO ₂ e	Achieved	KPI 2 CO ₂ emissions per million hours of work (construction sites): 426.8 tons CO ₂ e
Environmentally friendly technology and application	KPI 1 More than 10% of renewable / recycled materials are used	In progress	KPI 1 Percentage of projects that adopt at least one green process: 80%
	KPI 2 More than 1% of total revenues comes from green projects	Achieved	KPI 2 Percentage of projects that are low-carbon and green: 30%
	KPI 3 Percentage of low-carbon and environmental projects: 30%	Achieved	KPI 3 Percentage of projects that proposed at least one energy-saving and carbon reduction effort: 20%
Safe and healthy work environment	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
	KPI 2 Health abnormalities tracking rate: 91%	Achieved	KPI 2 Health abnormalities tracking rate: 91%
Career development and training	KPI 1 Core competencies and inventory and confirmation of key positions: 100%	In progress	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%
	KPI 4 Completion rate of career development and job rotation: 100%	In progress	KPI 4 Completion rate of career development and job rotation: 100%
Recruitment and retention	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%	In progress	KPI 3 Tailor-made training and planning architecture: 100%
Social involvement	KPI 1 Event themes: 22 items	Achieved	KPI 1 Event themes: 22 items
	KPI 2 Event sessions: 111 sessions	Achieved	KPI 2 Event sessions: 111 sessions
	KPI 3 Total event participants and submissions: 9,800 people and 75 submissions	Achieved	KPI 3 Total event participants and submissions: 9,800 people and 75 submissions
	KPI 4 Number of partners: 68	Achieved	KPI 4 Number of partners: 68

Management Approach

	Innovative technology and service	Supply chain sustainability management	Brand Management	Integrity management
Commitment	Through innovation, sophisticated expertise and increased access to intelligent technology, we aim to enhance design quality, improve project execution efficiency and capabilities, and provide differentiated services.	Strengthen and enhance the sustainable management performance of manufacturers by having them sign commitment letters of Corporate Sustainable Management and carrying out audits on their sustainable performance, so as to form a positive cycle and increase the manufacturers' level of sustainable impact.	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.	Corporate culture of integrity management helps bring a sound business operation and risk management, and lay the foundation of sustainable business.
Strategy	<ul style="list-style-type: none"> ● Rule-based (Rules) design development ● Intelligent EPC (EPC turnkey) project development ● Cultivate colleagues' awareness for new technologies ● Maintain innovative R&D dynamic 	<ul style="list-style-type: none"> ● Increase ESG communications through Supplier Meetings ● Promote an assessment system capable of conducting assessments ● Implement local procurement 	Strengthen reputation management of the Group and enhance brand image	<ul style="list-style-type: none"> ● Enhance awareness on the core value of integrity management ● Implement performance assessment and reporting mechanism
Goals (2025)	<p>KPI 1 Rule-based design development reaches annual target: 100%</p> <p>KPI 2 Intelligent EPC projects development reaches annual target: 100%</p> <p>KPI 3 Smart EPC development projects achieve 100% of annual planning targets</p> <p>KPI 4 Carry out research on or introduce 5 new technologies annually</p>	<p>KPI 1 Proportion of Level-1 suppliers to sign letters of commitment to sustainable management for the given year: 100%</p> <p>KPI 2 ESG questionnaire recovery ratio among Level-1 suppliers: 100%</p> <p>KPI 3 Audit rate of key suppliers with high sustainable risks: 100%</p> <p>KPI 4 Incompliance improvement rate of key suppliers with high sustainable risks: 75%</p>	KPI 1 Strengthen reputation management of the Group and enhance brand image	<p>KPI 1 Integrity management courses completion rate among employees: 100%</p> <p>KPI 2 Integrity management courses completion rate among employees: 100%</p> <p>KPI 3 Performance management courses completion rate: 100%</p> <p>KPI 4 Review the code of conduct</p>
Program	<ul style="list-style-type: none"> ● Introduce intelligent innovation to process ● Research and development design technology 	<ul style="list-style-type: none"> ● Enhance awareness of code of conduct ● Convene supplier meeting ● Perform audit and corrective measures 	<ul style="list-style-type: none"> ● Improve media relations ● Improve digital marketing ● Foster fast response capability to deal with crises 	<ul style="list-style-type: none"> ● Employee education and training ● Code of conduct promotion
Responsibility	Engineering Division, Research and Innovation Center	Procurement Division	Brand Management Department	Human Resource Department
Mechanism	External evaluation and customer satisfaction survey	DJSI evaluation and customer feedback	Group Press Release Management Regulations, Group Media Interview Invitation Management Regulations, Group Awards Participation and Award Record Management Regulations	External reporting mechanism
Impact	Improved customer satisfaction rate, showing a positive trend	Level 1 supplier risk ratio shows a positive trend	Number of media exposures shows a positive trend	Top 5% in corporate governance evaluation, showing a positive trend

