

5. Environmentally Friendly

Environmental Management and Sustainability Commitment

The world is facing severe environmental challenges such as climate change, resource depletion, biodiversity loss, and pollution. Pan-International recognizes that these changes have significant impacts on the economy and human well-being. As a corporate citizen, we actively take on sustainability responsibilities and are committed to reducing our operational environmental impact, doing our part for the future.

Although most of our Group's facilities are small to medium-sized production lines performing simple assembly with relatively simple processes and limited optimization opportunities, Pan-International always adheres to the concept of "Corporate Growth and Environmental Prosperity" in promoting sustainable operations. We consider environmental issues as one of our core corporate priorities and are dedicated to developing management systems and innovative strategies that align with sustainability principles.

To strengthen environmental management and ensure the implementation of related measures, our Group actively implements various environmental management systems and encourages subsidiaries with manufacturing locations to obtain international certifications:

- In terms of environmental management, our Group promotes the ISO 14001 Environmental Management System and establishes management policies and systems in accordance with relevant regulations. Dongguan Pan-International, New Ocean, Jiangxi, and Honghuasheng, Yantai have obtained ISO 14001 certification in recent years and continue to maintain their qualifications; CJ Electric Systems, Wuhu also obtained certification on February 2, 2024, valid until February 1, 2027. Currently, all Plants in Mainland China have obtained certification.
- In terms of hazardous substance management, our Group also promotes the implementation of hazardous substance management and reduction plans among subsidiaries, and obtains IECQ QC 080000 Hazardous Substance Process Management System certification. Among them, Dongguan Pan-International has obtained certification since 2021 and continues to maintain it, with the certificate valid until August 18, 2027.
- In terms of energy management, Honghuasheng (Yantai) has obtained ISO 50001 Energy Management System certification (valid until October 12, 2026), and New Ocean, Jiangxi is also actively implementing it. Through this system, enterprises can systematically identify energy-saving opportunities and continuously optimize energy usage efficiency. Throughout 2025, the group's total non-renewable energy consumption decreased by approximately 27.63% compared to the baseline year 2022.
- In terms of waste management, Honghuasheng, Yantai has obtained UL 2799 Platinum "Zero Waste to Landfill" certification, while New Ocean, Jiangxi has obtained GRS- Global Recycled Standard certification. In 2025, Honghuasheng, Yantai achieved a high waste reuse rate of 89.46%, meeting the goal of "maximizing resources and minimizing waste" in the production process; meanwhile, New Ocean, Jiangxi increased its annual recycled material utilization rate to 59.51% through the implementation of a recycled material management system, demonstrating achievements in resource recycling.

Please refer to Section 1.2.2 and Appendix 8 of this report for certificates, and Sections 5.1-5.5 for details on various environmental policies.

We actively engage in energy conservation, carbon reduction, and green transformation through measures such as process optimization, equipment efficiency improvement, implementation of solar facilities, and purchase of renewable energy certificates (green certificates) to increase the proportion of

ISO 14001

ISO 50001

ISO 14064-1

UL 2799 Platinum

Zero Violations

Solar Energy Installation

IECQ QC 080000

GRS- Global Recycled Standard

AI and Green Product

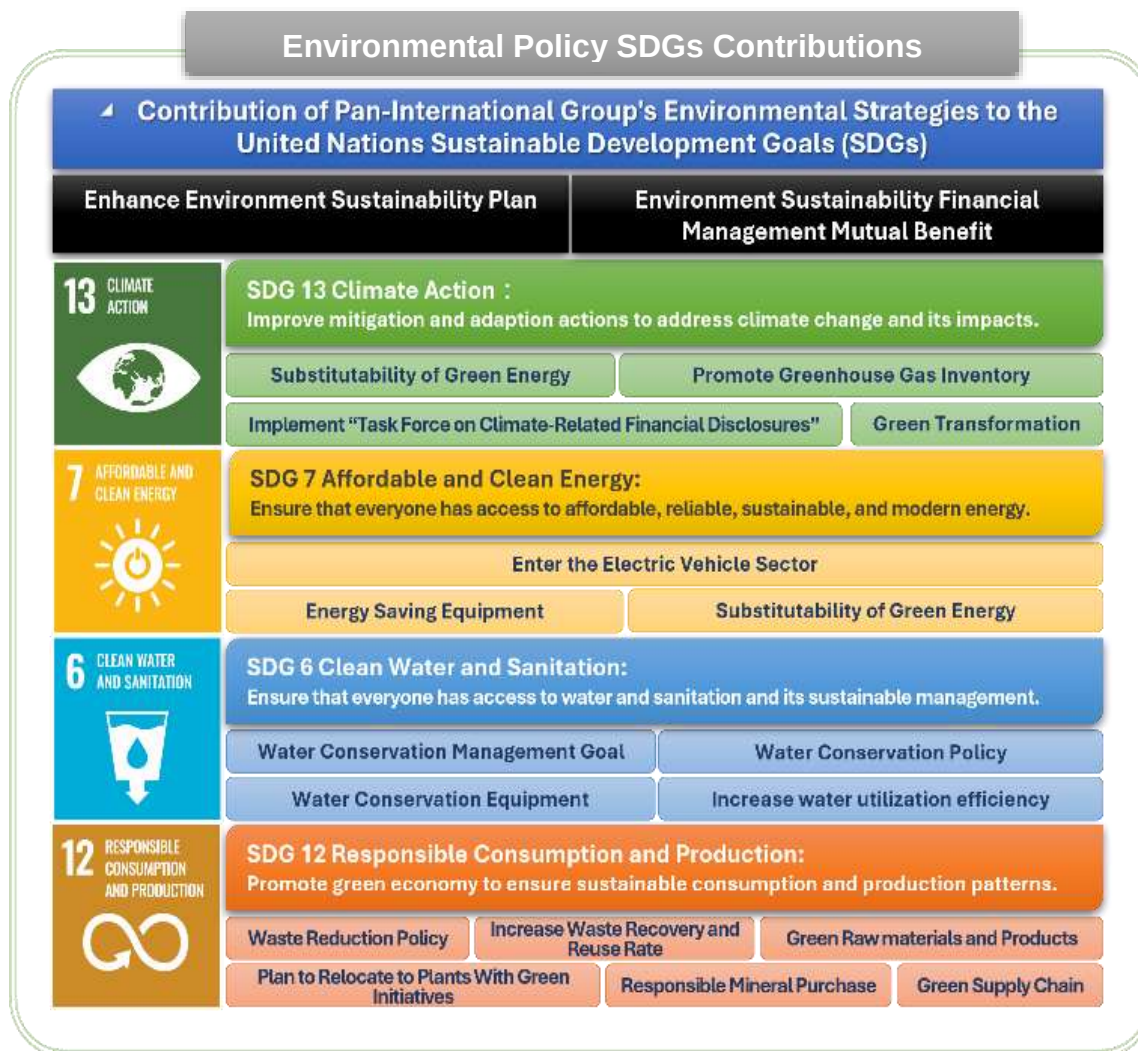
green electricity usage and renewable energy efficiency. Among these efforts, the Dongguan Plant also sells excess solar power back to the grid, demonstrating a concrete commitment to green energy development. The Group also focuses on green product research and development and material selection, implementing environmental responsibility throughout the product lifecycle, continuously advancing towards environmental protection, energy conservation, and low-carbon directions.

This chapter summarizes the Group's achievements in environmental practices, current challenges, and future plans. We have developed specific environmental strategies and action plans covering Greenhouse Gas reduction, energy efficiency improvement, circular economy promotion, and ecological resource protection. Through the implementation of best practices, research and innovation, and collaboration with stakeholders, we are accelerating the realization of sustainability goals. The parent company will also relocate to a new factory office that complies with green initiatives in 2024, and has implemented the Task Force on Climate-Related Financial Disclosures (TCFD) framework to strengthen its climate risk management mechanism.

Looking ahead, Pan-International will continue to deepen its environmental sustainability planning, actively expand its electric vehicle industry supply chain and artificial intelligence industry applications, moving towards the dual goals of environmental sustainability and stable corporate operations.

▼ Zero environmental non-compliance in 2025

In 2025, the Group continued to strictly comply with various regulations and internal management systems in environmental management (covering water resources, waste, energy, and air emissions), and strengthened monitoring and improvement measures. Throughout the year, there were no incidents of violation of environmental regulations, achieving the "zero non-compliance" target, demonstrating our firm commitment to environmental protection and sustainable perations.





5.1 Climate Change and Energy Carbon Emission Management

Material Topic Management Approach, Risk Management for Major Events: Issues of Carbon Neutrality (Climate Issues), Energy, Greenhouse Gases

(The management actions for these three issues are highly related, so the management measures for all three are explained together)

Climate Change- GRI 3-3, 2-12, 2-13, 2-14, 2-17, 2-22, 2-23, 2-24, GRI 201-2, IFRS S2, TCFD

Energy - GRI 3-3, GRI 302-1, GRI 302-3, GRI 302-4

Greenhouse Gas— GRI 3-3, GRI 305-1, GRI 305-2, GRI 305-4, GRI 305-5

		Climate Change	Energy	Greenhouse Gas
Impact Description		1. Transition Risks 2. Physical Risks 3. Climate Opportunities	1. Energy consumption leads to rising costs, which increases operating expenses 2. Failure to fulfill corporate social responsibility 3. Deduction on company evaluation score	1. The gradual increase in Greenhouse Gas emission pricing 2. Extreme climate events 3. Negative stakeholder feedback 4. Violation of local and international regulations 5. Damage to corporate image
Location		For the Group:		
Policies or Commitments Established or Followed	Internal Regulations	V		
	Government Regulations	V		
Responsible Units		Sustainability Committee/ Chairman / Management Committee	Sustainability Committee / Deputy Chairperson	Sustainability Committee / Deputy Chairperson
Management Actions		<ul style="list-style-type: none"> Establish Sustainability Committee: Regularly discuss the implementation and planning of work related to climate change, energy issues, and Greenhouse Gas emission disclosure and reduction, then report the results to the Board of Directors annually/quarterly. Inventory and monitor Greenhouse Gas emissions Set carbon reduction goals and regularly review and improve 		

Process for Monitoring the Effectiveness of Actions

- Sustainability Committee: For key subsidiaries (with manufacturing sites), the Group established a management organization chaired by the Chairman, who acts as the Chairperson. The Committee meets regularly (quarterly) to discuss the implementation and planning of work related to climate change, energy issues, and Greenhouse Gas emission disclosure and reduction, then report the results to and review with the Board of Directors annually/quarterly.
- The Board of Directors supervises.
- Through the Sustainability Committee, establish energy conservation and carbon reduction guidelines and goals, and coordinate and integrate the promotion strategies and plans for energy conservation and carbon reduction of each subsidiary. Regular meetings are held to continuously introduce various energy-saving plans suitable for different plants, confirm and review goal achievement rates, and challenge new energy-saving milestones.

Management Performance Indicators - 1 (Under the same conditions as the base year* - Note 1)

Indicators	2025 Achievement	Short-term Goal (Annual) (2022 base year)	Mid-term Goal (2022-2027)	Long-term Goal (2022-2050)
(Non-renewable) Energy Intensity	100% achieved Decreased by 19.94% compared to the baseline year 2022.	Decrease by 1.5% annually	Decrease by 7.5% in 5 years	Net zero emissions
Percentage of renewable energy use	100% achieved: Increased to 29.44% From 0.06% (2022) to 3.92% (2024) to 29.44% (2025)	Increase by 0.5% annually	Increase by 2.5% in five years	Increase by 10% for key plants

Management Performance Indicators - 2 (Under the same conditions as the base year* - Note 1)

Indicators	2025 Achievement	Short-term Goal (Annual) (2022 base year)	Mid-term Goal (2022-2027)	Long-term Goal (2022-2050)
GHG Emission Intensity (Scope 1, 2)	100% achieved: Decreased by 23.5% compared to the baseline year 2022, decreased by 24.19% compared to 2024.	Decrease by 1.5% annually	Decrease by 7.5% in 5 years	Net zero emissions
Zero Violations	100% achieved	Comply with international and local environmental regulations to achieve zero violations.		
Complete the inventory boundary and obtain certification according to the schedule.	100% achieved	Complete the inventory boundary and obtain certification according to the schedule. Obtain the parent company certificate in 2025 and complete the inventory of subsidiaries included in the consolidated financial statements.		

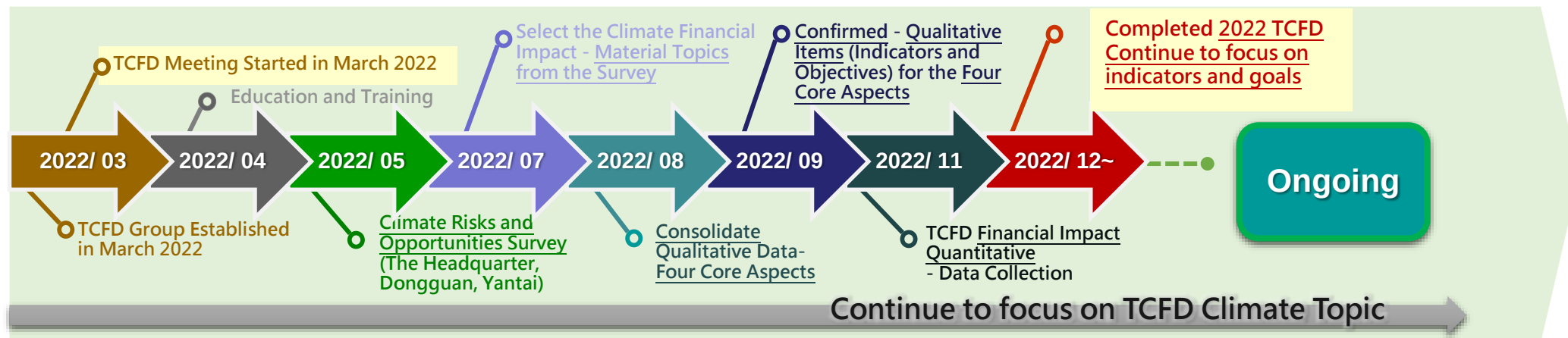
* The GHG boundary includes the following locations: Pan-International, Taipei; Dongguan Pan-International, New Ocean, Jiangxi; Honghuasheng, Yantai; CJ Electric Systems, Wuhu; PIU (USA); Chaohu Ruichang; Anqing Ruiyu; Wuhu Hezhong; Yibin Pan-International; Taiwan-Czech Electronics; Huizhou Taiwan-Czech Electronics; Dongguan Guangshan; CJ Electric Systems, Ordos; and the PIB subgroup (including PIT, PIW, PIE).

* In 2025, 8 new locations and one subgroup were added: Chaohu Ruichang, Anqing Ruiyu, Wuhu Hezhong, Yibin Pan-International, Taiwan-Czech Electronics, Huizhou Taiwan-Czech Electronics, Dongguan Guangshan, CJ Electric Systems, Ordos, and the PIB Subgroup.

* The 2025 Year disclosure scope was 100% consistent with the consolidated financial statements.

5.1.1 Climate Governance and Related Financial Disclosures

In response to international trends and the requirements from regulations, investors, supply chains, and consumers regarding climate issues, Pan-International Group implemented the Task Force on Climate-Related Financial Disclosures (TCFD) in 2022. The assessment is reviewed annually and re-evaluated every 2-3 years, with continuous promotion of climate governance to achieve low-carbon operations and environmental sustainability.



- Based on the four core elements of climate-related financial disclosure: "Governance," "Strategy," "Risk Management," "Metrics and Targets."
- Establish a risk framework, identify material risks and opportunities that may impact operations, and propose related response strategies.
- Integrate climate change with corporate governance, business strategy, and risk management. Information helps guide the enterprise's decisions on climate risk and opportunities, while funding supports the overall transition to low-carbon economic development.
- Ultimate goal - Enhance competitiveness under low-carbon transition.

• Climate Governance Framework

To effectively identify and properly manage the company's climate-related risks and opportunities, Pan-International Group's [Sustainability Committee] is convened by the Board of Directors, with the Sustainability Development Department serving as the executive unit. The Sustainability Development Department is responsible for identifying and managing climate change risks and opportunities, and reports the risk and opportunity identification results to the Chairperson at the annual senior executive meeting of the Sustainability Development Department, where control measures are formulated. [The Sustainability Committee] regularly reports climate risk issues faced by Pan-International, makes decisions on related management policies, and reviews their implementation status.

To ensure that climate topics receive substantive oversight and implementation by the highest management level, we have established a top-down climate risk governance mechanism.

Climate Governance [Organizational Structure]			
Board of Directors	[Sustainable Development and Nominating Committee]	[Sustainability Committee and IFRS Sustainability Disclosure Standards Project Team]	Each management unit and subsidiary
	Chairperson/ President	Manager/ Assistant Vice President/ Specialist/ Sustainability Development Department	
Supervise risks and formulate policies	Practical Supervision	Develop control measures	Identify climate risks and opportunities initiative

- Board of Directors: As the highest governance unit for climate risk management, it is responsible for approving the strategic direction of climate change, carbon reduction goals, and major investment decisions.
- Sustainable Development and Nominating Committee: The practical supervisory unit for the operation mechanism related to climate risk management supervises the Sustainability Committee and IFRS Sustainability Disclosure Standards Project Team in the assessment and control of climate risks.
- Sustainability Committee and IFRS Sustainability Disclosure Standards Project Team: Supervise the planning and execution progress of work related to Climate Change, Energy Management, Greenhouse Gas reduction, and the implementation of sustainability disclosure standards, and regularly report to the Board of Directors on these projects **at least once a year**.
- Each management unit and subsidiary: Responsible for daily Greenhouse Gas Inventory, identification of climate risks and opportunities, developing response strategies, and promoting the implementation of energy-saving and carbon reduction initiatives in various plants.

