

Identification results of the main risks and opportunities of climate change

Impact range

Potential financial impact

Management measures taken by CTCI

1.5°C Scenario: Transformation

- 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.

- Within the Organization
- Customers' side

- Decrease in revenue
- Increase in operating cost
- Increase in capital expenditure
- Decrease in asset value

- 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.



Risks

NDC Scenario: Regulatory

- 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.

- Within the Organization
- Customers' side
- Supply chain

- Increase in operating costs
- Increase in capital expenditure
- Decrease in asset value

- 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

- 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.

- Supply chain
- Within the Organization

- Increase in operating cost
- Decrease in asset value

- 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.

1.5°C Scenario: Transformation

- 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.

- Supply chain
- Within the Organization
- Customers' side

- Increase in revenue
- Decrease in operation cost
- Decrease in capital expenditure
- Increase in capital gain
- Increase in asset value

- 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

- 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.

- Customers' side

- Increase in revenue
- Reduction in capital expenditure

- 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

- 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.

- Within the Organization

- Increase in revenue
- Decrease in operation cost
- Reduction in capital expenditure
- Increase in capital gain
- Increase in asset value

- 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.



Opportunities