Customer service and management

Efforts on climate change and Net Zero emissions

Net Zero EPC and Green Engineering

Safe and healthy work environment

Commitment	We will uphold the corporate mission "To Satisfy Our Customers with Optimized Engineering Services," constantly overcome obstacles and challenge ourselves, take CTCI to the world 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.	Utilizing the concept of circular economy, meet the sustainability goal of earth resources from three aspects including circular supplies, resource recovery and extending lifespan of products and assets.	Provide a safe and secure workplace, promote various health promotion activities, reduce occupational disaster rate and construction risks, create a healthy workplace, and enhance employee loyalty.
Strategy	<ul style="list-style-type: none"> Standardize operation procedures Integrate internal and external units to bring effective customer communication 	<ul style="list-style-type: none"> Strengthen energy management Use renewable energy 	<ul style="list-style-type: none"> Increase use of renewable energy plan energy saving of application system Promote CTCI green construction label 	<ul style="list-style-type: none"> Implement self-management of HSE at construction sites Ingrain the HSE culture into the minds of all employees Increase employees' awareness of and capabilities in HSE Develop and introduce the Group Health Care Platform
Goals (2025)	<p>KPI 1 Customer satisfaction: 8 points</p> <p>KPI 2 Response rate of customer satisfaction survey: 100%</p>	<p>KPI 1 Reduction of GHG emissions in offices: 30%</p> <p>KPI 2 CO₂ emissions per person at headquarters: 1.28 tons CO₂e/ person</p> <p>KPI 3 CO₂ emissions per 1 million working hours (manufacturing sites): 426.8 tons</p>	<p>KPI 1 The proportion of projects that used at least 1 green technical method: 100%</p> <p>KPI 2 The proportion of projects that undertook low carbon and green engineering: 50%</p> <p>KPI 3 The proportion of projects that made at least 1 engineering proposal delivering energy saving and carbon reduction value: 50%</p>	<p>KPI 1 Frequency of OSHA total recordable case rate (TRCR): ≤ 0.1</p> <p>KPI 2 Health check abnormalities tracking rate: 95%</p>
Program	<ul style="list-style-type: none"> Standards / procedures for improving service quality Hold competitions to enhance employees' awareness Conduct satisfaction surveys on 24 projects 	<ul style="list-style-type: none"> Climate risk management Greenhouse Gas Examination and Reduction 	<ul style="list-style-type: none"> Promote low-carbon engineering Green technology R&D 	<ul style="list-style-type: none"> HSE forums for partner firms Education and training about construction sites Workplace health promotion
Responsibility	Project & Sales Dept.	The entire company	Design department	HSE Management Department and AGS Department
Mechanism	Quality management review meeting	DJSI external rating , CDP external rating, ISO 14064	DJSI external rating	ISO 45001
Impact	Customer satisfaction has improved, showing a positive trend	Scored B in 2021 CDP rating, showing a negative trend	Operational revenue from green engineering increases, showing a positive trend	Increasing number of occupational accidents, showing a negative trend