Risk Management: Climate Risk Management Process: Process of Listing Climate-Related Risks and Opportunities and Developing Strategies

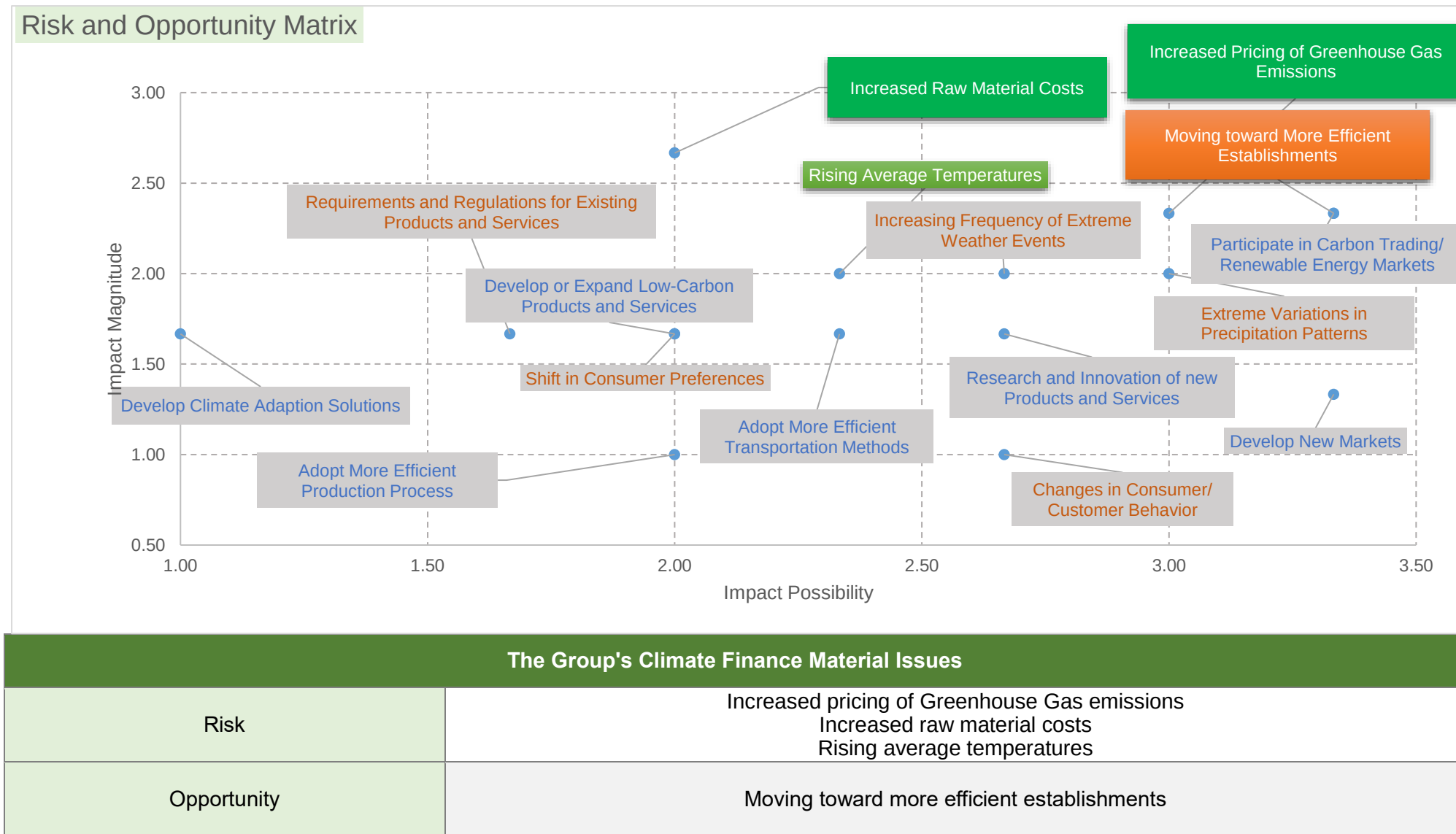
Follow the established "Risk Management Policy and Procedures" and adopt a standardized management process to analyze climate risks:



【Identification】 Inventory	According to the TCFD and IFRS S2 frameworks, a list of potential climate risks and opportunities is identified by Each management unit and subsidiary.
【Assessment】 Analysis	<ul style="list-style-type: none"> • Introduce climate-related risk and opportunity identification mechanisms: Sustainability Committee and IFRS Sustainability Disclosure Standards Project Team, combined with climate scenario models, evaluate impact possibility and financial impact levels. • Prioritize: Combine the above to identify climate change risks and opportunities based on the current status of operations.
【Response】 Strategy	For high risk items (such as carbon fees, power shortages, flooding), propose corresponding response strategies based on the impact of climate change risks and opportunities on the Company's various business operations, develop action plans, and continuously review and optimize them.

Screen Climate Risks and Opportunities	Company Training and Inventory	Identify Material Risks and Opportunities	Senior Executive Confirmation	Material Risks and Opportunities
Consider the transition risks related to current and emerging regulations, technology, market, reputation, as well as acute and chronic physical risks. Select climate risk and opportunity issues related to Pan-International's operational activities and upstream and downstream value chain based on the characteristics of the electronics manufacturing industry, including a list of eight risks and eight opportunities.	<ul style="list-style-type: none"> Evaluate the risk value based on the analysis, impact possibility (L), and impact degree (M), and summarize the Company's overall material climate risks and opportunities, including three risks and one opportunity. Evaluate climate-related risk and opportunity information and management strategies 	<ul style="list-style-type: none"> Convene relevant company management and business execution units to discuss climate-related issues, clarify the definitions of various climate risks and opportunities, analyze domestic and foreign regulations, as well as market and technology trends Further conduct a composite analysis of various issues and understand the impact on Pan-International's operations, reputation, management through factors such as impact possibility, impact level, and timing of occurrence 	Finally, the identified results are reviewed by senior executive to confirm relevant climate risks and opportunities and integrate them into the Company's overall risk management for control	<ul style="list-style-type: none"> Use climate risk/opportunity level (impact level * possibility) for ranking Select the top 25% of material climate risks and opportunities for Pan-International Group through evaluation tables and matrix charts

▼ Draw [Risk and Opportunity Matrix] to select [Material Issues]



• Strategy

Risk Categories	Issue Definition	Company Impact Description	Impact Timeline	Strategy
Policy and Regulatory Risk	Increased pricing of Greenhouse Gas emissions	<ul style="list-style-type: none"> In accordance with Taiwan FSC's promotion of carbon emissions disclosure for listed companies, the headquarters plans to complete carbon inventory in 2023, parent company and subsidiaries to complete inventory and parent company to complete verification by 2026, and consolidated subsidiaries to complete verification by 2028 Due to increased international attention and national emphasis on environmental issues, mainland China may implement certain mandatory control policies in the future, resulting in higher carbon trading costs for the company 	Mid-term	<ul style="list-style-type: none"> For Carbon Inventory and Certification Plan: The headquarters and all plants have submitted carbon inventory planning, implementation and certification schedules to the Board of Directors, and will report results to the Board quarterly. Both Dongguan Plant and Yantai Plant have established dedicated departments and personnel to conduct annual Greenhouse Gas inventories, formulate reduction plans, and promote the implementation of annual energy-saving targets Dongguan Plant is evaluating the implementation of ISO50001 Energy Management System, while Yantai Plant completed ISO50001 Energy Management System certification at the end of 2022 Dongguan Plant and Yantai Plant successively completed the construction of solar power stations from late 2022 to early 2023, serving as alternative energy sources for self-use electricity, with 10% of future power to be supplied by renewable energy from solar power stations
Acute Physical Risk	Rising average temperatures	<ul style="list-style-type: none"> Increased air conditioning costs at plants due to rising temperatures; Due to rising temperatures causing power supply strain at plants, local governments implement peak-shift power usage measures to address power shortages. However, these peak-shift measures result in extended production lead times at the plants. 	Short-term	<ul style="list-style-type: none"> Under staggered electricity usage, plants schedule their production in shifts Replace energy-saving refrigeration equipment to prevent rising energy consumption due to increasing temperature The company will evaluate purchasing business interruption insurance. The newly purchased office building in Taipei adopts green building design, which can effectively reduce temperature and save electricity costs.

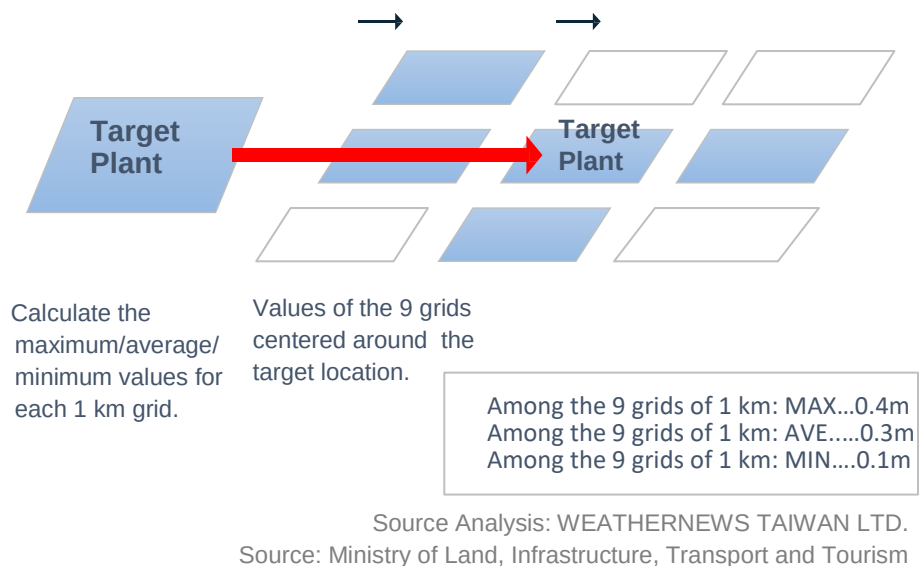
Chronic Physical Risk	Increased raw material costs	<ul style="list-style-type: none"> During winter in Yantai, Shandong Province, highways are frequently closed due to snowfall, which may lead to logistics disruptions and increased raw material costs at the Yantai plant The Dongguan Plant has been affected by extreme weather events such as floods and droughts, impacting raw material supply and demand, increasing raw material and inventory costs, leading to decreased orders, which in turn affects the company's turnover and reduces revenue. 	Short-term	<ul style="list-style-type: none"> The Yantai plant adopts a flexible inventory strategy, maintaining 1-2 weeks of inventory normally, but increases inventory levels to 3-4 weeks during winter to mitigate impacts from snow-related logistics disruptions. Both Dongguan and Yantai plants have developed multi-location supplier networks to avoid supply disruptions due to extreme weather events in a single region The headquarters and plants have established dedicated departments or response teams, and developed guidelines for post-disaster recovery, production resumption, and production site relocation to meet customer satisfaction in terms of delivery time and quality. Plants conduct annual simulation training and drills according to emergency response plans to enhance emergency team members' familiarity with plan contents and responsibilities, while identifying potential improvements to the plans.
Opportunity Category	Topic Definition	Company Impact Description	Impact Timeline	Strategy
Resource Usage Efficiency	Moving toward more efficient establishments	<ul style="list-style-type: none"> When constructing new facilities and renovating existing plants, adopt more energy-efficient planning models, consider space utilization rates, make greater use of natural energy sources (such as sunlight, wind power, etc.) to reduce operational costs associated with energy consumption and pollution emissions 	Mid-term	<ul style="list-style-type: none"> Dongguan Plant and Yantai Plant utilize air compressor waste heat recovery to improve plant energy usage efficiency Plan joint office areas and reasonably adjust internal partitions in plants, optimize the effectiveness of air conditioning and ventilation systems; install thermal insulation door curtains to prevent air conditioning loss and improve energy efficiency Yantai Plant plans to obtain Green Factory certification in 2022; Zhonghe Headquarters will adopt a resource efficiency maximization approach for interior design planning; Xindian Headquarters will apply for reconstruction using green building standards during urban renewal

• Metrics and Goals

✧ The achievement status of policy, strategy, management goals, and management indicators can be found in the corresponding report chapter.

Indicators		Location	Goal	Corresponding Report Chapter ✧
Climate	Carbon Emissions/ Energy	The entire Group	PDCA: Annually promote energy-saving measures, set goals, confirm achievement status, track and review, and confirm future goals.	5.1 Climate Change and Carbon Emission Management
	Greenhouse Gas	 Headquarters	Complete carbon inventory of the parent company in 2023. Complete the inventory of the parent company and its subsidiaries by 2026. Complete verification of the Parent Company by 2027. Complete the verification of subsidiaries' consolidated statements by 2028 >>>>For detailed achievement status, please refer to 5.1.4 Greenhouse Gas Emissions.	5.1 Climate Change and Carbon Emission Management 5.1.2~5.1.5
		The entire Group	Set up dedicated departments and personnel to conduct annual Greenhouse Gas inventories, formulate reduction plans, and promote implementation of annual energy-saving goals	
	Energy Management	Headquarters	New plants are green buildings, which can effectively reduce temperatures and save electricity costs.	5.1 Climate Change and Carbon Emission Management 5.1.2~5.1.5
			<ul style="list-style-type: none"> Yantai: Passed ISO 50001 energy management system certification at the end of 2023 >>Passed in 2023 and continues to maintain annually. Other plants: Plan to introduce ISO 50001 Energy Management System 	
			Under staggered electricity usage, plants schedule their production in shifts	
		The entire Group: Each Manufacturing Location	<ul style="list-style-type: none"> Planning to build solar power stations as alternative energy sources for self-use electricity, with 10% of future power to be supplied by renewable energy from solar power stations. Dongguan Plant has successively installed and activated rooftop solar stations during 2022-2023. In 2024, the total plant area achieved a 16.04% renewable energy utilization rate, reaching 18.16% in 2025. Yantai Plant has successively installed and activated rooftop solar stations from 2023 to present. In 2024, the total plant area achieved a 3.41% renewable energy utilization rate, reaching 31.87% in 2025. The Wuhu Plant is planning to construct solar stations during the 2026-2027 year. 	
			Replace energy-saving refrigeration equipment to prevent rising energy consumption due to increasing temperature	

• 2023 - Climate Flood Risk Analysis: Targeting Key Plants - Wuhu, Dongguan



• RCP 8.5: "High emissions business-as-usual scenario."

[Preset Conditions]

- Scenario: RCP8.5
- Model: Average (the overall average of climate model simulations)
- Depth type: Mean (the overall average of the target and the nine adjacent 1km grids)
- Threshold: 0.3m
- Annual Probability of Occurrence = $\frac{1}{\text{Return Period}}$

• Flood Analysis Results / Summary

[Wuhu Plant]

By 2080 / with a 4% annual probability of flood rising from 0.3 to 0.5m, the following losses

- \$4.11 million USD in work stoppage losses
- \$380,000 USD in building asset losses
- \$5.49 million USD in depreciable asset losses
- \$12.6 million USD in inventory asset losses

[Dongguan Plant]

No significant risk of flooding

Recommendations

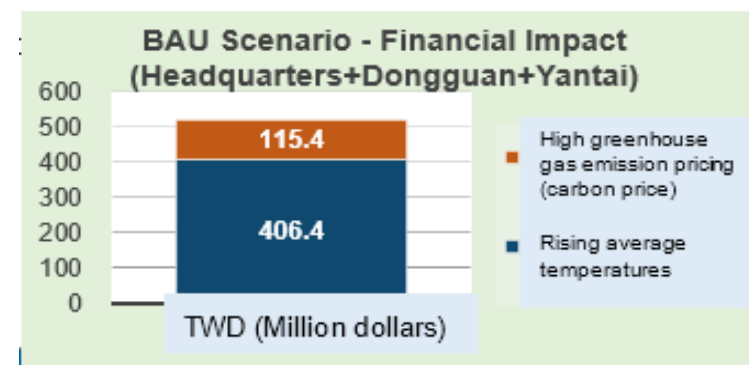
In response to flood risks, the flood threshold can be raised through appropriate strategies to further calculate the difference in financial impact, reflecting the benefits.

Recommendation for Wuhu: Raising the water gate threshold to 0.5m through disaster prevention strategies can help reduce the risk.

• Financial Impact Quantification Table

▼ BAU Scenario: The following financial expenditures are expected in 2030 if no carbon reduction strategy is implemented

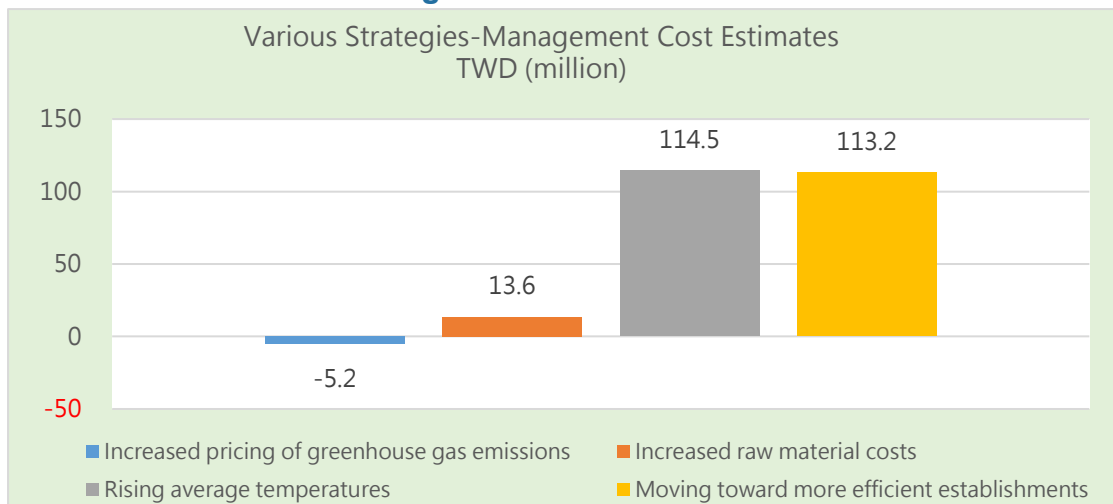
Financial Impact - BAU Scenario		Unit: TWD (million)	
		Unilateral	Total
Risk	Rising in average temperatures (warming loss)	406.4	521.722
Risk	High Greenhouse Gas emission pricing (carbon price)	115.4	



▼ Cost Estimate

Various Strategies-Management Cost Estimates		TWD (million)	Item Proportion: %	Note
Risk	Increased pricing of Greenhouse Gas emissions	-5.2	-2.2%	Yantai Plant, Dongguan Plant: By leasing rooftops to solar energy companies, preferential green electricity fees can be obtained, resulting in a negative expenditure.
Risk	Increased raw material costs	13.6	5.8%	
Risk	Rising average temperatures	114.5	48.5%	
Opportunity	Moving toward more efficient establishments	113.2	48.0%	

• Future TCFD Planning



- Discuss climate issues at least once a year
- Continue to focus on climate risk and opportunity indicators and goals
- Adjust TCFD planning on a rolling basis according to international and government regulations

• Net-Zero Transition Plan

Pan-International Group has designated 2025 as its base year and aims to achieve net-zero emissions by 2050. The Group is advancing its net-zero transition plan in alignment with the Paris Agreement goal of limiting global temperature rise to 1.5°C. In terms of its decarbonization strategy, Scope 1 emissions reductions will focus primarily on equipment replacement and the management of other direct emission sources. For Scope 2, the Group will reduce emissions from purchased energy through process energy-saving measures, improvements in the efficiency of electricity-consuming equipment, solar power generation, and increased use of renewable energy. For Scope 3, the Group will focus on collecting supplier emissions data and providing emissions-reduction guidance, procuring low-carbon raw materials, improving logistics efficiency, and reducing waste while promoting resource recovery, with the aim of lowering value chain emissions. For residual emissions that remain difficult to eliminate after deep decarbonization, the Group will carefully assess purchasing carbon credits and investing in permanent carbon removal solutions to support the achievement of its long-term net-zero target.

To support implementation of the transition plan, the Group expects to invest **NTD 15 million** in 2026 in initiatives including the replacement of energy-saving equipment, energy management, renewable energy, and supply chain decarbonization. The Group will also periodically review resource allocation and emissions-reduction performance.

Stakeholder Engagement: The Group will engage with value chain partners, industry associations, and government authorities to gather transition needs and implementation recommendations, which will serve as references for adjusting its net-zero transition plan. Across the value chain, the Group will communicate with suppliers and customers regarding carbon emissions information, low-carbon materials, and product requirements to understand decarbonization technologies, associated costs, and implementation barriers. Through guidance and technical exchanges, the Group will work with value chain partners to advance emissions-reduction measures. In terms of industry collaboration, the Group will engage with peers through industry associations to share energy-saving and carbon-reduction practices and stay informed of low-carbon technologies and industry transition trends. In addition, the Company

will use policy dialogue and local engagement activities to understand policy directions and societal concerns, and will incorporate relevant feedback into the planning and review of transition measures.

