

# Risk Management Operations

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The 7<sup>nd</sup> meeting of the 4<sup>th</sup> audit Committee and the 8<sup>rd</sup> meeting of the 16<sup>th</sup> Board of Directors.



# Execution Results Report of Risk Management

- Risk Identification Overview
- Risk of Operational
- Risk of HSE
- Risk of Quality Management Processes
- Risk of Information Security
- Risk of Climate and Nature

# Risk Identification Overview

All category risks in 2024 have been identified, analyzed and evaluated by each unit. The grade distribution of all category risks are as follows:

Risk Category Risk Level	Risk of Operational	Risk of HSE	Risk of Quality Management Processes	Risk of Information Security	Risk of Climate and Nature
Quantity of High risk	2	1	0	0	1
Quantity of Slight high risk	0	0	0	1	0
Quantity of Medium risk	8	1	3	0	4
Quantity of Low risk	14	3	1	3	5



# Risk of Operational (1/3)

## Insufficient Project Key Talent

In the first half of 2024, there are three high-risk units (HBO, ATFBO, and LEGAL) experienced significant insufficient of project key talent problem. The risk mitigation measures undertaken and the improvement are detailed as follows:

Risk Mitigation Actions	Improvement Results																
<p><u>Corporate Policy</u> :</p> <ul style="list-style-type: none"><li>For <b>specific positions, engage global engineering headhunting firms</b> to find suitable candidates.</li><li>Implement <b>an employee referral program to encourage staff to recommend talented individuals.</b></li></ul> <p><u>Main Measures of Talent Retention Implemented by each units</u> :</p> <ul style="list-style-type: none"><li>Regularly review and identify <b>qualified EPCO staff</b> and reassign suitable individuals to <b>project key positions.</b></li><li><b>Accelerate Talent Development</b> :<ul style="list-style-type: none"><li>Regularly conduct workshops featuring <b>practical courses taught directly by Division/Department heads.</b></li><li><b>Facilitate cross-disciplinary and diversified learning</b> through project execution <b>to accelerate the development of core skills.</b></li></ul></li></ul>	<ul style="list-style-type: none"><li>As of Q3 2024, a total of <b>36 employees</b> were recruited through <b>headhunting firms</b>, and <b>19</b> were recruited and retained through <b>employee referrals.</b></li><li>The risk of Insufficient Project Key Talent of all units has been effectively reduced by <b>new recruitment and talent retention measures.</b></li></ul> <table><tr><th>Year</th><th>HBO</th><th>ATFBO</th><th>LEGAL</th></tr><tr><th>Project Key Talent</th><th>PM</th><th>PCM</th><th>PCA</th></tr><tr><td>2024 Q1</td><td>high</td><td>high</td><td>high</td></tr><tr><td>2024 Q3</td><td>low</td><td>relatively high</td><td>high</td></tr></table>	Year	HBO	ATFBO	LEGAL	Project Key Talent	PM	PCM	PCA	2024 Q1	high	high	high	2024 Q3	low	relatively high	high
Year	HBO	ATFBO	LEGAL														
Project Key Talent	PM	PCM	PCA														
2024 Q1	high	high	high														
2024 Q3	low	relatively high	high														

# Risk of Operational (2/3)

## Insufficient Contract Amount

In 2024, **the contract amount is insufficient** with a total of 2 units (HBO and IEPBO). After taking risk mitigation measures, **the assessment still maintains high risk**. The explanation is as follows:

Risk Mitigation Actions	Improvement Results
<ul style="list-style-type: none"><li>• <b>Improving core competitiveness</b> (HBO: Petrochemical products and domestic and foreign Natural Gas-related business opportunities, IEPBO: Incinerators and Gas-Fired Power Plants)</li><li>• <b>Adjusting business strategies and strengthen efforts to capture Energy Transition business opportunities:</b><ul style="list-style-type: none"><li>– HBO : Carbon Restocking, Blue Hydrogen/Ammonia, Renewable Fuels and Electronic Grade Specialty Chemicals projects</li><li>– IEPBO : Energy Storage, Wind power (onshore and offshore Substations), Geothermal</li></ul></li><li>• <b>Adjusting bidding strategies, differentiate competitors, and increase competitiveness: :</b><ul style="list-style-type: none"><li>– Enhance price competitiveness through the group's multiplication of synergistic resources, AI applications and digital innovation.</li><li>– Create brand premium through ESG.</li><li>– Flexibly use smart tools to solve customers' pain points in building factories and improve customer stickiness.</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Due to <b>factors such as delays in target project schedules and cancellation of investments by Customers</b>, as of September 2024, the contracted amount is still insufficient.</li><li>• <b>Continue to improve</b> Focusing on the blue ammonia project in the Middle East, the natural gas receiving station project in Southeast Asia and Taiwan, and the domestic compound cycle gas power plant. It is expected to increase the contract amount achievement rate by the end of the year.</li></ul>