Career development and training

Recruitment and retention

Social involvement

Commitment	Make comprehensive training plans and provide a systematic and planned career development pathway based on different organizational structures and hierarchies, so as to achieve the goal of talent recruitment, talent cultivation, and talent discovery for CTCI.	With the aid of new technologies and behavioral-structured interviews, improve talent recruitment and retention rate, provide a perfect and competitive compensation plan, and provide a friendly and healthy workplace for perfect learning and development, so as to achieve the goal of talent retention.	Based on its own professional core competencies, CTCI is committed to giving back to the society, promoting green and friendly technology application, as well as cultivating talents for sustainable engineering, so as to enhance the Company's brand image and continue with green business innovation and development.
Strategy	<ul style="list-style-type: none"> Support from supervisors at all levels Systematic structure (e.g., CTCI University) Refer to related assessment and conduct online and offline integration Conduct 1:1 teaching and coaching 	<ul style="list-style-type: none"> Diverse recruitment channels Competitive salary and friendly workplace Well-rounded training and job rotation Career development based on company growth and personal interests 	<ul style="list-style-type: none"> Cooperate with external organizations to organize events Combine the concept of public welfare in its operational core competencies Host international cooperation seminars Take part in sustainability initiatives
Goals (2025)	<p>KPI 1 Professional competence achievement rate 95%</p> <p>KPI 2 IDP achievement rate 95%</p> <p>KPI 3 Career planning path completion rate 85%</p>	<p>KPI 1 Enhance the technical capability of key personnel and achieve a 5.0 competency rating</p> <p>KPI 2 Salary market positioning standard, annual review and adjustment of salary system</p> <p>KPI 3 Develop long-term incentive compensation tools such as restricted stock plans</p>	<p>KPI 1 Event themes: 20</p> <p>KPI 2 Even sessions: 135</p> <p>KPI 3 Number of participants: 12,500</p> <p>KPI 4 Number of parties involved in the industry-government-academia cooperation: 100</p>
Program	<ul style="list-style-type: none"> Promote CTCI University Elite talent development plan 	<ul style="list-style-type: none"> Campus / international talent recruitment Incentives for long-term retention Employee engagement survey 	<ul style="list-style-type: none"> Total participation ESG excellence practice Promotion of campus and youth sustainable activities
Responsibility	Human Resources Department	Human Resources Department	CTCI Education Foundation
Mechanism	Human Resources Development Committee	Human Resources Development Committee	External evaluations and feedback from stakeholders
Impact	Average training hours decreased, showing a negative trend	Turnover rates increase, showing a negative trend	Received external evaluation awards, showing a positive trend

Average salary for year 2021

Item	2020	2021	Discrepancy between 2020 and 2021
Number of full-time employees who are not in supervisory positions	2,565	2,532	-1.30%
Average salary of full-time employees who are not in supervisory positions (in thousand NTD)	1,141	1,191	4.20%
Median salary of full-time employees in non-supervisory positions (in thousand NTD)	1,022	1,074	4.84%

Major occupational accident events in 2021 (as of the end of March 2022)

Date	Project	Accident	Cause of violation	Regulations	Penalty	Resumption of work
1 2021/2/7	Southern Taiwan Science Park WWRU DBOO	Fatal Accident	The safety protection equipment or measures necessary for the work have not been properly secured and adjusted.	Article 27, Occupational Safety and Health Act	NTD\$150,000 fine	Relevant improvement measures have been completed. Approved to resume work on 3/12/2021.
2 2021/7/3	Taichung Power Plant Coal Handling System	Fatal Accident	The safety protection equipment or measures necessary for the work have not been properly secured and adjusted. Moreover, the contract management plan has not been implemented.	Articles 23 & 27, Occupational Safety and Health Act	Work suspended NTD\$210,000 fine	Relevant improvement measures have been completed. Approved to resume work on 9/3/2021.
3 2021/10/21	Southern Taiwan Science Park WWRU DBOO	Fire	The employers shall prevent the risks of injuries posed by materials with an explosive or flammable nature.	Article 6, Occupational Safety and Health Act	Work suspended NTD\$60,000 fine	Relevant improvement measures have been completed. Approved to resume work on 11/4/2021.
4 2022/1/15	CGTDC Petrochemical Tank	Fatal Accident	N/A	N/A	Work suspended	N/A

Notes — On January 15, 2022, one fatal accident occurred at CGTDC Petrochemical Tank. We fully cooperate with the Kaohsiung Labor Inspection Office to conduct relevant investigations. The Kaohsiung City Labor standards Inspection Office has agreed to the first-stage manhole slotting plan, and the follow-up cleanup plan and work resumption plan are still being reviewed and approved by the Kaohsiung City Labor standards Inspection Office.