Social Impacts of the Transition and Response Measures: The Group will assess the potential impacts of the net-zero transition on employees and suppliers and, through stakeholder engagement, identify affected groups and their needs to develop corresponding measures. For employees, equipment upgrades, process adjustments, and the introduction of energy management technologies may change job responsibilities and skill requirements. The Group will support employees in adapting to the transition through education and training, skills enhancement, and competency development. For suppliers, carbon management requirements and the adoption of low-carbon technologies may increase costs or management burdens. The Group will provide communication, guidance, and technical exchanges to help suppliers progressively strengthen their decarbonization capabilities and will take their implementation challenges into account when planning relevant measures.

5.1.2 Energy and Greenhouse Gas Management

Pan-International Group's global plants are not major carbon emitters, and are currently outside the scope of carbon tax or mandatory carbon trading regulations. Therefore, there have been no mandatory requirements in the past, only compliance with local regulations. Given the limited opportunities for carbon reduction in the industry, along with the current global climate issues and corporate responsibility, the Group remains committed to taking carbon reduction actions.

Due to energy shortages, global warming, and increasingly severe climate change, energy management and transition have become crucial components of international energy policies. The selection and consumption of energy are closely linked to issues such as company costs, environment, and safety. Improving energy utilization efficiency and reducing energy consumption will help save costs and mitigate the impacts of climate change.

Energy Structure: Due to the nature of the industry, the energy structure used by the Group's subsidiaries in mainland China primarily consists of purchased electricity, which accounts for over 80-90% of total energy consumption.

▼ Energy and Greenhouse Gas Governance

- [Sustainability Committee]: The Chairman serves as the Chairperson, regularly discussing climate change, energy issues, and Greenhouse Gas emissions disclosure and reduction-related work implementation and planning, followed by annual reports to the Board of Directors.
- Focus on reducing non-renewable purchased electricity consumption by building additional solar (photovoltaic) power stations or using other renewable energy sources to increase green energy. Meanwhile, achieve energy savings through process and equipment improvements.
- Energy Conservation and Carbon Reduction Implementation: Through the Sustainability Committee, establish energy conservation and carbon reduction guidelines and goals, and coordinate and integrate the promotion strategies and plans for energy conservation and carbon reduction of each subsidiary. Regular meetings are held to continuously introduce various energy-saving plans, challenging new energy-saving milestones.

▼ Short-term strategies (targeting key subsidiaries (with production facilities + 100% operational control))



- Green Equipment: Select energy-efficient equipment. Plant: Newly purchased production equipment or chiller units must be energy-efficient models.

- Energy-saving Process: Enhance energy recovery



- Green Facilities: Pan-International, Taipei (parent company) plans to relocate to a building with green architecture concepts.
- Purchase Green Electricity/ Renewable Energy Certificates



- Energy Conservation in Non-production Areas: The Group's subsidiaries actively promote various energy-saving initiatives in offices and public areas, such as document digitalization and office areas.



- Use Energy-efficient Lighting Equipment: All replacement light tubes use more energy-efficient LED tubes.



- Comply with international and local environmental regulations to achieve zero violations.
- Clean energy replacing high energy consumption



▼ Mid to Long-term Strategies and Achievement Status

Item		Expected Timeline	Progress Status	Progress/Completion Level
Strengthen Energy Disclosure		2023, annual	Completed (2023) and conducted annually	Starting from 2023, comprehensive energy structure inventory for 2022 (including thermal energy, natural gas, and gasoline/diesel) is required from key subsidiaries in mainland China (with manufacturing locations).
Implemented Task Force on Climate-Related Financial Disclosures		Starting from 2022, annual	Completed (2022) and regularly reviewed	Starting from 2022, TCFD has been implemented, with an annual review and reassessment every 3 years. Implement IFRS S1/S2 by the end of 2025.
Greenhouse Gas Inventory	Parent Company: Annual GHG (Scope 1, 2) Inventory	Complete previous year by 2025	Completed ahead of schedule (2023) and conducted annually	Starting from 2023, the parent company (Pan-International, Taipei) completed the 2022 Greenhouse Gas inventory and conducts it annually
	Consolidated subsidiaries: Annual GHG (Scope 1, 2) Inventory	Annual Complete previous year by 2026	Ongoing: (2022) Mainland China/ (2023) + United States/ (2025) all combined completed	Starting from 2023, Chinese subsidiaries (Dongguan Plant, Jiangxi Plant, Yantai Plant, Wuhu Plant) completed the 2022 Greenhouse Gas inventory (Scope 1, 2) and conduct it annually Starting from 2024, U.S. location PIU (USA) completed the 2023 Greenhouse Gas inventory (Scope 1, 2) and conducts it annually Starting from 2025, include all subsidiaries included in the consolidated financial statements.
	Parent company: Annual GHG (Scope 1, 2, 3) Inventory	Complete previous year by 2027	Completed: Starting from 2025 and conducted annually	Starting from 2025, parent company has added: 2024 (Scope 3) - materiality analysis and inventory, and conducts it annually
	Consolidated subsidiaries: Annual GHG (Scope 1, 2, 3) Inventory	Complete previous year by 2027	Ongoing - Added Scope 3 (Materiality): (2023) Yantai/ (2025) Mainland China/ (2025) all combined completed	Starting from 2023, Yantai plant has added: 2022 (Scope 3) - materiality analysis and inventory, and conducts it annually Starting from 2025, Dongguan Plant, Wuhu Plant, and Jiangxi Plant have added: 2024 (Scope 3) - materiality analysis and inventory, and conduct it annually Starting from 2026, all subsidiaries included in the consolidated financial statements, 2025 added Scope 3 - materiality analysis and inventory.
	Parent company: Annual GHG Assurance	Complete previous year by 2027	Completed: Starting from 2025 and conducted annually	Starting from 2025 (2024 Year), the parent company completes third-party verification/assurance annually, 2025 has been completed.
	Consolidated subsidiaries: GHG Assurance	Complete previous year by 2027	In progress, some sites completed	In 2023, Yantai Plant retrospectively obtained ISO 14064-1:2018 certification for 2020 and 2021 (Scope 1, 2) Starting from 2023, Yantai Plant obtained ISO 14064-1:2018 certification for 2022 (Scope 1, 2, 3), and conducts it annually Starting from 2024, Jiangxi Plant obtained ISO 14064-1:2018 certification for 2023 (Scope 1, 2), and conducts it annually Starting from 2025, Dongguan Plant and Wuhu Plant obtained third-party verification/assurance for 2024 (Scope 1, 2, 3), and conduct it annually It is expected to obtain assurance for subsidiaries included in the consolidated financial statements for the year 2027 by 2028.

Item	Expected Timeline	Progress Status	Progress/Completion Level
Use of green energy (Renewable Energy) $\geq 10\%$	All manufacturing plants by 2050	In progress, some sites completed	Dongguan Plant completed and started using the solar power station in December 2022. Starting in 2023, surplus energy will be sold while retaining renewable energy certificates. Increased to 16.04% in 2024. Increased to 18.16 in 2025. Yantai Plant completed Phase I of the solar power station and started using it in March 2024. Purchase Renewable Energy Certificates in 2024. Increased to 3.41% in 2024. Increased to 31.87 in 2025. Jiangxi Plant started using solar and wind power in April 2024. Group renewable energy usage rate (2022) 0.06% > (2023) 0.68% > (2024) 3.92% > (2025) 29.44%
Promote low-carbon manufacturing to reduce Greenhouse Gas emissions	Ongoing every year		Annual review and sharing
Promote ISO 50001 Energy Management System certification	In progress, some sites completed		Honghuasheng, Yantai has obtained ISO 50001 Energy Management System certification (valid until October 12, 2026), and New Ocean, Jiangxi is also actively implementing it.

▼ 2025 Energy Conservation and Carbon Reduction Management Policies for



Each Plant

Plant	Energy conservation and carbon reduction management measures implemented by each plant		
Pan-International, Taipei (Office)	1. Office Electricity Resource Management 3. Replace with energy-saving light tubes	2. Promote turning off power for unused electrical appliances 4. Move into new plant offices that comply with green initiatives in December 2024	
Dongguan Pan-International	1. Promote turning off power for unused electrical appliances 3. Feed-in tariff for surplus green energy	2. Direct solar power supply generation	
New Ocean, Jiangxi	1. Insulation extruder converted to server for energy-saving improvement project. 3. Purchase Green Electricity 5. Replace with energy-saving light tubes	2. Replace the profiling machine with a new energy-saving machine 4. Promote turning off power for unused electrical appliances	
Honghuasheng, Yantai	1. Air compression station conducts waste heat recovery.	2. Introduction of new energy-saving dust collection fan in Manufacturing Division 1	3. Replace compressed air drying with exhaust air from electroplating line

Plant	Energy conservation and carbon reduction management measures implemented by each plant			
	4. Combine fans for tin plating line/package machines	5. Replacement of Old with New for dust collector	6. Replace compressed air drying with vacuum exhaust air.	
	7. Combine fans and shut down.	8. Replacement of old pumps	9. Replacement of outer layer pre-processing	
	10. Replacement of Old with New for packaging machines	11. Direct solar power supply generation	3. Purchase Green Electricity/Renewable Energy Certificates	
CJ Electric Systems, Wuhu, Chaohu Ruichang, Anqing Ruiyu, Wuhu Hezhong	1. Promote turning off power for unused electrical appliances	2. Replace with energy-saving light tubes	3. Replace fuel-powered work vehicles with new energy vehicles	4. Rooftop solar installation
Mainland China subsidiaries	In addition to self-building solar power stations, Mainland China is actively promoting energy structure adjustments in response to global energy-saving and carbon reduction trends; large-scale applications of new energy sources such as wind power and solar power generation are being widely increased. The Group's plants utilize local electricity, contributing to carbon reduction through the use of green energy.			
All units	Promote implementation of ISO 50001			
PIU, Taiwan-Czech Electronics, Huizhou Taiwan-Czech Electronics, Dongguan Guangshan, Yibin Pan-International, CJ Electric Systems, Ordos	Office and warehouse: Promote turning off power for unused electrical appliances			

To effectively improve the Group's energy use efficiency, we have introduced the ISO 50001 Energy Management System standard for the higher energy-consuming plant - Honghuasheng, Yantai, and plan to encourage other plants to follow. In accordance with ISO 14064-1:2018 Greenhouse Gas Inventory Standards, an energy resource inventory is conducted by monitoring direct measurements of energy usage through on-site meters. Energy consumption within the plant is estimated using mass balance and procurement quantity methodologies. The Sustainability Committee - Energy Management Group is responsible for integrating the energy use status from each operating location, understanding the main energy types at each site, [identifying opportunities to improve energy efficiency and performance](#), and formulating energy-saving improvement plans and short, medium, and long-term goals. The Sustainability Committee supervises the implementation of energy policies annually and adjusts energy plans in a timely manner to ensure the achievement of energy-saving goals.

As of the end of 2025, Honghuasheng, Yantai passed ISO 50001 external verification. The Group also strengthens the promotion of company energy-saving policies, holds relevant promotion activities and education and training courses to enhance employees' energy-saving and carbon reduction concepts.

Location	Whether ISO 50001 has been implemented	Energy supervision unit and its responsibilities	Energy data collection method
Pan-International, Taipei (Office)	None	Environmental Engineering Department	Direct measurement, financial data, evidence-based estimation
Dongguan Pan-International	Planning	Management Department	Meter monitoring, financial data, evidence-based estimation
New Ocean, Jiangxi	Ongoing	Engineering Department	Model analysis, meter monitoring, financial data, evidence-based estimation
Honghuasheng, Yantai	2026/10/12	Plant Affairs Department	Direct measurement, meter monitoring, financial data, evidence-based estimation
CJ Electric Systems, Wuhu, Chaohu Ruichang, Anqing Ruiyu, Wuhu Hezhong	None	Management Department	Meter monitoring, financial data, evidence-based estimation
PIU, Taiwan-Czech Electronics, Huizhou Taiwan-Czech Electronics, Dongguan Guangshan, Yibin Pan-International, CJ Electric Systems, Ordos	None	Pan-International, Taipei assists in management (less than 20 people)	Direct measurement, financial data

Note: Dates listed in the table represent the expiration dates of the certificates

5.1.3 Energy Consumption

(GRI 302-1、302-3)

Non-renewable energy intensity:
Decreased by 19.94% compared to
the baseline year.

Total non-renewable energy
consumption decreased by
27.63% compared to the baseline

The renewable energy
usage rate increased to
29.44%.

Energy Management and Renewable Energy Promotion (Corresponding to SDG 7: Affordable and Clean Energy, SDG 12: Responsible Consumption and Production, SDG 13: Climate Action)

In 2025, the total energy consumption within Pan-International Group's organizational boundary was **546,221.866 GJ**, an increase of **13,328.709 GJ** compared to the 2022 base year (532,893.157 GJ). This was mainly due to increased production capacity and an expanded boundary for this year, including the addition of 8 new subsidiaries. The energy intensity was **26.051 GJ per million NTD in revenue**.

The energy use structure is primarily based on **purchased non-renewable electricity**, accounting for approximately 62.34% of total energy consumption, and renewable energy, making up about 29.44% of total energy consumption; the remainder consists of **purchased thermal energy at 2.35% and fossil fuels at 5.88%**. Therefore, in terms of energy-saving strategies, the Group will focus on **reducing electricity usage intensity and increasing the proportion of renewable energy use** in the future.

In 2025, the Group's renewable energy usage ratio increased to **29.44%**, showing a significant increase of **29.38 percentage points** compared to the base year 2022 (0.06%) and an increase of **25.52 percentage points** compared to 2024 (3.92%), demonstrating Pan-International's proactive approach in energy transition.

Non-Renewable Energy Usage Trend Analysis (Corresponding to SDG 13: Climate Action)

In 2025, total non-renewable energy consumption was **385,438.100 GJ**, decreasing by **91,365.550 GJ (476,803.650 GJ; -19.16%)** compared to 2024, and decreasing by **147,136.695 GJ (532,574.795 GJ; -27.63%)** compared to 2022 (base year), demonstrating significant energy-saving results.

However, the non-renewable energy intensity (**18.383 GJ per million NTD in revenue**) decreased by **4.578 (22.961 GJ per million NTD in revenue; -19.94%)** compared to the base year 2022, and decreased by **6.659 (25.041 GJ per million NTD in revenue; -26.59%)** compared to 2024. The main reason was the improvement in the percentage of renewable energy use in 2025, with the Honghua plant replacing high-energy-consuming electricity (imported electricity) with clean energy (natural gas).

Optimization of Energy Structure (Replacing Electricity with Gas)

Honghuasheng, Yantai is the group's primary energy consumption location. In 2025, the redevelopment of the humidification systems in Plant A1 and Plant A3 was completed, replacing the high electricity-consuming electrode humidifiers with natural gas boilers. Natural gas accounts for 93.19% of fossil fuels. Although the usage of natural gas has increased, it has effectively reduced overall electricity consumption and total carbon emissions.

Energy Management effectiveness, increase in renewable energy.

1. Rooftop photovoltaic cooperative model: Provide rooftop space in the plant free of charge to professional solar energy companies for system installation, and repurchase green electricity at preferential prices, effectively reducing electricity costs and promoting the development of the green supply chain.

2. Dongguan Plant "surplus power grid-connection": Feed unused excess solar power into the public power grid, creating additional revenue while enhancing the overall efficiency of green electricity usage in the area.

3. Green electricity and certificate procurement: Locations such as Honghuasheng, Yantai, and New Ocean, Jiangxi continue to transform through the procurement of green electricity and Green Electricity Certificates (GEC) according to plant criteria, promoting the renewable energy usage rate of Honghuasheng, Yantai to reach 31.87%.

4. Project Highlights: Waste Heat Recovery Performance at Honghuasheng Yantai (GRI 302-4) The Honghuasheng Yantai plant is actively implementing a circular economy and energy transition by utilizing a waste heat recovery system in the air compressor station. This system converts the waste heat generated during the operation of air compressors into domestic hot water, which is stored and supplied to dormitory employees for washing during morning and evening hours. The Honghuasheng Yantai plant actively implemented waste heat utilization, successfully achieving **a waste heat recovery energy of 5,163.053 GJ** in 2025 (not included in the baseline energy consumption table), effectively reducing overall energy waste and consolidating sustainable circular benefits.

5. Respectively reduced energy consumption by approximately 13,467.662 GJ through replacing Energy Saving Equipment and 2,488.292 GJ through Process Improvement.

We will continue to implement diverse energy-saving initiatives, including:

- Implementation of energy-saving equipment suitable for each location
- Continuous promotion of process improvements
- Regular review of energy-saving effectiveness and target achievement progress
- Replace high energy consumption electricity with clean energy.

Through these efforts, we steadily advance toward the next milestone in **energy conservation and carbon reduction**.

▼ **2025 - Location - Energy Consumption Analysis Table** (Unit: Gigajoules, GJ)

Energy not calculated in the above table.	Waste Heat Recovery Energy (GJ)	Honghuasheng, Yantai	5163.053 GJ
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Location	Non-renewable energy						Total Non-renewable Energy Consumption(GJ)	Renewable energy			Total Renewable Energy Consumption(GJ)	Energy Consumption(GJ)	Energy intensity (GJ/million revenue)	Non-renewable energy intensity (GJ/million revenue)	Percentage of renewable energy use
	Fossil fuels				Purchased Energy Consumption			Purchased Renewable Energy Source(GJ)							
	Natural gas	Gasoline for vehicles	Diesel	Ethanol	Electricity (excluding only Renewable Energy Certificates)	Thermal energy		Solar energy (direct supply)	Solar energy (Electricity certificate integration)	Electricity and Certificate Separation (only Renewable Energy Certificates) (GJ)					
Pan-International, Taipei	0.000	0.000	0.000	0.000	1,185.918	0.000	1,185.918	0.000	0.000	0.000	0.000	1,185.918	0.134	0.134	0.00%
Dongguan Pan-International	0.000	84.640	0.000	0.086	17,507.393	0.000	17,592.120	3,423.717	0.000	478.909	3,902.626	21,494.746	13.524	11.069	18.16%
New Ocean, Jiangxi	0.000	627.549	40.434	0.000	17,799.984	0.000	18,467.967	0.000	1,569.958	0.000	1,569.958	20,037.924	17.672	16.287	7.83%
Honghuasheng, Yantai	29,945.026	0.000	0.000	0.000	289,285.745	12,773.220	332,003.991	20,820.556	0.000	134,490.625	155,311.182	487,315.173	120.952	82.404	31.87%
CJ Electric Systems, Wuhu	0.000	116.427	311.203	0.636	9,270.095	0.000	9,698.361	0.000	0.000	0.000	0.000	9,698.361	4.807	2.946	0.00%
PIU (USA)	0.000	0.000	0.000	0.000	66.164	0.000	66.164	0.000	0.000	0.000	0.000	66.164	0.199	0.199	0.00%
Chaohu Ruichang	0.000	38.323	649.691	2.285	2,762.766	0.000	3,453.064	0.000	0.000	0.000	0.000	3,453.064	NA*	NA*	0.00%
Anqing Ruiyu	0.000	22.255	270.945	1.622	1,498.010	0.000	1,792.831	0.000	0.000	0.000	0.000	1,792.831	NA*	NA*	0.00%
Wuhu Hezhong	0.000	0.000	0.000	0.000	680.404	0.000	680.404	0.000	0.000	0.000	0.000	680.404	NA*	NA*	0.00%
Yibin Pan-International	0.142	23.304	0.000	0.000	165.231	37.681	226.358	0.000	0.000	0.000	0.000	226.358	0.439	0.439	0.00%
Taiwan-Czech Electronics	0.000	0.000	0.000	0.000	44.643	0.000	44.643	0.000	0.000	0.000	0.000	44.643	0.055	0.055	0.00%
Huizhou Taiwan-Czech Electronics	0.000	0.000	0.000	0.000	14.340	0.000	14.340	0.000	0.000	0.000	0.000	14.340	0.065	0.065	0.00%
Dongguan Guangshan	0.000	0.000	0.000	0.000	14.168	0.000	14.168	0.000	0.000	0.000	0.000	14.168	0.088	0.088	0.00%
CJ Electric Systems, Ordos	0.000	0.000	0.000	0.000	197.771	0.000	197.771	0.000	0.000	0.000	0.000	197.771	NA*	NA*	0.00%

Total amount 29,945.169 912.496 1,272.272 4.630 340,492.631 12,810.901 385,438.100 24,244.274 1,569.958 134,969.534 160,783.765 546,221.866 26.051 18.383 29.436%

Note 1: The calorific values are sourced from the Bureau of Energy, MOEA, multiplying energy usage by unit calorific value and converting to gigajoules (GJ) to calculate energy consumption.