# Risk of Operational (3/3)

## Risks of the Israel-Palestine Conflict on Middle East Operations

Since October 2023, the Israel-Palestine conflict has increased geopolitical instability in the Middle East projects, with potential risks such as work stoppages, contract termination, cost increases, and investment delays. The business unit assessed that the Israel-Palestine conflict would not impact the current project. It is considered as low risk and implemented mitigation measures with the following outcomes:

Risk Mitigation Actions	Improvement Results
<p><b><u>Ongoing Projects :</u></b></p> <ul style="list-style-type: none"><li>• <b>Closely follow up with payment status</b> to ensure milestone/progress payments are made as approved.</li><li>• <b>Enhance oversight of JV project profits</b> to ensure profit distribution is handled according to milestones.</li><li>• <b>Sign long-term contracts with freight forwarders</b> and <b>detail control supplier's delivery schedules</b> to minimize the impact of Red Sea shipping restrictions on <b>freight costs</b> and <b>project schedules</b>.</li></ul> <p><b><u>Potential Project and Strategies :</u></b></p> <ul style="list-style-type: none"><li>• Follow the projects in the <b>relatively politically and economically stable “Gulf Cooperation Council (GCC)” region</b>.</li><li>• <b>Select the projects carefully: Use Gate Review to monitor critical items</b> (e.g., Payment Security, risk thresholds of vital contractual terms) <b>to identify major risks in contracts and bids</b> and formulate corresponding strategies.</li><li>• <b>Expand or diversify supply chains</b> to mitigate the impact of geopolitical risks on project execution.</li></ul>	<ul style="list-style-type: none"><li>• <b><u>The measures have effectively reduced execution risks for ongoing projects:</u></b><ul style="list-style-type: none"><li>– With proper project management and regular tracking, <b>no payment delays have occurred for invoices issued to the client</b>.</li><li>– Engineering has been completed 100%, <b>with partial profit distribution to CTCI planned for Q1 next year</b>.</li><li>– Under the <b>transportation contract</b> and <b>strengthened supplier delivery controls</b>, <b>neither freight costs nor project schedules have been impacted by Red Sea shipping restrictions</b>.</li></ul></li><li>• <b><u>Continued to secure potential projects within the Gulf Cooperation Council (GCC) region.</u></b></li></ul>

# Risk of Safety, Health and Environmental (1/1)

## Fatal accidents can impact project progress and the company's reputation.

A fatal occupational accident can significantly impact the company’s reputation and operations, with risks remaining High even after assessment. The following are the mitigation measures and improvements implemented:

Risk Mitigation Actions	Improvement Results										
<p>Continue actions : Department heads intensify audits during weekdays and weekends as well as conduct quarterly review meetings.</p> <p><b>Strengthen Measures</b> in 2024 :</p> <ul style="list-style-type: none"><li>• <b>Site Heat Stress Prevention:</b><ul style="list-style-type: none"><li>- Enhance heat hazard protection measures on-site by adding shaded rest areas and providing drinking water or electrolytes.</li><li>- Contractors are required to improve task assignments and management for workers with high health risks.</li><li>- Increase the frequency of Emergency Response Drills and training focused on Heat Stress Prevention.</li></ul></li><li>• <b>Fall precautions :</b><ul style="list-style-type: none"><li>- Improve change of construction frame management, including complete fall prevention measures during dismantling and supervision of PPE use.</li><li>- Conduct interview and drill for workers who often violate the rules, and share lessons learned with other projects.</li></ul></li><li>• <b>Strengthen the safety awareness training of migrant workers :</b><ul style="list-style-type: none"><li>- For the migrant task, edit the Thai-version of training videos and continue to promote it everyday before work, in the rest area, and during commuting.</li></ul></li></ul>	<ul style="list-style-type: none"><li>• The Dow Jones Sustainability Index (DJSI) "Occupational Safety and Health" item won the top 1 percent (PR 99) in 2024.</li><li>• The annual target value for the Total Recordable Cases Rate (TRCR) is 0.1, the value is 0.05 till Sep. 2024.</li></ul> <table><tr><th>Year</th><th>TRCR</th></tr><tr><td>2021</td><td>0.09</td></tr><tr><td>2022</td><td>0.08</td></tr><tr><td>2023</td><td>0.04</td></tr><tr><td>2024 till Sep.</td><td>0.05</td></tr></table>	Year	TRCR	2021	0.09	2022	0.08	2023	0.04	2024 till Sep.	0.05
Year	TRCR										
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# Risk of Information Security (1/1)

## Cyber hacking attack

In 2024, due to geopolitical conflicts, Taiwan faces 2.5 times more cyberattacks than the global average. Cyber warfare is escalating, posing serious risks to companies. Despite mitigation efforts, the risk remains moderately high.