GRI Standards Index

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102-8*	Information on employees and other workers	Talent Recruitment and retention	72
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102-10*	Significant changes to the organization and its supply chain	No significant changes.	-
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GRI 102: General Disclosures

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102-24	Nominating and selecting the highest governance body	Business Integrity	126
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102-26	Role of highest governance body in setting purpose, values, and strategy	Policy and Organization	14
102-27	Collective knowledge of highest governance body	Please refer to P.89 of 2021 Annual Report	-
102-28	Evaluating the highest governance body's performance	Business Integrity	126
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102-32	Highest governance body's role in sustainability reporting	Policy and Organization/About This Report	14 / 138
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102-35	Remuneration policies	Corporate Governance P.56, 57, 247-248 of 2021 Annual Report	126
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102-38	Annual total compensation ratio	Corporate Governance	126
102-39	Percentage increase in annual total compensation ratio	Corporate Governance	126
102-40*	List of stakeholder groups	Materiality and Stakeholder Communication	20
102-41*	Collective bargaining agreements	No collective bargaining agreements	-
102-42*	Identifying and selecting stakeholders	Materiality and Stakeholder Communication	20

GRI 102: General Disclosures

Goals (*indicates core disclosures)	Explanation of procedures	Corresponding Chapter(s)	Page
102-43*	Approach to stakeholder engagement	Materiality and Stakeholder Communication	20
102-44*	Key topics and concerns raised	Materiality and Stakeholder Communication	20
102-45*	Entities included in the consolidated financial statements	Please refer to Appendix1-P16-19 of 2021 Annual Report	-
102-46*	Defining report content and topic Boundaries	About This Report Materiality and Stakeholder Communication	138 / 20
102-47*	List of material topics	Materiality and Stakeholder Communication	20
102-48*	Restatements of information	No significant change	-
102-49*	Changes in reporting	No significant change	-
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GRI 103: Management Approach

Goals (*indicates core disclosures)	Explanation of procedures	Corresponding Chapter(s)	Page
103-1	Explain materiality and their boundaries	Materiality and Stakeholder Communication	20
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STANDARD DISCLOSURES PART : Topic-specific Standards

GRI 200: Economic Series

Series	Indicator	Explanation of procedures	Corresponding Chapter(s)	Page
GRI 201: Economic Performance	201-1	Direct economic value generated and distributed	Financial Performance	10
	201-2	Financial implications and other risks and opportunities due to climate change.	Strengthen Climate Resilience SASB Index	56
	201-3	Defined benefit plan obligations and other retirement plans	Talent Recruitment and Retention	72
GRI 202**: Market Presence	202-1	Ratios of standard entry level wage by gender compared to local minimum wage	Talent Recruitment and Retention	72
	202-2	Proportion of senior management hired from the local community	Talent Recruitment and Retention	72
GRI 203: Indirect Economic Impacts	203-1	Infrastructure investments and services provided supported	Social Impact	112
	203-2	Significant indirect economic impacts	Social Impact	112
GRI 204**: Procurement Practices	204-1	Proportion of spending on local suppliers	Sustainable Supply Chain Management	40
GRI 205**: Anti-corruption	205-1	Operations assessed for risks related to corruption	Business Integrity	26
	205-2	Communication and training about anti-corruption policies and procedures	Business Integrity	26
	205-3	Confirmed incidents of corruption and actions taken	Business Integrity	26
GRI 206**: Anti-competitive Behavior	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	No such events occurred in 2021	-