Note 2: Calorific value conversion: China Gasoline has a calorific value of 10,300kcal/kg; China Diesel has a calorific value of 10,200kcal/kg; China natural gas has a calorific value of 8,505kcal/m³, based on <GB / T 2589-2020 General Principles for Calculation of Energy Consumption>

Note 3: Conversion: China gasoline 1 L = 1 L x 0.7475 L/kg density x gasoline calorific value 10300 kcal/kg = 7699.2500 kcal/L x 4.187 KJ/kcal = 0.0322 GJ (2024 updated data)

Note 4: Conversion: China diesel 1 L = 1 L x 0.8275 L/kg density x diesel calorific value 10200 kcal/kg = 8440.5000 kcal/L x 4.187 KJ/kcal = 0.0353 GJ (2024 updated data)

Note 5: As most subsidiaries of the Group are manufacturing-based industries, revenue in millions of TWD is chosen as the denominator for intensity calculations.

Note 6: The total statistics for Pan-International, Taipei for the entire Year 2025 include the total amount from both the new Zhonghe Headquarters and the Xindian Headquarters (decommissioned awaiting urban renewal).

Note 7: The energy statistics for CJ Electric Systems, Wuhu include Ruichang (factory area) and Dechang (warehouse).

Note 8: Electricity and Certificate Separation (only Renewable Energy Certificates): Dongguan Pan-International adopts the model of feed-in tariff for surplus green energy and retains Renewable Energy Certificate rights; Honghuasheng, Yantai, on the other hand, purely purchases Renewable Energy Certificates without physical green electricity transactions.

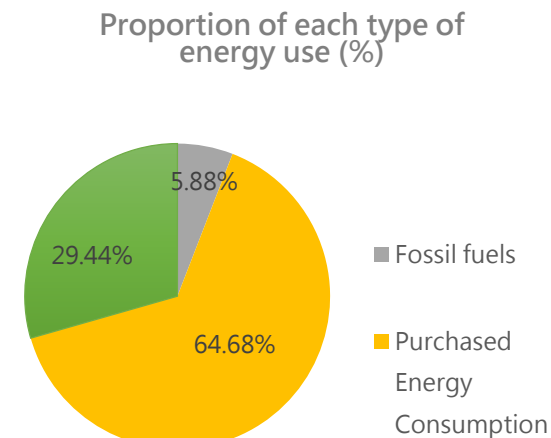
Note 9*: The revenues of Chaohu Ruichang, Anqing Ruiyu, Wuhu Hezhong, and CJ Electric Systems, Ordos are included in CJ Electric Systems, Wuhu, so the density is collectively calculated in CJ Electric Systems, Wuhu.

▼ 2025 Year - Non-renewable Energy, Renewable Energy Percentage - Location/Group

Location	Percentage of Renewable Energy Group Use (%)	Percentage of Non-renewable Energy Group Use (%)	Energy Consumption(GJ)	Proportion of Group Energy Use
Honghuasheng, Yantai	96.60%	86.14%	487315.173	89.22%
Dongguan Pan-International	2.43%	4.56%	21494.746	3.94%
New Ocean, Jiangxi	0.98%	4.79%	20037.924	3.67%
CJ Electric Systems, Wuhu	0.00%	2.52%	9698.361	1.78%
Chaohu Ruichang	0.00%	0.90%	3453.064	0.63%
Anqing Ruiyu	0.00%	0.47%	1792.831	0.33%
Pan-International, Taipei	0.00%	0.31%	1185.918	0.22%
Total of Other Locations	0.00%	0.32%	1243.849	0.23%

▼ GRI 302-1 Energy consumption within the organization

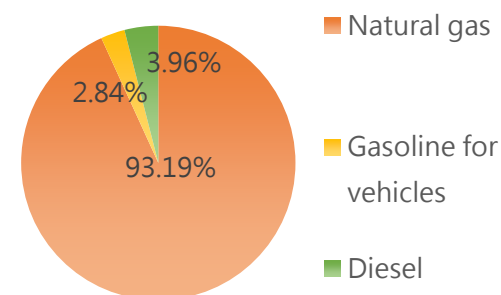
Item	Sub-item	Total Consumption (GJ)	Percentage (%)	Category	Total Consumption (GJ)	Percentage (%)
Fossil fuels	Natural gas	29,945.169	5.48%	Non-renewable energy	32,134.567	5.88%
	Gasoline for vehicles	912.496	0.17%	Non-renewable energy		
	Diesel	1,272.272	0.23%	Non-renewable energy		
	Liquefied petroleum gas	0.000	0.00%	Non-renewable energy		
	Ethanol	4.630	0.00%	Non-renewable energy		
Purchased Energy Consumption	Purchased Electricity	340,492.631	62.34%	Non-renewable energy	353,303.533	64.68%
	Purchased Thermal Energy	12,810.901	2.35%	Non-renewable energy		
Renewable energy	Solar energy (direct supply)	24,244.274	4.44%	Recycling	160,783.765	29.44%
	Solar energy (Electricity certificate integration)	1,569.958	0.29%	Recycling		
	Electricity and Certificate Separation (only Renewable Energy Certificates)	134,969.534	24.71%	Recycling		



▼ 2025 Year - Group - Fossil Fuels Percentage by Category

Fuel Category	Consumption (GJ)	Fuel Percentage (%)
Natural gas	29945.169	93.19%
Gasoline for vehicles	912.496	2.84%
Diesel	1272.272	3.96%
Liquefied petroleum gas	0.000	0.00%
Ethanol	4.630	0.01%

Fuel Percentage (%)



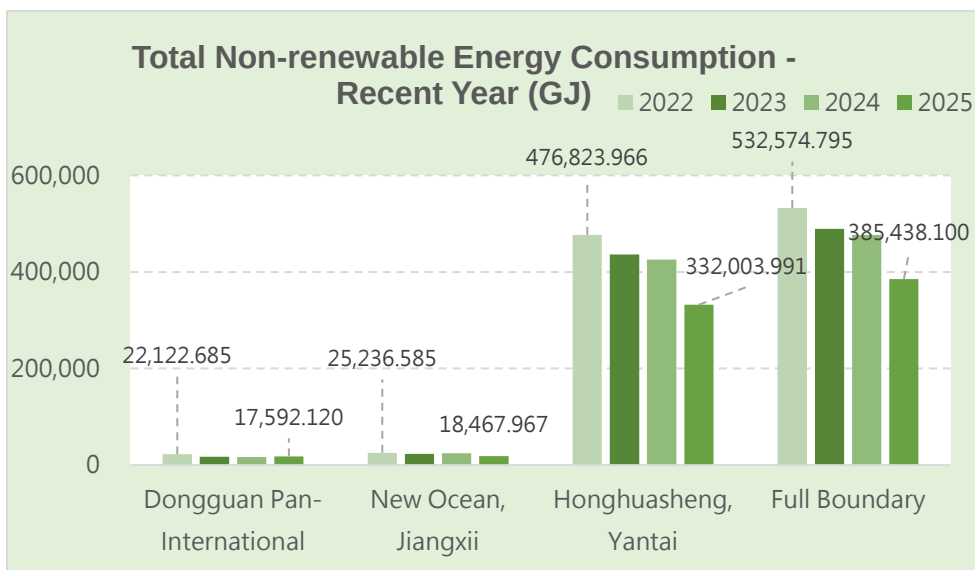
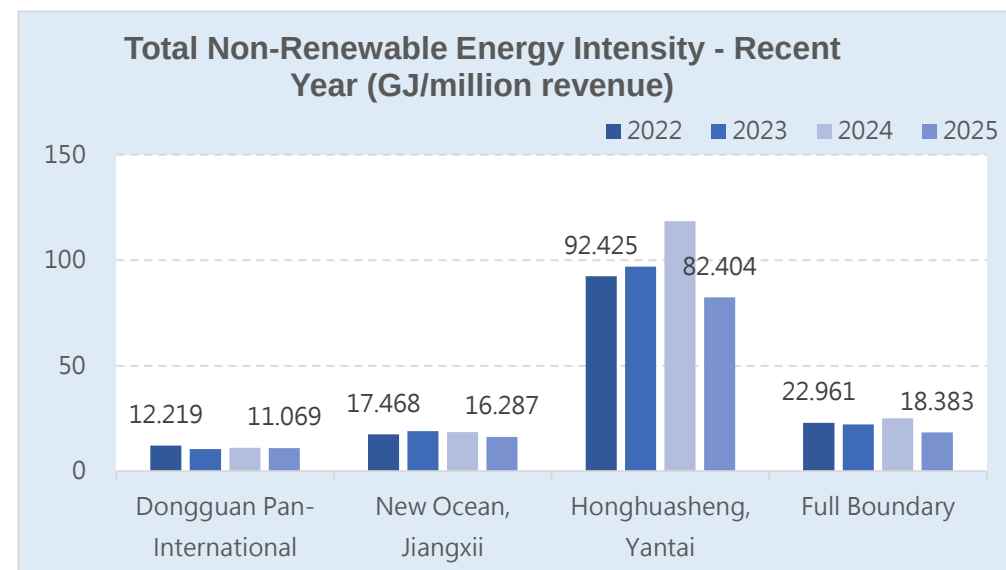
▼ **Hotspot/Full Boundary - Last Three Years and Base Year (2022) - Energy Consumption, Non-renewable Energy Intensity Summary**
(Unit: GJ, GJ/million revenue)

Total Non-renewable Energy Consumption - Recent Year (GJ)

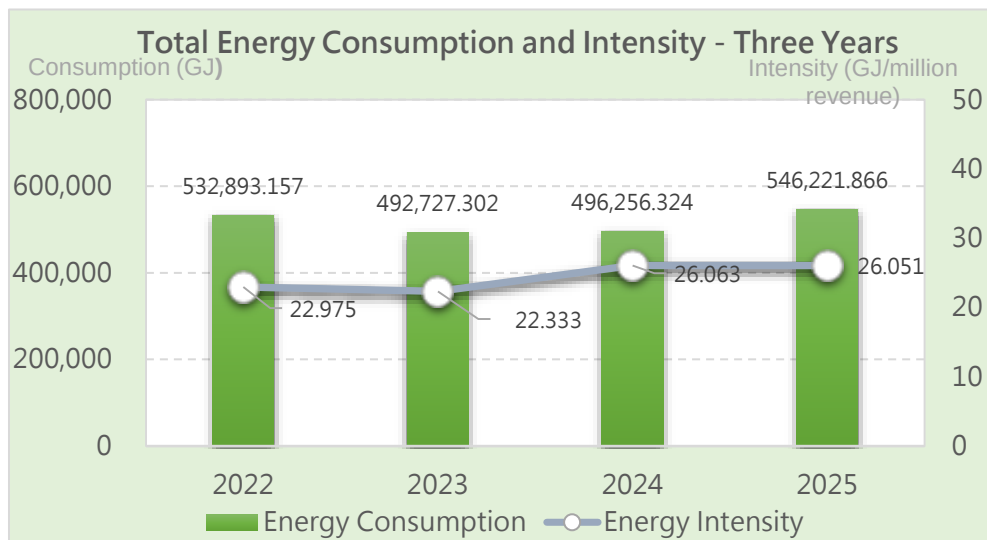
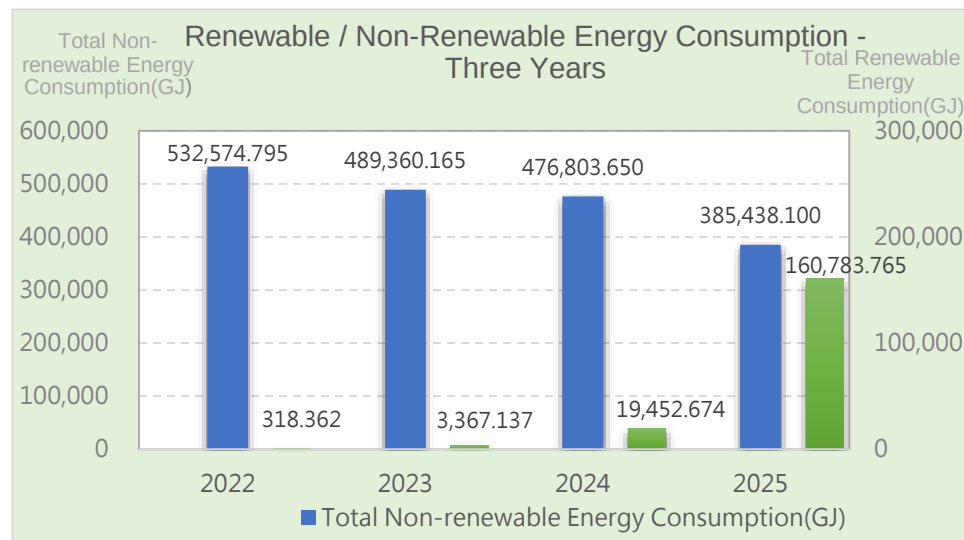
Location	2022	2023	2024	2025
Dongguan Pan-International	22,122.685	16,965.958	16,594.166	17,592.120
New Ocean, Jiangxi	25,236.585	22,779.378	24,615.240	18,467.967
Honghuasheng, Yantai	476,823.966	435,955.161	425,861.576	332,003.991
Full Boundary	532,574.795	489,360.165	476,803.650	385,438.100

Non-renewable energy intensity

2022	2023	2024	2025
12.219	10.560	11.156	11.069
17.468	19.056	18.651	16.287
92.425	96.930	118.594	82.404
22.961	22.180	25.041	18.383



▼ **Last Three Years and Base Year (2022) – Full Boundary Energy Consumption and Intensity, Total Non-renewable and Renewable Energy Consumption**

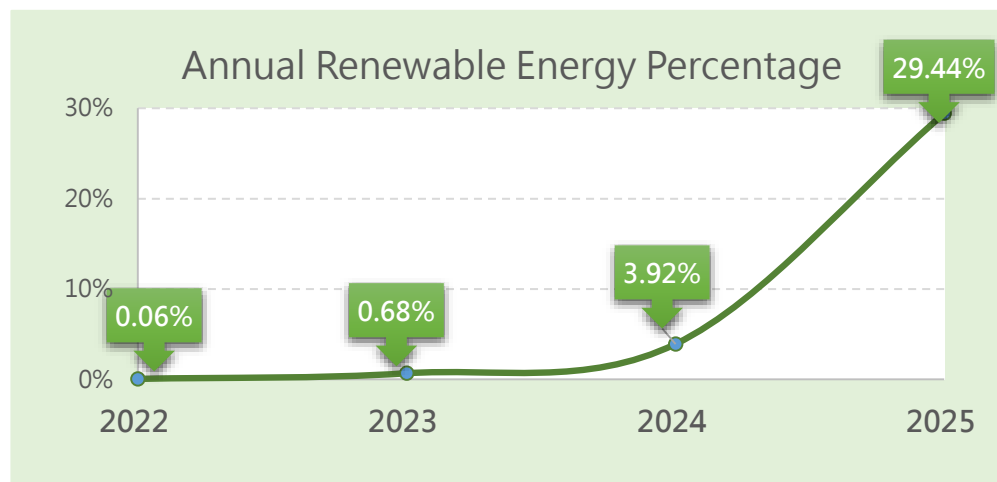


Year	2022	2023	2024	2025
Energy Consumption(GJ)	532893.157	492727.302	496256.324	546221.866
Energy intensity (GJ/million revenue)	22.975	22.333	26.063	26.051

Year	2022	2023	2024	2025
Total Non-renewable Energy Consumption(GJ)	532574.795	489360.165	476803.650	385438.100
Total Renewable Energy Consumption(GJ)	318.362	3367.137	19452.674	160783.765

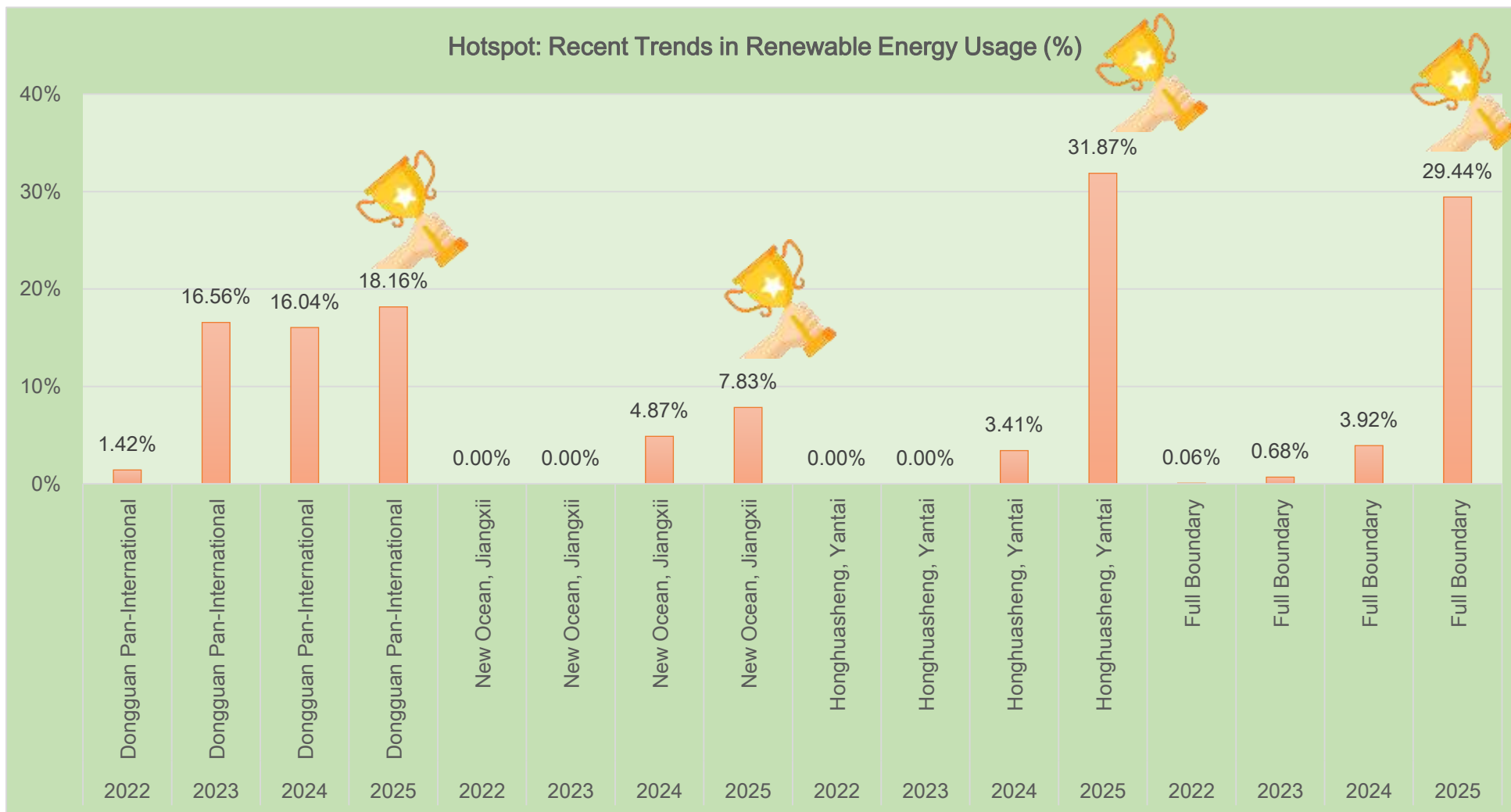
▼ **Last Three Years and Base Year (2022) – Percentage of renewable energy use**