Risk mitigation Actions	Improvement results
<ul style="list-style-type: none"><li>• <b>Continue actions:</b><ul style="list-style-type: none"><li>– Continuously use a <b>threat detection and response system</b>.</li><li>– Continuously engage external experts to conduct <b>information security diagnostic and penetration testing</b>.</li></ul></li><li>• <b>New measures in 2024</b><ul style="list-style-type: none"><li>– A <b>web application firewall</b> has been added to protect the website from attacks.</li><li>– Implementing a <b>privileged access management</b> system and a <b>data leakage prevention</b> system by year-end.</li></ul></li></ul>	<ul style="list-style-type: none"><li>• The threat detection and response system <b>successfully blocked hacker attacks on CTCI via the networks of CTCIBJ and CTCIA</b>, preventing any actual impact or loss</li><li>• <b>Information security diagnostic and penetration testing found six vulnerabilities, all of which have been fixed.</b> No issues have occurred since the fixes.</li><li>• This year, <b>the web application firewall blocked about 610,000 malicious attacks with no impact.</b></li></ul>



# Risk of Climate and Nature (1/1)

## Customers may spend less on high Carbon missions investment

Under the global net-zero trend, fossil fuel use has greatly declined, leading customers to invest more in renewable energy. This shift poses risks to CTCI's refining and petrochemical businesses. To address this, CTCI has accelerated its green transformation and diversified its business strategies. This risk is classified as **high** but can be lowered to **slight high** with mitigation actions.

Risk Mitigation Actions	Improvement Results
<ul style="list-style-type: none"><li>Set up an <b>energy transition strategy team</b> to search for transition opportunities, such as green hydrogen/ammonia and carbon capture and reuse (CCUS) business opportunities.</li><li>Collaborated strategically with leading international companies to pursue domestic and international projects in <b>CCS, blue hydrogen/ammonia, and renewable fuels</b>.</li></ul> <p><b>Continue processing :</b></p> <ul style="list-style-type: none"><li>Continued to integrate the net-zero EPC completion rate into the EPC Operation's <b>KPIs</b> to <b>enhance green transformation efforts and capabilities</b>.</li></ul>	<ul style="list-style-type: none"><li>Successfully secured the <b>CPC carbon storage test site</b> facilities turnkey project in Taiwan and the <b>ethane cracker project</b> in Saudi Arabia this year.</li><li>As of <b>Q3</b> 2024, the <b>proportion of low-carbon and environmental engineering projects increased to 60%</b>.</li><li>As of <b>Q3</b> 2024, the net-zero EPC completion rate reached <b>85.2%</b> (annual target: 85%).</li></ul>

# **Risk Management Training Implementation**

- Invite external experts to hold lectures on risk-related topics
- Internal promotion of Risk Management and Control

# Invite external experts to hold lectures on risk-related topics (1/2)

## 2024 world economic trends, risk indicators and response strategies (2024/5/3)

**Chien-Fu Lin (Jeff)** Chief Economist of CTBC Financial Holding Co., Ltd.

Attendees: Directors of CTCI Corp., ASI, and ECOVE and top managers of CTCI group.  
Total 39 personnel (in-person and online).

### Contents

1. World economic and financial situation
2. Inflation and Fed tightening
3. Risk indicators
4. Risk response strategies:  
keep up with technology trends
5. Eye-catching industrial applications
6. Foresight and futures thinking



# Invite external experts to hold lectures on risk-related topics (2/2)

## Lecture on “Construction Legal Concepts and Legal Risks Should Be Possessed in Execution Projects” (2024/8/14)

**Frank Kung** Managing Partner of Liang & Partners Law Offices

Attendees: BU Heads of CTCI Corp., chairmen/GMs of affiliated companies, managers, PM (QM), PE, SAR, staff of Quotation & Estimating Div. and Risk Control Representatives. Total 275 personnel (**in-person and online**).

This workshop was recorded and is uploaded to CTCI University for managers and employees of the group.





# Internal promotion of Risk Management and Control

**Briefing session of risk sensitivity analysis and stress testing (2024/3/4)**

**Workshop for improving skills of each risk control unit (2024/3/14)**

In order to let each risk control unit understand regulations and requirements, held a series of workshops for each unit that focuses especially on **techniques and skills for daily operational control**.

Participant: Risk Control Representatives of each unit and personnel who are responsible for risk management. Total 27 personnel (2 workshops).