GRI 300: Environmental Series

Series	Indicator	Explanation of procedures	Corresponding Chapter(s)	Page
GRI 301: Materials	301-1	Materials used by weight or volume	Environment and Energy Resource Management	63
	302-1	Energy consumption within the organization	Strengthen Climate Resilience	56
GRI 302**: Energy	302-2	Energy consumption outside of the organization	Strengthen Climate Resilience	56
	302-3	Energy intensity	Strengthen Climate Resilience	56
	302-4	Reduction of energy consumption	Pioneer in Applying Eco- Friendly Technologies	50
	302-5	Reductions in energy requirements of products and services	Pioneer in Applying Eco- Friendly Technologies	50
	303-3	Water withdrawal	Environment and Energy Resource Management	63
GRI 303: Water And Effluents 2018	303-4	Water discharge	Environment and Energy Resource Management	63
	303-5	Water consumption	Environment and Energy Resource Management	63
	305-1	Direct (Scope 1) GHG emissions	Strengthen Climate Resilience	56
GRI 305**: Emissions	305-2	Energy indirect (Scope 2) GHG emissions	Strengthen Climate Resilience	56
	305-3	Other indirect (Scope 3) GHG emissions	Strengthen Climate Resilience	56
	305-4	GHG emissions intensity	Strengthen Climate Resilience	56
	305-5	Reduction of GHG emissions	Pioneer in Applying Eco- Friendly Technologies	50
	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	No Emissions	-
	306-2	Waste by type and disposal method	Environment and Energy Resource Management	20 / 63
GRI 306: Effluents and Waste	306-3	Significant spills	Environment and Energy Resource Management	63
	306-4	Transport of hazardous waste	Environment and Energy Resource Management	63
	306-5	Waste directed to disposal	Environment and Energy Resource Management	63
	307-1	Non-compliance with environmental laws and regulations	To be confirmed Environment and Energy Resource Management	63
GRI 307: Environmental Compliance	308-1	New suppliers that were screened using environmental criteria	Sustainable Supply Chain Management	40
GRI 308**: Supplier Environmental Assessment	308-2	Negative environmental impacts in the supply chain and actions taken	Sustainable Supply Chain Management	40

GRI 400: Social Series

Series	Indicator	Explanation of procedures	Corresponding Chapter(s)	Page
GRI 401**: Employment	401-1	New employee hires and employee turnover	Talent Recruitment and Retention	72
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Talent Recruitment and Retention	72
	401-3	Parental leave	Talent Recruitment and Retention	72
GRI 402: Labor/ Management Relations	402-1	Minimum notice periods regarding operational changes	Professional talents are the lifeline in CTCI's sustainable development. Therefore, unless an employee breaches the labor contract or violates legal regulations, CTCI has never fired an employee. 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 403**: Occupational Health and Safety	403-1 (Management Approach)	Occupational health and safety management system	Safe and Healthy Work Environment	97
	403-2 (Management Approach)	Hazard identification, risk assessment, and incident investigation	Safe and Healthy Work Environment	97
	403-3 (Management Approach)	Occupational health services	Safe and Healthy Work Environment	97
	403-4 (Management Approach)	Worker participation, consultation, and communication on occupational health and safety	Safe and Healthy Work Environment	97
	403-5 (Management Approach)	Worker training on occupational health and safety	Safe and Healthy Work Environment	97
	403-6 (Management Approach)	Promotion of worker health	Safe and Healthy Work Environment	97
	403-7 (Management Approach)	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Safe and Healthy Work Environment	97
	403-8	Workers covered by an occupational health and safety management system	Safe and Healthy Work Environment	97
	403-9	Work-related injuries	Safe and Healthy Work Environment	97
	403-10	Work-related ill health	Safe and Healthy Work Environment	97
GRI 404**: Training and Education	404-1	Average hours of training per year per employee	Career Development and Training	80
	404-2	Programs for upgrading employee skills and transition assistance programs	Career Development and Training	80
	404-3	Percentage of employees receiving regular performance and career development reviews	Career Development and Training	80
GRI 405**: Diversity and Equal Opportunity	405-1	Diversity of governance bodies and employees	Corporate Governance Talent Recruitment and Retention	126 / 72
	405-2	Ratio of basic salary and remuneration of women to men	Talent Recruitment and Retention	72