Year	2022	2023	2024	2025
Percentage of renewable energy use	0.06%	0.68%	3.92%	29.44%



▼ **2025 Renewable Energy Usage Rate (and Future Plans) by Location (Plant):**

Location	2022	2023	2024	2025	Planning progress
Dongguan Pan-International	1.42%	16.56%	16.04%	18.16%	2022/12 Rooftop Solar Station began operation, Starting in 2023, surplus energy will be sold while retaining renewable energy certificates. Increased to 16.04% in 2024. Increased to 18.16 in 2025.
New Ocean, Jiangxi	0.00%	0.00%	4.87%	7.83%	Purchase renewable energy in 2024: Unable to install solar station due to plant structure limitations. Increased to 4.87% in 2024. Increased to 7.83 in 2025.
Honghuasheng, Yantai	0.00%	0.00%	3.41%	31.87%	First phase of rooftop solar station completed in 2024. Purchase Renewable Energy Certificates in 2024. Increased to 3.41% in 2024. Increased to 31.87 in 2025.
CJ Electric Systems, Wuhu	0.00%	0.00%	0.00%	0.00%	CJ Electric Systems, Wuhu, Planning the solar station construction.
Full Boundary	0.06%	0.68%	3.92%	29.44%	For the Group, Planning the solar station construction. Purchase Green Electricity Purchase Renewable Energy Certificates



5.1.4 Greenhouse Gas Emissions

Greenhouse Gas Inventory and Management Performance (SDG 13: Climate Action)

Emission intensity:
Decreased by 23.5%

Total GHG emissions
↓ 17.17% (compared
with 2022)

Assurance, ISO
verification: Taiwan and
China

Pan-International Industrial Corp. follows the GHG Protocol Greenhouse Gas Inventory Standard to establish the Group's Greenhouse Gas management system, adopting the Operational Control Approach as the principle for setting organizational boundaries. In accordance with the "Greenhouse Gas Reduction and Management Act" and the "Climate Change Response Act" as well as the relevant regulatory authorities, it continues to promote Greenhouse Gas inventory, verification, and reduction management efforts to identify emission sources, reduce climate risks, and gradually enhance low-carbon operational capabilities.

For the Group: A systematic Greenhouse Gas Inventory procedure, document management mechanism, and Greenhouse Gas Inventory management procedure document have been established. Following the PDCA (Plan-Do-Check-Act) management cycle, the Group continuously reviews inventory results, develops reduction strategies, and tracks improvement effectiveness. The Greenhouse Gas emissions are quantified using the internationally accepted emission factor method and verified by an internal verification team for activity data, quantification methods, emission factors, and related supporting documents to ensure the completeness and reliability of the inventory data.

Scope - For the Group (includes PIB)

The 2025 Year inventory scope is in accordance with IFRS S1 standards, aligning the Boundary with the consolidated financial statements. Include all subsidiaries, including the parent company, subsidiaries in mainland China, the US, and Southeast Asia, comprising Pan-International, Taipei; Dongguan Pan-International; New Ocean, Jiangxi; Honghuasheng, Yantai; CJ Electric Systems, Wuhu; PIU (USA); Chaohu Ruichang; Anqing Ruiyu; Wuhu Hezhong; Yibin Pan-International; Taiwan-Czech Electronics; Huizhou Taiwan-Czech Electronics; Dongguan Guangshan; CJ Electric Systems, Ordos; and the PIB Group (PIT, PIW, PIE).

This year's disclosure scope includes: Scope 1: Direct Greenhouse Gas Emissions, including stationary sources, mobile sources, fugitive emissions, and process sources. Scope 2: Indirect emissions from purchased energy, including Purchased Electricity and thermal energy. Scope 3: Under the current stage of resource management and data availability, priority is given to the qualitative and quantitative inventory of Category 1 "Purchased Products and Services," Category 3 "Fuel and Energy Related Activities," and Category 5 "Operational Waste"; some locations have also completed inventories for Category 4 "Upstream Transportation," Category 6 "Business Travels," and Category 7 "Employee Commuting." Other categories that are difficult to classify and quantify due to their substantial nature or where the Company has no related items in those categories are not included in this inventory scope.

The types of Greenhouse Gases covered in the inventory include those regulated by the Kyoto Protocol: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), and nitrogen trifluoride (NF₃).

Calculation Methods and Emission Factor References

The Group uses the emission factor method for inventory, converting to carbon dioxide equivalent (CO₂e) using the formula "activity data × emission factor × Global Warming Potential (GWP)", with the unit being metric tons (tCO₂e). Data sources are as follows: The emission factor is from the Taiwan Energy

Agency's 2026 announcement of the 2025 electricity carbon emission factor; China's Scope 2 Purchased Electricity factor is based on the 2023 national average electricity carbon dioxide emission factor as announced in 2025 by the Ministry of Ecology and Environment of China in the "2023 Electricity Carbon Dioxide Emission Factor"; Malaysia's Energy Commission 2017-2022 Grid Emission Factors (GEF); the latest Greenhouse Gas Emission Factor Management Table (Version 6.0.4) published by the Environmental Protection Administration; GWP values are based on the IPCC Sixth Assessment Report (2025 Errata); and for China's diesel, gasoline, and thermal energy calculations, values are based on China's Ministry of Ecology and Environment standards, GB/T 2589-2020 General Principles for Calculation of Comprehensive Energy Consumption, and the Guidelines for Accounting Methods and Reporting of Greenhouse Gas Emissions for Electronic Equipment Manufacturing Enterprises (Trial) issued by the National Development and Reform Commission.

Third-party verification

To enhance the credibility of the inventory information, the parent company and the main emission hotspot plants entrusted a third-party verification body to execute Greenhouse Gas assurance and verification this year, while other subsidiaries had their verification operations completed by the Group's internal verification team according to management procedures. The Group continues to plan for the gradual expansion of the scope of third-party verification to improve the overall quality of Greenhouse Gas management.

Base year setting

Since 2022, the Group has continued to conduct the Group's Greenhouse Gas Inventory, with the Taipei parent company and major subsidiaries in mainland China (Dongguan Pan-International, New Ocean, Jiangxi, Honghuasheng, Yantai, and CJ Electric Systems, Wuhu) using 2022 as the base year for Scope 1 and Scope 2. Starting in 2023, the U.S. subsidiary PIU (USA) has been included in the inventory.

Starting in 2025, the Group will expand the Greenhouse Gas Inventory boundary to include all subsidiaries in the consolidated financial statements, adding new locations such as Chaohu Ruichang, Anqing Ruiyu, Wuhu Hezhong, Yibin Pan-International, Taiwan-Czech Electronics, Huizhou Taiwan-Czech Electronics, Dongguan Guangshan, CJ Electric Systems, Ordos, and the PIB Group (PIT, PIW, PIE). Considering the impact of the expansion of the inventory boundary on the Greenhouse Gas Emissions, the Group follows the GHG Protocol baseline recalculation principles and **resets 2025 as the "baseline year for the Group's Greenhouse Gas Emissions,"** serving as the basis for subsequent reduction goal setting, performance tracking, and management.

Each subsidiary may set its "individual Greenhouse Gas emissions base year" according to its operational status and inventory circumstances. The current baseline year for Dongguan Pan-International, New Ocean, Jiangxi, and Honghuasheng, Yantai is 2022.

2025 marks the first time Pan-International Industrial Corp. completed a Greenhouse Gas Inventory for the Group's consolidated financial statement subsidiaries, covering locations in Taiwan, Mainland China, the United States, and Southeast Asia. The scope of the inventory expanded from the main production sites to the entire Group, further enhancing the completeness of Greenhouse Gas information disclosure and establishing a common foundation for the Group's future carbon reduction management and net zero transformation.

▼ **2025 Greenhouse Gas Inventory Results: Full Organizational Boundary, all subsidiaries included in the consolidated financial statements (including PIB)**

Category	Item	Value		Unit
Scope 1	Direct Emissions	3,034.5851		tCO ₂ e
Scope 2	Purchased Electricity and Heat	Location-based standard 93,086.2767	Market-based standard 72,966.4553	tCO ₂ e
Scope 1+2 Total Emissions (Market-based)	Including Scope 1-2	76001.040		tCO ₂ e
Scope 1+2 Emission Intensity (Market-based)	Including Scope 1-2	2.776		tCO ₂ e / Million NTD Revenue
Scope 3 (Category 1-15)	Other Indirect Emissions	355699.0870		tCO ₂ e
Total Emissions (Market-based)	Including Scope 1-3	431700.1274		tCO ₂ e
Emission Intensity (Market-based)	All Scopes	15.7703		tCO ₂ e / Million NTD Revenue

Note: The Greenhouse Gas (GHG) values listed in this table are calculated according to the Group's unified standards. However, due to joint verification with industrial parks in Mainland China, the actual verification values for Yantai and Jiangxi plants may slightly differ due to regional joint inventory mechanisms.

Structure distribution:

- **Scope 1 (Direct Emissions):** Only 3,034.5851 tCO₂e, accounting for 0.70% of total emissions.
- **Scope 2 (Purchased Electricity):** 72,966.4553 tCO₂e, accounting for 16.90% of total emissions (96.01% of Scope 1+2).
- **Scope 3 (Value Chain Upstream and Downstream):** As high as 355,699.0870 tCO₂e, accounting for 82.39% of overall total emissions.

▼ 2025 Year - Each Location - Scope 1, Scope 2 Emission (tCO₂ e), Group Share (%), Emission Intensity (tCO₂ e/Million NTD Revenue) (includes PIB)

Among the locations, Honghuasheng, Yantai is the Group's primary emission hotspot, with total Scope 1 and Scope 2 emissions of 46,079.515 tCO₂e, accounting for 60.63% of the Group. This is followed by the PIB Group at 22,032.000 tCO₂e, accounting for 28.99%, with Dongguan Pan-International and New Ocean, Jiangxi accounting for 3.47% and 3.59%, respectively. The top four locations account for approximately 96.7% of the Group's total Scope 1 and Scope 2 emissions, making them key management targets for promoting energy-saving improvements, enhancing energy efficiency, and expanding the use of renewable energy. The Group's Scope 1 and Scope 2 Greenhouse Gas Emissions are highly concentrated at major manufacturing locations. In the future, efforts will continue to gradually reduce energy-related emissions and enhance low-carbon operational performance through measures such as energy efficiency improvements, process optimization, the introduction of low-carbon equipment, and the procurement of renewable energy.

Location	Scope 1 Emissions	Scope 2 (Market-based)	Scope 2 (Location-based standard)	Scope 1+2 Total Emissions (Market-based)	Group Share	Scope 1+2 Intensity (Market-based)
Pan-International, Taipei*	0.0000	153.5115	153.5115	153.512	0.20%	0.017
Dongguan Pan-International	60.5593	2579.8076	2650.3774	2,640.367	3.47%	1.661
New Ocean, Jiangxi	101.7452	2622.9224	2854.2640	2,724.668	3.59%	2.403
Honghuasheng, Yantai	2046.6657	44032.8488	63850.7588	46,079.515	60.63%	11.437
CJ Electric Systems, Wuhu	112.8535	1365.9978	1365.9978	1,478.851	1.95%	0.449
PIU (USA)	0.0000	3.6446	3.6446	3.645	0.00%	0.011
Chaohu Ruichang	60.6134	407.1083	407.1083	467.722	0.62%	NA*
Anqing Ruiyu	27.5596	220.7397	220.7397	248.299	0.33%	NA*
Wuhu Hezhong	2.1222	100.2611	100.2611	102.383	0.13%	NA*
Yibin Pan-International	1.9999	28.4925	28.4925	30.492	0.04%	0.059
Taiwan-Czech Electronics	0.0000	5.7775	5.7775	5.778	0.01%	0.007
Huizhou Taiwan-Czech Electronics	0.0786	2.1131	2.1131	2.192	0.00%	0.010
Dongguan Guangshan	0.1991	2.0877	2.0877	2.287	0.00%	0.014
CJ Electric Systems, Ordos	0.1886	29.1427	29.1427	29.331	0.04%	NA*
PIB	620.0000	21412.0000	21412.0000	22,032.000	28.99%	3.439
For the Group - Total	3034.5851	72966.4553	93086.2767	76,001.040	100.00%	2.776

Note*: Pan-International, Taipei is confident in using the 2024 electricity carbon emission factor announced by the Energy Agency. The 2025 electricity carbon emission factor was announced by the Energy Agency on 2026/6/2. This table calculates the emissions for Pan-International, Taipei based on updated information, resulting in a slight discrepancy from the confident value (the confident value is 156.110 tCO₂e, and recalculated based on the updated information is 153.512 tCO₂e).

Note: The Greenhouse Gas (GHG) values listed in this table are calculated according to the Group's unified standards. However, due to joint verification with industrial parks in Mainland China, the actual verification values for Yantai and Jiangxi plants may slightly differ due to regional joint inventory mechanisms.

Note*: The revenues of Chaohu Ruichang, Anqing Ruiyu, Wuhu Hezhong, and CJ Electric Systems, Ordos are included in CJ Electric Systems, Wuhu, so the density is collectively calculated in CJ Electric Systems, Wuhu.

▼ **2025 - Each Location - Total Emissions and Scope 3 Emission (tCO₂ e), Group Share (%), Total Emission Intensity (tCO₂ e/Million NTD Revenue) (includes PIB)**

Location	Scope 3 (with availability prioritized for)						Scope 3 Total Emissions	Scope 1+2+3 Total Emissions (Market-based)	Total Emissions Group Share	Total Intensity Market-based Standard
	Category 1	Category 3	Category 4	Category 5	Category 6	Category 7				
Pan-International, Taipei	0.1401	36.4917	NA	9.7189	NA	NA	46.3507	199.862	0.05%	0.023
Dongguan Pan-International	13,801.1697	286.5917	NA	28.1267	12.5044	5.4297	14,133.8222	16,774.189	3.89%	10.554
New Ocean, Jiangxi	58.7764	284.4269	NA	17.5522	NA	NA	360.7555	3,085.423	0.71%	2.721
Honghuasheng, Yantai	44,774.8255	6,825.4436	1,314.5216	1,973.8473	17.4834	126.6393	55,032.7607	101,112.275	23.42%	25.096
CJ Electric Systems, Wuhu	85,570.9726	129.8594	NA	143.3451	13.4881	224.4355	86,082.1007	87,560.952	20.28%	26.602
PIU (USA)	0.0988	2.0642	NA	0.7036	NA	NA	2.8666	6.511	0.00%	0.020
Chaohu Ruichang	86,764.6143	49.6577	NA	54.2142	0.6532	83.9325	86,953.0719	87,420.794	20.25%	NA*
Anqing Ruiyu	76,171.6852	25.4354	NA	18.7460	NA	23.9511	76,239.8177	76,488.117	17.72%	NA*
Wuhu Hezhong	36,315.1384	8.8999	NA	8.2713	NA	NA	36,332.3096	36,434.693	8.44%	NA*
Yibin Pan-International	1.5393	5.7238	NA	0.8054	1.3784	1.3375	10.7844	41.277	0.01%	0.080
Taiwan-Czech Electronics	0.0042	1.3737	NA	0.4491	NA	0.6487	2.4757	8.253	0.00%	0.010
Huizhou Taiwan-Czech Electronics	0.0247	0.1876	NA	0.5267	NA	2.1487	2.8877	5.079	0.00%	0.023
Dongguan Guangshan	0.1075	0.1853	NA	NA	NA	0.2690	0.5618	2.849	0.00%	0.018
CJ Electric Systems, Ordos	4.6317	2.5869	NA	1.3032	NA	NA	8.5218	37.853	0.01%	NA*
PIB	NA	NA	NA	NA	49.0000	441.0000	490.0000	22,522.000	5.22%	3.515
For the Group - Total	343,463.7284	7,658.9278	1,314.5216	2,257.6097	94.5075	909.7920	355,699.0870	431,700.127	100.00%	15.770

Note*: The revenues of Chaohu Ruichang, Anqing Ruiyu, Wuhu Hezhong, and CJ Electric Systems, Ordos are included in CJ Electric Systems, Wuhu, so the density is collectively calculated in CJ Electric Systems, Wuhu.

Note: The Greenhouse Gas (GHG) values listed in this table are calculated according to the Group's unified standards. However, due to joint verification with industrial parks in Mainland China, the actual verification values for Yantai and Jiangxi plants may slightly differ due to regional joint inventory mechanisms.

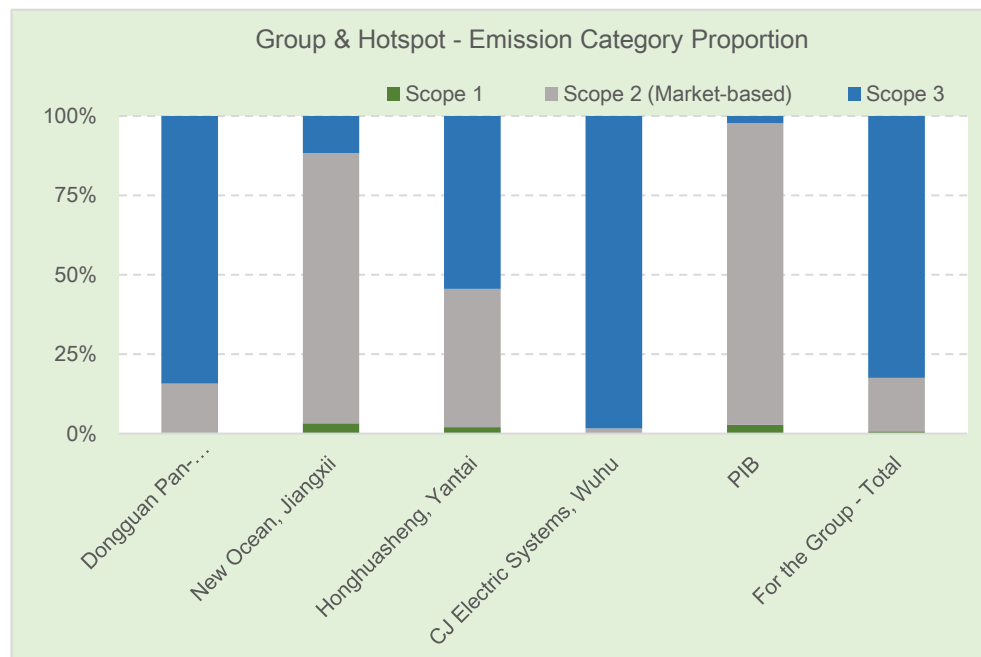
In 2025, the Group's Market-based standard Scope 3 Greenhouse Gas Emissions totaled 355,699.0870 tCO₂e. Including Scope 1 and Scope 2, the Group's Total Greenhouse Gas Emissions amounted to 431,700.127 tCO₂e, with Scope 3 accounting for approximately 82.4% of total emissions. This indicates that the Group's carbon emissions primarily stem from value chain activities, highlighting the focus for future carbon reduction management efforts.

According to emissions category analysis, Scope 3 emissions are primarily concentrated in Category 1 "Purchased Products and Services," with emissions of 343,463.7284 tCO₂e, accounting for 96.56% of total Scope 3 emissions; followed by Category 3 "Fuel and Energy Related Activities" with 7,658.9278 tCO₂e, accounting for 2.15%. Major drivers: Raw material procurement, outsourced processing, and procurement supply chain are the core sources of the Group's overall carbon footprint.

According to location analysis, Honghuasheng, Yantai has a total emissions of 101,112.275 tCO₂e, accounting for 23.42% of the Group, making it the largest emission location for the Group; followed by CJ Electric Systems, Wuhu with 87,560.952 tCO₂e (20.28%), Chaohu Ruichang with 87,420.794 tCO₂e (20.25%), and Anqing Ruiyu with 76,488.117 tCO₂e (17.72%). The top four locations account for approximately 81.7% of the Group's total emissions, mainly influenced by the scale of raw material procurement and the industrial manufacturing category.

▼ For the Group & Hotspot - Greenhouse Gas Emissions Proportion (Unit: %)(includes PIB)

Carbon emissions - Scope 1 & 2 & 3 Proportion (Scope Proportion) (%)			
Hotspot / For the Group	Scope 1 (Direct)	Scope 2 (Indirect Energy)/ Market-based	Scope 3 (Other Indirect/Availability Prioritized)
Dongguan Pan-International	0.36%	15.38%	84.26%
New Ocean, Jiangxi	3.30%	85.01%	11.69%
Honghuasheng, Yantai	2.02%	43.55%	54.43%
CJ Electric Systems, Wuhu	0.13%	1.56%	98.31%
PIB	2.75%	95.07%	2.18%
For the Group - Total	0.70%	16.90%	82.39%



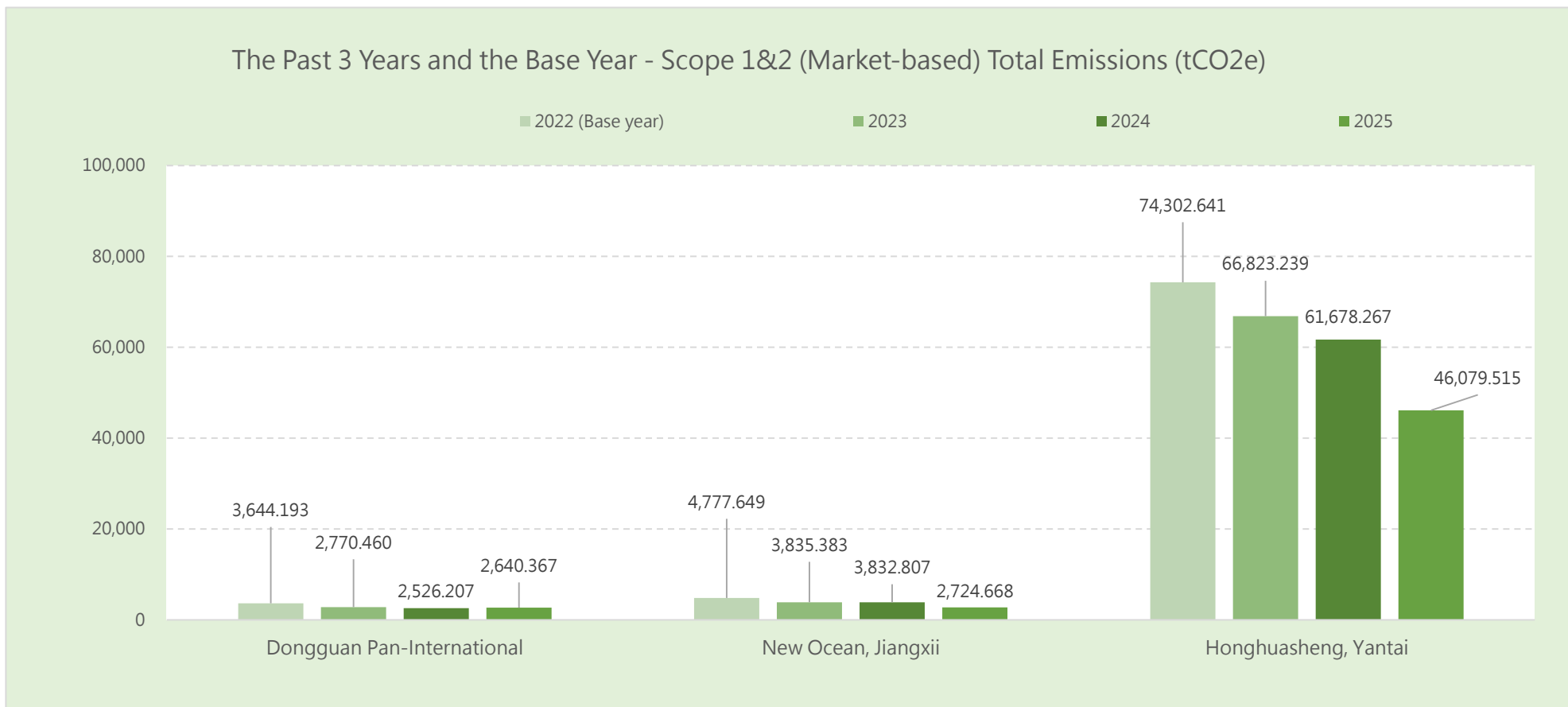
▼ **Group's Greenhouse Gas Inventory Assurance Status (Planning for the assurance of the total emissions of the entire Group for the year 2027)**

Inventory Year	Location	Assurance Organization	Assurance Standard	Scope 1	Scope 2	Scope 3	Scope 1+2 (Market) Total Emissions - Group Proportion
2025	Pan-International, Taipei	PWC	ISAE3410	Limited	Limited	Limited	0.20%
	Dongguan Pan-International	PWC	ISAE3410	Pre-assurance	Pre-assurance	NA	3.47%
	New Ocean, Jiangxi	CEPREI	ISO 14064-3	Reasonable	Reasonable	Limited	3.59%
	Honghuasheng, Yantai	CEPREI	ISO 14064-3	Reasonable	Reasonable	Limited	60.63%
	CJ Electric Systems, Wuhu	PWC	ISAE3410	Pre-assurance	Pre-assurance	NA	1.95%
2024	Pan-International, Taipei	AFNOR	ISO 14064-3	Reasonable	Reasonable	Limited	0.10%
	Dongguan Pan-International	AFNOR	ISO 14064-3	Limited	Limited	Limited	3.62%
	New Ocean, Jiangxi	CEPREI	ISO 14064-3	Reasonable	Reasonable	Reasonable	5.50%
	Honghuasheng, Yantai	CEPREI	ISO 14064-3	Reasonable	Reasonable	Reasonable	88.45%
	CJ Electric Systems, Wuhu	AFNOR	ISO 14064-3	Limited	Limited	Limited	2.33%

▼ **Carbon reduction performance (Scope 1+2 Market-based): Core main plants significantly improved (nearly 40% reduction over 3 years)**

The three main manufacturing locations (Dongguan Pan-International, New Ocean, Jiangxi, Honghuasheng, Yantai), which have set 2022 as the baseline, have all demonstrated excellent carbon reduction performance compared to 2022.

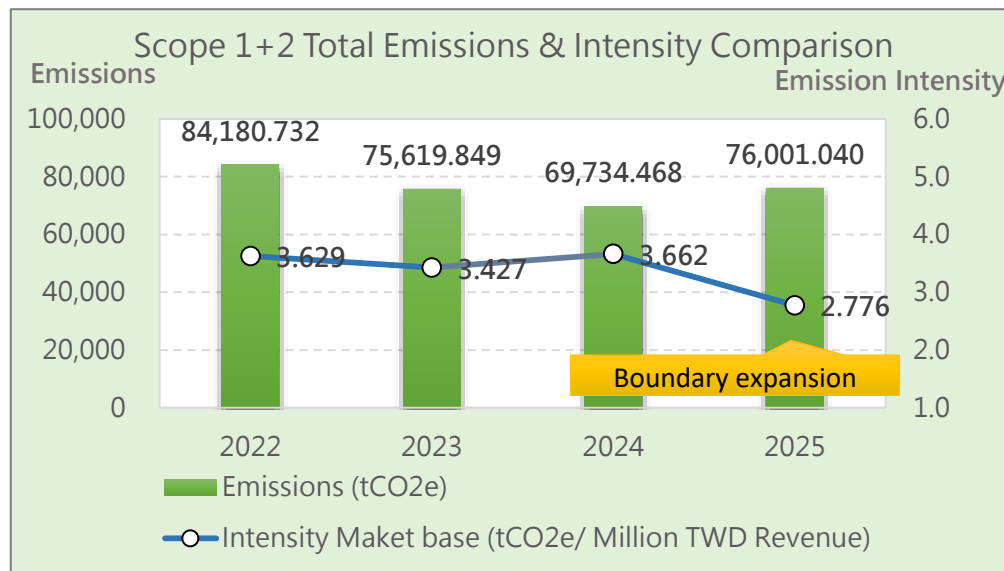
Plant	2022 (Base Year)	2023	2024	2025	Reduce emissions (Base Year) tCO ₂ e	Rate of Change (Base Year)
Dongguan Pan-International	3,644.193	2,770.460	2,526.207	2,640.367	1003.826	Decreased by 27.55%
New Ocean, Jiangxi	4,777.649	3,835.383	3,832.807	2,724.668	2052.982	Decreased by 42.97%
Honghuasheng, Yantai	74,302.641	66,823.239	61,678.267	46,079.515	28223.126	Decreased by 37.98%
Total	82724.483	73429.082	68037.280	51444.549	31279.934	Decreased by 37.81%



Key drivers for carbon reduction: Demonstrating the implementation of rooftop solar energy installation at the plant, process improvement, substitution with low-carbon energy, and policies such as the purchase of green electricity/green certificates (EACs/China Green Electricity Certificates, GEC) have produced substantive and quantifiable green transformation results.

▼ **Carbon Reduction Results: The Group's Carbon Intensity significantly decreased by 23.5% (Base Year), demonstrating strong "Green Operational Efficiency"**

Full Boundary	2022	2023	2024	2025
Scope 1+2 Emissions Market-based standard (tCO ₂ e)	84180.732	75619.849	69734.468	76001.040
Scope 1+2 Emission Intensity (Market-based) (tCO ₂ e/ Million Revenue)	3.629	3.427	3.662	2.776



- The slight increase in Total Emissions in 2025 is attributed to the "impact of organization boundary expansion."
 - Total amount change analysis: For the Group, the 2025 Scope 1+2 total emissions increased by 6,266.572 tCO₂e (an increase of approximately 8.99%) compared to 2024, mainly due to the inclusion of 8 new plants and new boundaries such as PIB in 2025.
 - The impact of the new location is significant: In 2025, PIB contributed 22,032.000 tCO₂e of Scope 1+2 emissions (accounting for 28.99% of the Group's Scope 1+2).
 - **If considering the same baseline (excluding the new locations added in 2025), the overall emissions of the existing plants are actually continuously decreasing.**
- Carbon Intensity decreased by 23.5%, demonstrating operational resilience that combines "acquisition expansion" and "efficient low-carbon" strategies.

Carbon intensity reaches a new low: Full Boundary Scope 1+2 carbon intensity significantly dropped from 2022's 3.629 tCO₂e/Million Revenue to 2025's 2.776 tCO₂e/Million Revenue, with an overall reduction of 23.5%.

- Future Carbon Reduction Strategy Focus: Energy Efficiency Replication at Newly Acquired Locations

New location becomes a new carbon reduction hotspot: A single location of PIB accounts for nearly 30% (28.99%) of the Group's Scope 1+2. In the future, the successful carbon reduction experiences of Dongguan Pan-International, New Ocean, Jiangxi, and Honghuasheng, Yantai (solar energy, green electricity procurement, and process energy saving) should be quickly replicated and introduced to PIB and the other 8 new plants as the key carbon reduction engine for the next phase.

5.1.5 Energy-saving and Carbon Reduction Measures

(GRI 302-4)

Pan-International Industrial Corp. uses 2025 as the base year to conduct energy-saving planning and design through internal energy guidelines or energy management standards. The performance standards of energy-consuming equipment are incorporated as priority choices for future equipment replacement. The company is committed to increasing renewable energy usage with the goal of achieving net-zero emissions by 2050. The company has set a target to reduce non-renewable energy intensity by 1.5% annually, and plans to reduce emission intensity by 7.5% by 2027 compared to the base year (2022) (equivalent to a 1.5% reduction per year).

We mainly adopt measures such as replacing old with new (energy-saving devices), setting up solar plants, process improvements, and equipment (unit) improvements, and regularly track performance results. In 2024, the company invested a total of **NTD 18,565,246** in energy-saving and carbon reduction measures. Through these implementation results, **41,135.883 GJ** of energy was saved, reducing Greenhouse Gas emissions by **5,803.463 tCO₂e**.

SDG Alignment:

- **SDG 7: Affordable and Clean Energy** - Promote energy efficiency improvement and renewable energy installation, such as solar power generation.
- **SDG 9: Industry, Innovation and Infrastructure** - Achieve green transformation and innovative applications through process and equipment optimization.
- **SDG 12: Responsible Consumption and Production** - Implement energy management systems and introduce energy-saving equipment to promote efficient resource utilization.
- **SDG 13: Climate Action** - Actively formulate and implement carbon reduction strategies, progressing toward the 2050 net-zero goal.

▼ Pan-International Group Energy-saving and Carbon Reduction Measures Overview

Location	Energy-saving Method	Method Description	Energy Name	Calculation Method	Investment amount in NTD	Energy saving consumption	Energy Saving Volume (GJ)	Carbon Reduction Volume (tCO ₂ e)	Reduction Scope
New Ocean, Jiangxi	Equipment (unit) improvement:	Insulation extruder converted to server for energy-saving improvement project.	Electricity	Evidence-based Estimation	438,487.33	117,504.00	423.111	62.348	Scope 2, Scope 3
New Ocean, Jiangxi	Replacement of Old with New	Replace the profiling machine with a new energy-saving machine	Electricity	Evidence-based Estimation	427,527.38	114,567.00	412.535	60.789	Scope 2, Scope 3
New Ocean, Jiangxi	Replacement of Old with New	Replace ordinary light tubes with LED.	Electricity	Evidence-based Estimation	107,300.19	28,753.90	103.538	15.257	Scope 2, Scope 3

Location	Energy-saving Method	Method Description	Energy Name	Calculation Method	Investment amount in NTD	Energy saving consumption	Energy Saving Volume (GJ)	Carbon Reduction Volume (tCO ₂ e)	Reduction Scope
Dongguan Pan-International	Others	Solar energy	Solar energy	Direct Measurement	0.00	4,995,057.21	17,986.302	2,650.377	Scope 2, Scope 3
Dongguan Pan-International	Others	Solar power surplus fed into grid can offset electricity usage	Solar energy	Direct Measurement	0.00	133,000.00	478.909	70.570	Scope 2, Scope 3
New Ocean, Jiangxi	Others	Purchase Green Electricity	Solar energy	Direct Measurement	33,360.32	436,000.00	1,569.958	231.342	Scope 2, Scope 3
Honghuasheng, Yantai	Equipment (unit) improvement:	Air compression station conducts waste heat recovery.	Natural gas	Evidence-based Estimation	0.00	3,970.81	3,970.826	436.789	Scope 2, Scope 3
Honghuasheng, Yantai	Equipment (unit) improvement:	Air compression station conducts waste heat recovery.	Thermal energy	Evidence-based Estimation	0.00	33,480.17	1,192.243	66.229	Scope 2, Scope 3
Pan-International, Taipei	Management Measures	Office Electricity Resource Management	Electricity	Evidence-based Estimation	0.00	6,035.14	21.731	2.861	Scope 2, Scope 3
Honghuasheng, Yantai	Replacement of Old with New	Replacement of Old with New for dust collector	Electricity	Evidence-based Estimation	5,721,609.60	1,696,800.00	6,109.871	900.322	Scope 2, Scope 3
Honghuasheng, Yantai	Equipment (unit) improvement:	Replace compressed air drying with vacuum exhaust air.	Electricity	Evidence-based Estimation	13,488.00	500,793.70	1,803.268	265.721	Scope 2, Scope 3
Honghuasheng, Yantai	Equipment (unit) improvement:	Combine fans and shut down.	Electricity	Evidence-based Estimation	4,496.00	72,737.00	261.913	38.594	Scope 2, Scope 3
Honghuasheng, Yantai	Replacement of Old with New	Replacement of old pumps	Electricity	Evidence-based Estimation	110,601.60	91,929.60	331.022	48.778	Scope 2, Scope 3
Honghuasheng, Yantai	Replacement of Old with New	Replacement of outer layer pre-processing	Electricity	Evidence-based Estimation	4,855,680.00	1,378,608.00	4,964.119	731.489	Scope 2, Scope 3
Honghuasheng, Yantai	Replacement of Old with New	Replacement of Old with New for packaging machines	Electricity	Evidence-based Estimation	6,852,695.30	418,387.20	1,506.537	221.996	Scope 2, Scope 3

The Group adopts an evidence-based, data-driven energy conservation and carbon reduction strategy. Combined with internal energy management systems and ESG governance framework, we gradually promote measures such as replacing high energy-consuming equipment, optimizing air conditioning and lighting systems, recovering process heat energy, and changing electricity usage behaviors. These efforts effectively improve energy efficiency and reduce carbon emission intensity.

In the future, we will continue to develop concrete and feasible carbon reduction action plans based on Greenhouse Gas inventory and risk assessment results. Combined with external partners' and stakeholders' expectations for net-zero goals, we will strengthen technology implementation and carbon reduction management mechanisms to advance toward the 2050 net-zero emission vision, demonstrating the Group's active commitment to environmental sustainability and climate resilience.

5.2 Water Resource Management

(GRI 303-3~303-5)



Water Withdrawal: ↓ Decreased by
107.453 km³ (compared base year)

Wuhu Plant Water saving rate:
18.73% vs. 2023 ↓

5.2.1 Water Resource Management Policy

The main water sources for the Group come from local water companies, with water sourced from reservoirs. Except for Honghuasheng, Yantai; Chaohu Ruichang; and CJ Electric Systems, Ordos, which are in water-stressed areas, water withdrawal at other facilities (Pan-International, Taipei; Dongguan Pan-International, New Ocean, Jiangxi; Anqing Ruiyu; Wuhu Hezhong; PIU; Taiwan-Czech Electronics; Huizhou Taiwan-Czech Electronics; Dongguan Guangshan; Yibin Pan-International) comes from non-water-stressed areas or non-protected areas, having relatively little impact on water sources.