GRI 400: Social Series

Series	Indicator	Explanation of procedures	Corresponding Chapter(s)	Page
GRI 406: Non-discrimination	406-1	Incidents of discrimination and corrective actions taken	No incidents of discrimination occurred in 2021	-
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 254 employees in CTCI and the domestic subsidiaries under the Group Engineering Business participated in the Company's union, accounting for 8.07%.	40 / 92
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	40 / 92
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	40 / 92
GRI 410: Security Practices	410-1	Security personnel trained in human rights policies or procedures	Since the administration of the CTCI headquarters is contracted and assumed by external professional property management company, besides basic task training, each security personnel is also trained for visions of human rights, and routinely instructs "Standardized Procedures for Trespass from Unidentified Personnel", "Standardized Procedures for Dealing with Crowd Demonstration", "Timing and Steps of Performing CPP", and "Manners Education" courses during educational training.	-
GRI 412: Human Rights Assessment	412-2	Employee training on human rights policies or procedures	Labor Rights and Human Rights	92
GRI 413**: Local Communities	413-1	Operations with local community engagement, impact assessments, and development programs	Social Influence (Implemented in all locations)	112
	413-2	Operations with significant actual and potential negative impacts on local communities	Social Influence (No significant actual or potential negative impact)	112
GRI 414**: Supplier Social Assessment	414-1	New suppliers that were screened using social criteria	Sustainable Supply Chain Management	40
	414-2	Negative social impacts in the supply chain and actions taken	Sustainable Supply Chain Management	40
GRI 415: Public Policy	415-1	Political contributions	We are politically neutral and have not donated to any political parties, politicians, or related institutions.	-
GRI 418**: Customer Privacy	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	No such events occurred in 2021	-
GRI 419: Socioeconomic Compliance	419-1	Non-compliance with laws and regulations in the social and economic area	Appendix- Major occupational accident events in 2021	145

Other Material Topics

Topic	Explanation of procedures	Corresponding Chapter(s)	Page
Innovative Technology and Service	Development and application of innovative technology and services	Innovative Technologies and Services	30
Brand Management	Brand positioning, brand marketing strategy, and brand performance index, etc.	Brand Management	38

Notes — For the above articles, GRI Standards 2018 is referred to by GRI 303 and 403, and GRI Standards 2016 is referred to by all other goals. Material topics are marked by **.

SASB Index

Topic	Code	Units of Measurement	Accounting Index	Chapter	Page
Project's environmental impact	IF-EN-160a.1	Quantity	Number of cases in violation of environmental permits, standards or regulations	No such events occurred in 2021	-
	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.	Environment and Energy Resource Management	37
Structural integrity and safety of the construction	IF-EN-250a.1	Amount	Reconstruction costs related to defects and safety	Customer Service	33
	IF-EN-250a.2	Amount	The total monetary cost of legal proceedings due to defects and safety-related reconstruction	Customer Service	33
Workers' health and safety	IF-EN-320a.1	Ratio	1. Employees' accident and death rates	Safe and Healthy Work Environment	97
			2. Contractors' accident and death rates	Safe and Healthy Work Environment	97
Life cycle assessment of constructions	IF-EN-410a.1	Quantity	1. The number of projects that have passed the third-party sustainability certification	Pioneer in Applying Eco- Friendly Technologies	50
			2. The number of projects seeking such certification	Pioneer in Applying Eco- Friendly Technologies	50
	IF-EN-410a.2	None	Discussion on incorporating operational energy and water usage efficiency factors into project planning and design	Pioneer in Applying Eco- Friendly Technologies	50
Climate impact	IF-EN-410b.1	Amount	Total monetary amount of fossil fuel and renewable energy projects in the backlog of contracts	Pioneer in Applying Eco- Friendly Technologies	50
	IF-EN-410b.2	Amount	Total monetary amount of fossil fuel projects being cancelled in the backlog of contracts	Pioneer in Applying Eco- Friendly Technologies	50
	IF-EN-410b.3	Amount	The total monetary amount of non-energy projects related to climate change mitigation in the backlog of contracts	Pioneer in Applying Eco- Friendly Technologies	50
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 Integrity	26
	IF-EN-510a.2	Amount	The total monetary cost of legal proceedings arising from violations of bribery/ corruption and anti-competitive behavior laws and regulations	Business Integrity	26
	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 Integrity	26
Activity indicators	IF-EN-000.A	Quantity	Number of backlog of contracts	Group Operations	7
	IF-EN-000.B	Quantity	Number of completed projects	Group Operations	7
	IF-EN-000.C	Amount	Monetary amount of backlog of contracts	Group Operations	7

Third-Party Assurance Statement



ASSURANCE STATEMENT

SGS TAIWAN LTD.'S REPORT ON SUSTAINABILITY ACTIVITIES IN THE CTCI CORPORATION'S SUSTAINABILITY REPORT FOR 2021

NATURE AND SCOPE OF THE ASSURANCE/VERIFICATION

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 2021 (hereinafter referred to as the SR Report). The scope of the assurance, based on the SGS Sustainability Report Assurance methodology, included the sampled text, and data in accompanying tables, contained in the report presented during verification. 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 SR Report of 2021 and its presentation are the responsibility of the directors or governing body (as applicable) and the management of CTCI. SGS has not been involved in the preparation of any of the material included in the Report.