The locations such as Pan-International, Taipei; PIU; Taiwan-Czech Electronics; Huizhou Taiwan-Czech Electronics; Dongguan Guangshan; Yibin Pan-International; and CJ Electric Systems, Ordos are small offices, marketing sites or warehouses. Their water consumption is extremely low, accounting for less than 1% of the total for the group, and they do not generate industrial wastewater.

Within the Group, Dongguan Pan-International, New Ocean, Jiangxi, CJ Electric Systems, Wuhu, Chaohu Ruichang, Anqing Ruiyu, and Wuhu Hezhong do not cause significant environmental impacts through water withdrawal and wastewater discharge. The production wastewater generated does not reach industrial wastewater treatment standards and is treated as domestic water, which is then directly discharged into the urban sewage network for collection and treatment at sewage treatment plants.

Honghuasheng, Yantai is the Group's only facility located in a water-stressed area and the only PCB manufacturing facility. Due to different manufacturing processes compared to other facilities, its water withdrawal is relatively higher, accounting for approximately 88.65% of the Group's total water withdrawal. Its industrial wastewater output includes PCB process water, which meets domestic wastewater discharge standards after primary chemical treatment and is ultimately discharged into the municipal sewage network. Regarding water conservation management, the facility continues to optimize its processes to improve water use efficiency and increase the rate of water recycling and reuse. Currently, some of the wastewater produced by the pure water system has been incorporated into the reuse system as a reusable water source, demonstrating positive results in sustainable water resource management implementation, with recycling and reuse benefits exceeding 10%. **Hotspot facilities regularly assess and evaluate water usage, analyze key water usage sectors and water use efficiency, identify opportunities for water conservation, process optimization, and water resource recycling and reuse, and continuously promote relevant improvement measures.**

For wastewater discharge management, each plant obtains permits from the government in accordance with local regulations and performs basic on-site treatment. Once the wastewater meets discharge standards, it is released into the government's sewage network for further treatment by government-commissioned agencies.

▼ Water Resource Management

- [Sustainability Committee]: The Chairperson serves as the Chairperson, the Deputy Chairperson is the President, and the committee includes members from regulatory units and related departmental groups to regularly discuss the implementation and planning of disclosure and reduction-related work, followed by annual reports to the Board of Directors.

- Each facility has also developed plans for emergency response teams during water shortages to address the challenges of water scarcity. In 2025, no production disruptions occurred at any facility due to water outages or shortages.
- Regarding mutual impacts on shared water resources, neither the Group nor its subsidiaries obtain water from environmental conservation areas. Only the Yantai facility is located in a water-stressed area, and this facility is committed to using recycled water and water-saving equipment. Moreover, the Group's water discharge does not exceed local industrial wastewater regulations. Therefore, there is no significant impact.

▼ Short-term strategies (targeting key subsidiaries (with production facilities + 100% operational control))



- Use water-efficient equipment: Replace with water-saving faucets and sensor faucets.



- Implement wastewater recycling and reuse for hotspot facilities.



- Water conservation slogans: Enhance water conservation education and promotional slogans at water usage points



- Comply with international and local environmental regulations to achieve zero violations.



- Drinking water equipment: Regular water quality testing

▼ Medium and long-term strategies



- Comply with international and local environmental regulations to achieve zero violations.



- Increase the recycling and reuse rate of wastewater in hotspot facilities

▼ 2025 Water Resource Management Policies for Each



Facility

Plant	Implementation of Water Resource Management Measures at Each Facility
Pan-International, Taipei (Office)	1. Promote water conservation.
Dongguan Pan-International	1. Through ISO 14001 Environmental Management System certification, establish prevention and improvement mechanisms, conserve water usage, and reduce environmental impacts from business operations. 2. Replace with water-saving faucets.

Plant	Implementation of Water Resource Management Measures at Each Facility
New Ocean, Jiangxi	<ol style="list-style-type: none"> 1. Through ISO 14001 Environmental Management System certification, establish prevention and improvement mechanisms, conserve water usage, and reduce environmental impacts from business operations. 2. Replace water-saving equipment: Replace faucets in front of the restaurant area with water-saving faucets, which is estimated to achieve approximately 75% water savings and effectively improve overall water usage efficiency.
Honghuasheng, Yantai	<ol style="list-style-type: none"> 1. Daily water usage from each production line is consolidated and reviewed in the production management meetings, allowing for stricter control of water consumption. 2. Water-saving production equipment is continually introduced and replaced. 3. Recycled water is wastewater from pure water production. Multiple workstations in the factory require pure water. During the pure water production process, wastewater with high ion concentration needs to be discharged (similar to water purifiers). This portion of wastewater was originally mixed with other wastewater for disposal. After improvements, the recycled water is used in workstations with lower water quality requirements. 4. Through ISO 14001 Environmental Management System certification, establish prevention and improvement mechanisms, conserve water usage, and reduce environmental impacts from business operations.
CJ Electric Systems, Wuhu	<ol style="list-style-type: none"> 1. Promote water conservation awareness. 2. Replace faucets with water-saving models whenever possible. 3. Compare water consumption monthly and promptly investigate and repair any abnormal situations.
Chaohu Ruichang, Anqing Ruiyu, Wuhu Hezhong	<ol style="list-style-type: none"> 1. Promote water conservation awareness. 2. Replace faucets with water-saving models whenever possible.
PIU, Taiwan-Czech Electronics, Huizhou Taiwan-Czech Electronics, Dongguan Guangshan, Yibin Pan-International, CJ Electric Systems, Ordos	<p>The location is excluded as it is a small office or warehouse, and the water resource management item is limited to promoting water conservation awareness.</p>

5.2.2 Water Resource Management Performance

2025 Overall Water Resource Data and Overview

Pan-International Group's total water withdrawal in 2025 was 1,726.917 thousand cubic meters (million liters), of which 89.27% or 1,541.615 thousand cubic meters came from water-stressed areas. The total freshwater withdrawal was 1,726.917 thousand cubic meters, total water discharge was 1,259.402 thousand cubic meters, and total water consumption was 345.383 thousand cubic meters.

▼ Water Withdrawal

(Unit: Thousand cubic meters (million liters))

(Water Withdrawal Intensity Unit: Thousand cubic meters/ Million Revenue)

Plant Location	Water Stress Situation	Water Source Category Note 1	Water Quality Indicator	Water withdrawal	Group Share	Water Withdrawal Intensity
Pan-International, Taipei	Low-Medium (Non-Water-Stressed)	Third-party water	Pure water	1.478	0.09%	0.0002
Dongguan Pan-International	Low (Non-Water-Stressed)	Third-party water	Pure water	79.610	4.61%	0.0501
New Ocean, Jiangxi	Low (Non-Water-Stressed)	Third-party water	Pure water	48.990	2.84%	0.0432
Honghuasheng, Yantai	Extremely High (Water Stress)	Third-party water	Pure water	1,530.987	88.65%	0.3800
CJ Electric Systems, Wuhu	Low-Medium (Non-Water-Stressed)	Third-party water	Pure water	37.001	2.14%	0.0112*
PIU (USA)	Low (Non-Water-Stressed)	Third-party water	Pure water	0.082	0.00%	0.0002
Chaohu Ruichang	Extremely High (Water Stress)	Third-party water	Pure water	6.768	0.39%	NA*
Anqing Ruiyu	Low-Medium (Non-Water-Stressed)	Third-party water	Pure water	13.268	0.77%	NA*
Wuhu Hezhong	Low-Medium (Non-Water-Stressed)	Third-party water	Pure water	3.436	0.20%	NA*
Yibin Pan-International	Low (Non-Water-Stressed)	Third-party water	Pure water	1.283	0.07%	0.0025
Taiwan-Czech Electronics	Low-Medium (Non-Water-Stressed)	Third-party water	Pure water	0.044	0.00%	0.0001
Huizhou Taiwan-Czech Electronics	Low (Non-Water-Stressed)	Third-party water	Pure water	0.021	0.00%	0.0001
Dongguan Guangshan	Low (Non-Water-Stressed)	Third-party water	Pure water	0.090	0.01%	0.0006
CJ Electric Systems, Ordos	Extremely High (Water Stress)	Third-party water	Pure water	3.861	0.22%	NA
Total				1,726.917	100%	0.0824
Total amount of Water-Stressed Areas (Thousand cubic meters)		1,541.615	Total Water Withdrawal in Non-Water-Stressed Areas (Thousand cubic meters)		185.302	

Note 1: The water source category for all plant locations is exclusively third-party water (tap water), and does not include other water sources such as surface water, groundwater, seawater, or produced water.

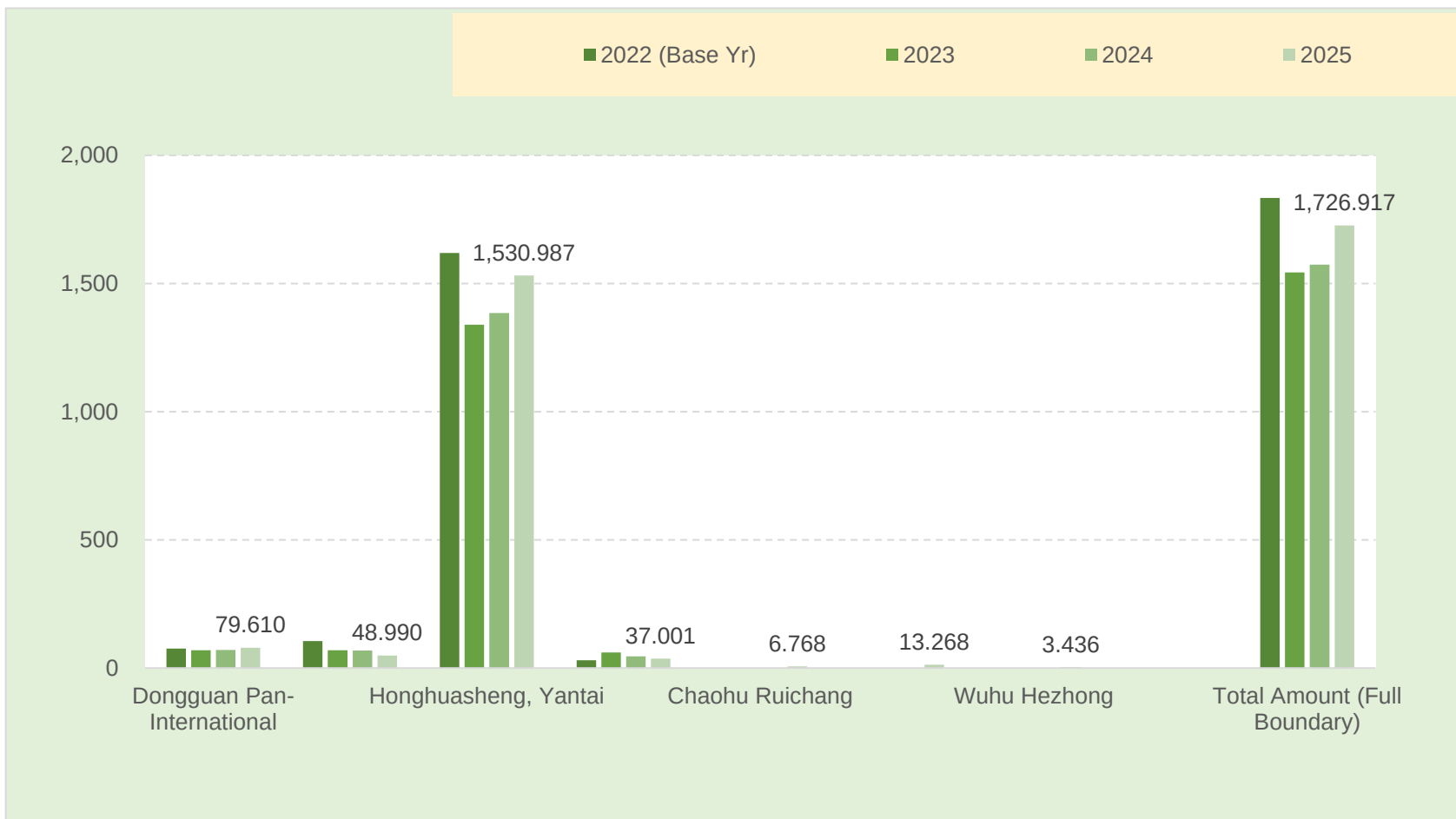
Note 2: The water withdrawal for CJ Electric Systems, CJ Electric Systems includes both CJ Electric Systems (plant area) and Dechang (warehouse).

Note 3: PIU and CJ Electric Systems, Ordos are in a shared leased facility, and water usage is calculated based on the local per person daily water consumption rate.

Note 4*: The revenues of Chaohu Ruichang, Anqing Ruiyu, Wuhu Hezhong, and CJ Electric Systems, Ordos are included in CJ Electric Systems, Wuhu, so the density is collectively calculated in CJ Electric Systems, Wuhu.

▼ **Three Year - Water Withdrawal: Manufacturing Plants and Full Boundary (Unit: Thousand cubic meters (million liters))**

Plant Location	Year			
	2022 (Base Year)	2023	2024	2025
Dongguan Pan-International	75.938	69.948	71.219	79.610
New Ocean, Jiangxi	105.410	69.740	68.650	48.990
Honghuasheng, Yantai	1,619.681	1,339.637	1,385.396	1,530.987
CJ Electric Systems, Wuhu	31.200	60.583	45.527	37.001
Chaohu Ruichang	NA	NA	NA	6.768
Anqing Ruiyu	NA	NA	NA	13.268
Wuhu Hezhong	NA	NA	NA	3.436
Total Amount (Full Boundary*) Note 2	1,834.352	1,543.391	1,574.252	1,726.917



Note 1: Full boundary refers to the Boundary of the report for the current year.

Note 2: Compared to the years 2022-2024, the full boundary in 2025 includes new additions of Chaohu Plant Ruichang, Anqing Ruiyu, Wuhu Hezhong, Huizhou Taiwan-Czech Electronics, Dongguan Guangshan, Yibin Pan-International, and CJ Electric Systems, Ordos.

▼ **Water Discharge / Water Consumption (Unit: Thousand cubic meters (million liters)): Water-Stressed Areas 89.27%, Non-Water-Stressed Areas 10.73%**

Plant Location	Water Discharge Category	Water-Stressed Area	Water Quality Indicator	Water discharge	Water consumption	Group Share
Pan-International, Taipei	Third-party water	No	Freshwater	1.182	0.296	0.09%
Dongguan Pan-International	Third-party water	No	Freshwater	63.688	15.922	4.61%
New Ocean, Jiangxi	Third-party water	No	Freshwater	39.192	9.798	2.84%
Honghuasheng, Yantai	Third-party water	Yes	Freshwater	1,224.789	306.197	88.65%
CJ Electric Systems, Wuhu	Third-party water	No	Freshwater	29.601	7.400	2.14%
PIU (USA)	Third-party water	No	Freshwater	0.066	0.016	0.00%
Chaohu Ruichang	Third-party water	Yes	Freshwater	5.414	1.354	0.39%
Anqing Ruiyu	Third-party water	No	Freshwater	10.614	2.654	0.77%
Wuhu Hezhong	Third-party water	No	Freshwater	2.749	0.687	0.20%
Yibin Pan-International	Third-party water	No	Freshwater	1.026	0.257	0.07%
Taiwan-Czech Electronics	Third-party water	No	Freshwater	0.035	0.009	0.00%
Huizhou Taiwan-Czech Electronics	Third-party water	No	Freshwater	0.016	0.004	0.00%
Dongguan Guangshan	Third-party water	No	Freshwater	0.072	0.018	0.01%
CJ Electric Systems, Ordos	Third-party water	Yes	Freshwater	3.088	0.772	0.22%
Total				1,381.534	345.383	100%

Note: Estimation method: As the Group is not a major water consumer and does not have flow meters installed to measure drainage, the estimated wastewater (discharge) volume is approximately 80% of water withdrawal, and water consumption is equivalent to 20% of water withdrawal.

● Water Resource Data and Comparison Analysis for Recent Years and Base Year

- Increased by 9.7% compared to 2024.
 - The total water withdrawal in 2025 increased by approximately 9.7% compared to 2024 (1,574.252 thousand cubic meters), mainly due to two major factors:
 - Core Location Process Differences: The key subsidiary, Honghuasheng Yantai, which accounts for 88.65% of the Group's total water withdrawal, will see an increase in its water withdrawal in 2025 due to the rise in production of high-end boards and the specific process requirements.
 - Boundary expansion of the report: The 2025 Sustainability Report expanded its disclosure boundary to include water resource data from 8 additional subsidiaries.
 - Note: Apart from the increase in production of high-end boards at Honghuasheng, Yantai due to process requirements, the overall water withdrawal at most of the Group's other plants showed a declining trend.
- Compared to the 2022 base year, with a significant savings of 5.86%:
 - Compared to the 2022 base year (1,834.352 thousand cubic meters), the total water withdrawal in 2025 decreased by 107.453 thousand cubic meters, achieving an overall water savings rate of 5.86%. This outstanding achievement is mainly attributed to the largest water usage location, Honghuasheng Yantai, continuously promoting the plant's wastewater recycling and reuse projects, thereby substantially reducing the extraction of natural water resources.
 - All Plants have replaced water-saving equipment, and some Plants monitor and eliminate water usage anomalies with significant effectiveness.
- Highlights of Water Conservation Performance and Management Actions at Locations

Various factories are actively promoting water-saving measures. The description for locations with significant water-saving performance in 2025 is as follows:



- Pan-International, Taipei (achieved a water savings rate of 51.23%): Compared to the high baseline water usage in 2024 due to the transitional period of office relocation (simultaneous operation of new and old locations and plant cleaning), operations returned to normal in 2025, resulting in significant water savings effects.
- New Ocean, Jiangxi (water-saving rate reached 28.64%): Conducted a comprehensive review and proactively replaced high-efficiency water-saving equipment, significantly improving water usage efficiency.
- CJ Electric Systems, Wuhu (Water saving rate: 18.73%): Implement refined water management, strengthen the monthly water consumption data monitoring mechanism, and promptly investigate and repair any abnormal water usage situations.

● Sustainable Governance and Response to SDG 6

The Group places high importance on water resource risk and management, incorporating water resource management into its sustainable development strategy and using ESG performance indicators as the basis for implementation, effectively corresponding to the United Nations Sustainable Development Goal SDG 6 (Clean Water and Sanitation).

Through the supervision and management of the Sustainable Development Committee, proactive installation of water-saving facilities at various plants, promotion of industrial wastewater recycling and reuse, and improvement of the water resource emergency response mechanism, the efficient use and protection of water resources are implemented. All subsidiaries of the Group operate in full compliance with local environmental regulations, and in 2025, there were no major water shortage incidents or water discharge anomalies, demonstrating the Group's firm commitment to implementing sustainable water resource management.