Our responsibility is to express an opinion on the text, data, graphs and statements within the scope of verification 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, including the Principles contained within the Global Reporting Initiative Sustainability Reporting Standards (GRI Standards) 101: Foundation 2016 for report quality, and the guidance on levels of assurance contained within the AA1000 series of standards and guidance for Assurance Providers.

The assurance of this report has been conducted according to the following Assurance Standards:

Assurance Standard Options and 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:

Select specific reporting criteria included in the contract

Reporting Criteria Options

1. GRI Standards (Comprehensive)
2. AA1000 Accountability Principles (2018)

- evaluation of content veracity of the sustainability performance information based on the materiality determination at a high level of scrutiny for CTCI and moderate level of scrutiny for subsidiaries, joint ventures, and applicable aspect boundaries outside of the organization covered by this report;
- AA1000 Assurance Standard v3 Type 2 evaluation of the report content and supporting management systems against the AA1000 Accountability Principles (2018); and
- evaluation of the report against the requirements of Global Reporting Initiative Sustainability Reporting Standards (100, 200, 300 and 400 series) claimed in the GRI content index as material and in accordance with.

ASSURANCE METHODOLOGY

The assurance comprised a combination of pre-assurance research, interviews with relevant employees, superintendents, Sustainability 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, Task Force on Climate-related Financial Disclosures (TCFD) and SASB related disclosures and SASB 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 verification, 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.

VERIFICATION/ ASSURANCE OPINION

On the basis of the methodology described and the verification work performed, we are satisfied that the specified performance information included in the scope of assurance is accurate, 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.

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AA1000 ACCOUNTABILITY PRINCIPLES (2018) CONCLUSIONS, FINDINGS AND RECOMMENDATIONS

Inclusivity

CTCI has demonstrated its commitment to stakeholder inclusivity through formalised commitment from the highest governing body. A variety of engagement efforts such as survey and communication to employees, customers, investors, suppliers, CSR experts, and other stakeholders are implemented to underpin the organization's understanding of stakeholder concerns.

Materiality

CTCI has established effective processes for determining issues that are material to the business. Formal review has identified stakeholders and those issues that are material to each group and the report addresses these at an appropriate level to reflect their importance and priority to these stakeholders.

Responsiveness

The report includes coverage given to stakeholder engagement and channels for stakeholder feedback. Specific performances related to material topic are recommended to be reported in a more balance way to address stakeholder concerns.

Impact

CTCI has performed processes to understand, measure, evaluate and manage the organisation's impacts that are applied across the organisation under the governance of senior management. Qualitative and quantitative monetised measurements are presented to communicate the specific performances. Methodologies for assessing potential positive and negative impacts are to be further described in future reports.

GLOBAL REPORTING INITIATIVE REPORTING STANDARDS CONCLUSIONS, FINDINGS AND RECOMMENDATIONS

The report, CTCI's SR Report of 2021, is adequately in line with the GRI Standards in accordance with Comprehensive Option. The material topics and their boundaries within and outside of the organization are properly defined in accordance with GRI's Reporting Principles for Defining Report Content. Disclosures of identified material topics and boundaries, and stakeholder engagement, GRI 102-40 to GRI 102-47, are correctly located in content index and report. For future reporting, it is recommended to emphasize more on CTCI's involvements with the identified impacts for each material topic (103-1). It should also have more detailed explanation on how the reporting information align with the boundaries of the identified material topics. Information collection and consolidation mechanisms are to be strengthened to allow better data qualities in future reports.

Signed:

For and on behalf of SGS Taiwan Ltd.

David Huang
Senior Director
Taipei, Taiwan
18 May, 2022
www.sgs.com



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