▼ Water Resource Management Performance Indicators (2025)

Performance Indicator	2025 Performance	Achievement Rate	Corresponding SDG
Total loss (including compensation or penalties) due to water resource regulations	0	100%	SDG 6.3: Improve water quality and ensure compliance with legal requirements
Major wastewater leakage incidents	None occurred; all wastewater treatment processes complied with legal standards	100%	SDG 6.3: Enhance wastewater treatment and environmental protection
Water withdrawal reduction target (base year 2022, -1% per year)	Increased by 9.7% compared to 2024, but still achieved a water saving of approximately 5.86% compared to 2022.	100%	SDG 6.4: Improve water-use efficiency and ensure sustainable withdrawal

5.3 Waste Management



Corresponding GRI Indicators: GRI 306-3, GRI 306-4, GRI 306-5

Impact Description		1. Causes environmental pollution 2. Penalties from authorities due to violations of regulations	
Location		For the Group:	
Policies or Commitments Established or Followed	Internal Regulations	V	
	Government Regulations	V	
Responsible Units		Sustainability Committee/ Chairman / Management Committee/ Related Responsible Units of Each Plant	
Management Actions			<ul style="list-style-type: none"> Sustainability Committee: Regularly discusses the implementation and planning of waste and water resource-related work. Set targets for environmental issues and regularly review for improvements.
Process for Monitoring the Effectiveness of Actions		<ul style="list-style-type: none"> Sustainability Committee: For key subsidiaries (with manufacturing locations), the Group established a management organization chaired by the Chairperson, who serves as the Chairperson. The Committee meets regularly to discuss waste treatment issues and report on and review the discussions. The Board of Directors supervises. Through the Sustainability Committee, develop waste treatment guidelines and goals, and coordinate and integrate waste treatment strategies and plans of each subsidiary. Regular meetings are held to continuously confirm and review goal achievement rates, challenging new energy-saving milestones. 	

Management Performance Indicators				
Indicators	Short-term Goal (2025)	Short-term Goal (Annual) (2022 base year)	Mid-term Goal (2022-2027)	Long-term Goal (2022-2050)
Waste reduction	100% achieved for Non-hazardous waste Non-hazardous industrial waste decreased from 5,665.655 metric tons in 2022 to 3,673.943 metric tons in 2025, a significant reduction of 35.15%. Hazardous waste reduction was not achieved due to increased capacity from boundary expansion; efforts are needed.	1% annual reduction (base year 2022)	5 year reduction goal: –5%	5 year reduction goal: – 5%
Hazardous Waste Recycling Rate	100% achieved From 13.45% (2023) → 87.97% (2025)	Increase by 1% annually	Increase by 5% in five years	Key sites increased to 50%
Total recycling rate	100% achieved From 44.3% (2023) → 84.57% (2025)	Increase by 1% annually	Increase by 5% in five years	Key sites increased to 50%
Zero Violations	100% achieved	Comply with international and local environmental regulations to achieve zero violations.		
<div><div>*</div><div>This year's organizational boundary includes locations: Pan-International, Taipei, Dongguan Pan-International, New Ocean, Jiangxi, Honghuasheng, Yantai, CJ Electric Systems, Wuhu, PIU (USA), and 8 new locations added in 2025: Chaohu Ruichang, Anqing Ruiyu, Wuhu Hezhong, Yibin Pan-International, Taiwan-Czech Electronics, Huizhou Taiwan-Czech Electronics, Dongguan Guangshan, CJ Electric Systems, Ordos</div><div>*</div><div>Total recycling rate includes the recycling rates of both hazardous and non-hazardous waste, excluding incineration treatment (including energy recovery) items.</div><div>*</div><div>Except for Honghuasheng, Yantai (due to its PCB industry being different from other assembly plants), the majority of waste from other subsidiaries of the Group consists of domestic waste generated by employees and general non-hazardous industrial solid waste, with only minimal amounts of hazardous waste. Therefore, no specific reduction plans have been established.</div></div>				

5.3.1 Waste Impact Assessment

(GRI 306-2)

The Group refers to domestic and international environmental impact reports, considering each stage of product life cycle (raw material extraction, production and manufacturing, sales and distribution, product use and waste disposal stages) to identify waste generated from organizational internal and value chain upstream and downstream operational activities. The potential impacts of waste on the environment and society are assessed, allowing the Group to create a value chain and waste impact context diagram.

Except for the plant at Honghuasheng, Yantai, which has a different industry (PCB plant) from other plants, the waste generated by other plants of the Group **includes hazardous and non-hazardous industrial waste**, mainly domestic waste generated by employees, industrial solid waste, and very small amounts of hazardous waste. Honghuasheng, Yantai plant generates more hazardous waste due to its industry (PCB plant). We develop corresponding management measures to address the potential impacts of various types of waste. Waste management units regularly supervise and assess the implementation effectiveness to mitigate or avoid negative impacts on both the internal organization or the external environment. Honghuasheng, Yantai's total hazardous waste, non-hazardous waste, and total waste account for 99.867%, 78.936%, and 91.45% of the Group Share, respectively. [The plant regularly conducts waste inventory and audits to review waste types, generation amounts, and disposal flows, identifying opportunities for waste reduction, classification, and resource utilization.](#)

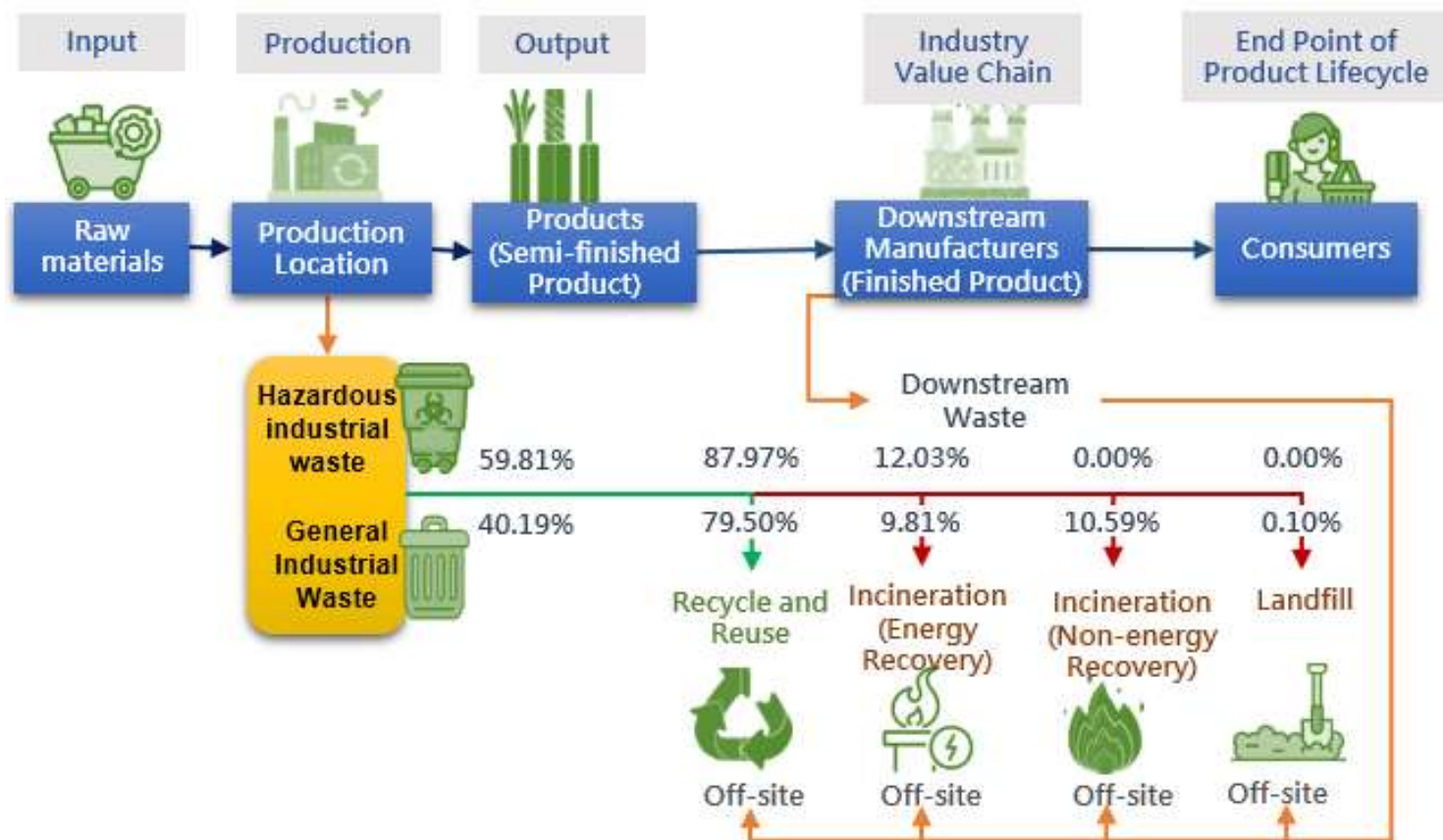
▼ Pan-International Value Chain and Potential Impact Context

Location	Value Chain Stage	Activities	Waste Types	Waste Categories	Disposal Methods	Disposal Units	Potential Impacts
Pan-International, Taipei, Taiwan-Czech Electronics	Own Operations	Daily office waste/others	Domestic waste generated by employees	Non-hazardous waste	Incineration (with energy recovery)	External third party	Improper treatment causes environmental pollution
Dongguan Pan-International	Own Operations	Daily office waste/Product scrapping or disposal	Domestic waste generated by employees	Non-hazardous waste	Incineration (with energy recovery)	External third party	Improper treatment causes environmental pollution
	Own Operations	Raw material supply/Product processing/Product packaging/Product scrapping or disposal/Others	Industrial solid waste	Non-hazardous waste	Recycling	External third party	Improper treatment causes environmental pollution

Location	Value Chain Stage	Activities	Waste Types	Waste Categories	Disposal Methods	Disposal Units	Potential Impacts
	Own Operations	Raw material supply/Product processing/Product packaging/Product scrapping or disposal/Others	Hazardous waste	Hazardous waste	Recycling (Cement Kiln)	External third party	Improper treatment 1. causes environmental pollution 2. penalties from authorities due to violations of regulations
New Ocean, Jiangxi	Own Operations	Daily office waste/Product scrapping or disposal	Domestic waste generated by employees	Non-hazardous waste	Incineration (with energy recovery)	External third party	Improper treatment causes environmental pollution
	Own Operations	Raw material supply/Product processing/Product packaging/Product scrapping or disposal/Others	Industrial solid waste	Non-hazardous waste	Recycling	External third party	Improper treatment causes environmental pollution
	Own Operations	Raw material supply/Product processing/Product packaging/Product scrapping or disposal/Others	Hazardous waste	Hazardous waste	Incineration (with energy recovery)/ Recycling/ Preparation for Reuse	External third party	Improper treatment 1. causes environmental pollution 2. penalties from authorities due to violations of regulations
Honghuasheng, Yantai	Own Operations	Daily office waste/Product scrapping or disposal	Domestic waste generated by employees	Non-hazardous waste	Incineration (with energy recovery)/	External third party	Improper treatment causes environmental pollution
	Own Operations	Raw material supply/Product processing/Product packaging/Product scrapping or disposal/Others	Industrial solid waste	Non-hazardous waste	Incineration (with energy recovery)/ Recycling	External third party	Improper treatment causes environmental pollution
	Own Operations	Raw material supply/Product processing/Product packaging/Product scrapping or disposal/Others	Hazardous waste	Hazardous waste	Incineration (with energy recovery)/ Recycling	External third party	Improper treatment 1. causes environmental pollution 2. penalties from authorities due to violations of regulations

Location	Value Chain Stage	Activities	Waste Types	Waste Categories	Disposal Methods	Disposal Units	Potential Impacts
CJ Electric Systems, Wuhu, Chaohu Ruichang	Own Operations	Daily office waste/Product scrapping or disposal	Domestic waste generated by employees	Non-hazardous waste	Incineration (without energy recovery)	External third party	Improper treatment causes environmental pollution
	Own Operations	Raw material supply/Product processing/Product packaging/Product scrapping or disposal/Others	Industrial solid waste	Non-hazardous waste	Other recycling	External third party	Improper treatment causes environmental pollution
PIU (USA), CJ Electric Systems, Ordos	Own Operations	Daily office/warehouse waste/others	Domestic waste generated by employees	Non-hazardous waste	Landfill	External third party	Improper treatment causes environmental pollution
Anqing Ruiyu, Huizhou Taiwan-Czech Electronics, Dongguan Guangshan	Own Operations	Daily office waste/others	Domestic waste generated by employees	Non-hazardous waste	Incineration (with energy recovery)	External third party	Improper treatment causes environmental pollution
Wuhu Hezhong, Yibin Pan-International	Own Operations	Simple assembly/warehouse daily waste/others	Domestic waste generated by employees	Non-hazardous waste	Incineration (without energy recovery)	External third party	Improper treatment causes environmental pollution

▼ Pan-International Group - Value Chain and Waste Impact Diagram



5.3.2 Waste Management Policy

Waste Management Units

Each subsidiary of the Group has established responsible units for controlling, disposing of, and reporting industrial waste generated from company operations, and **reports industrial waste in accordance with local regulations**. Waste disposal methods are all implemented according to local regulations.

Pan-International Group's Waste Management Responsible Units:

[Sustainability Committee]: Chaired by the Chairman of the Board, the committee regularly discusses the implementation and planning of disclosure and reduction initiatives, and subsequently reports and reviews with the Board of Directors annually. Each subsidiary has its own management responsible unit.

Waste Disposal Method: The Group's Waste Is all Outsourced for Treatment

The Group records waste types, quantities, and tracks waste flow through **online forms, management systems, evidence-based estimates, and other methods**, and compiles annual waste generation using **actual measurement and estimation methods**. All waste is entrusted to qualified external waste treatment operators for transportation and disposal. After receiving the three-part transport form issued by the external transport operator, the quantity (weight) measured on-site must be verified for consistency. Regular audits are conducted to ensure that the transport and treatment operators dispose of industrial waste in accordance with the Group's and local regulatory requirements.

Due to the industry characteristics, most of the Group's subsidiaries are in the assembly industry, so waste classification is relatively simple, with almost all being non-hazardous waste. Except for Honghuasheng, Yantai, which has a different industry (PCB plant) from other plants, other subsidiaries mainly have employee domestic waste as the largest category. Due to the technical or regulatory requirements, the plant cannot dispose of waste on-site. Therefore, all waste—whether hazardous industrial waste or non-hazardous waste—is taken off-site and handled by qualified operators approved by the relevant authorities. Additionally, although Honghuasheng, Yantai generates a larger amount of hazardous waste, all waste from the entire plant (both hazardous and non-hazardous) is managed using full recycling and reuse methods.

To achieve sustainable resource utilization and ensure proper waste treatment, each plant selects legally qualified waste disposal contractors in accordance with internal waste management procedure regulations. Also, select contractors who can use "recycling and reuse" and "incineration (with energy recovery)" to replace "incineration (without energy recovery) and landfill" to ensure maximum resource utilization.

It is recommended to use recyclable and reusable materials in the plant to replace disposable materials. For example, using recyclable and reusable materials and packaging such as dry film cores, wood pulp boards, PE films, copper foils, aluminum sheets, film-coated aluminum sheets, aluminum alloys, and other recyclable and reusable packaging materials. This approach aims to improve the recycling and reuse rates of materials and packaging. Regarding hazardous waste treatment, the types and quantities of hazardous waste substances are first reported to the environmental protection platform in compliance with regulations. Qualified contractors then come to the plant regularly to handle the treatment.

Our goal is to achieve a circular economy, transforming waste into valuable resources while reducing negative impacts on the environment. We believe that through cross-industry cooperation and global collaboration, we can achieve true waste management and sustainable development.

▼ 2025 Waste Management Policies for Each Plant



Plant	Waste Management Measures Implemented at Each Plant
Pan-International, Taipei (Office)	<ul style="list-style-type: none"> Promote paperless office operations Meals are provided without disposable utensils (employees must bring their own reusable utensils)
Dongguan Pan-International	<ul style="list-style-type: none"> Hazardous waste recycling and reuse: Report the quantity and types of hazardous waste on the environmental protection platform, where third-party contractors approved by the Environmental Protection Bureau uniformly transport the waste to recycling points approved by the Mainland China Environmental Protection Bureau for processing. Promote paperless office operations
New Ocean, Jiangxi	<ul style="list-style-type: none"> Reduce packaging, recycle packaging, reuse pallets, and digitize documents Hazardous waste recycling and reuse: Report the quantity and types of hazardous waste on the environmental protection platform, where third-party contractors approved by the Environmental Protection Bureau uniformly transport the waste to recycling points approved by the Mainland China Environmental Protection Bureau for processing.
Honghuasheng, Yantai	<ul style="list-style-type: none"> Coordinate the selection of qualified waste disposal vendors with legal credentials. Also, select contractors who can use "recycling and reuse" and "incineration (with energy recovery)" to replace "incineration (without energy recovery) and landfill" to ensure maximum resource utilization. It is recommended to use recyclable and reusable materials in the plant to replace disposable materials. For example, using recyclable and reusable materials and packaging such as dry film cores, wood pulp boards, PE films, copper foils, aluminum sheets, film-coated aluminum sheets, aluminum alloys, and other recyclable and reusable packaging materials. This approach aims to improve the recycling and reuse rates of materials and packaging. Regarding hazardous waste treatment, the types and quantities of hazardous waste substances are first reported to the environmental protection platform in compliance with regulations. Qualified contractors then come to the plant regularly to handle the treatment. Select vendors who can maximize "recycling and reuse" to ensure optimal resource utilization.
CJ Electric Systems, Wuhu, Chaohu Ruichang, Anqing Ruiyu, Wuhu Hezhong	<ul style="list-style-type: none"> Hazardous waste recycling and reuse: Report the quantity and types of hazardous waste on the environmental protection platform, where third-party contractors approved by the Environmental Protection Bureau uniformly transport the waste to recycling points approved by the Mainland China Environmental Protection Bureau for processing. Use recyclable and reusable materials and packaging: dry film cores, wood pulp boards, PE films, copper foils, aluminum sheets, laminated aluminum sheets, aluminum alloys, and recyclable packaging materials Promotion of paperless office operations.
PIU (USA), Yibin Pan-International, CJ Electric Systems, Ordos, Taiwan-Czech Electronics, Huizhou Taiwan-Czech Electronics (Office/Warehouse)	For an office with only 7 people, waste management initiatives have no substantial significance.

Waste Management Responsible Units

Location	Waste Classification	Waste Storage	Waste Data Collection	Waste Reporting	Waste Treatment - Outsourced Treatment
Pan-International, Taipei (Office)	Administration Department / Materials Division	Administration Department / Materials Division	Administration Department / Materials Division	None	Administration Department / Materials Division
Dongguan Pan-International	Management Department	Management Department	Management Department	Management Department	Management Department
New Ocean, Jiangxi	Engineering Department	Engineering Department	Engineering Department	Engineering Department	Engineering Department
Honghuasheng, Yantai	Waste Treatment Unit / General Affairs / Environmental Engineering	Waste Treatment Unit / General Affairs / Environmental Engineering	Waste Treatment Unit / General Affairs / Environmental Engineering	Waste Treatment Unit / General Affairs / Environmental Engineering	Waste Treatment Unit / General Affairs / Environmental Engineering
CJ Electric Systems, Wuhu, Chaohu Ruichang, Anqing Ruiyu, Wuhu Hezhong	Management Department	Management Department	Management Department	Management Department	Management Department
PIU (USA), Yibin Pan-International, CJ Electric Systems, Ordos, Taiwan-Czech Electronics, Huizhou Taiwan-Czech Electronics (Office/Warehouse)	Finance	Finance	Finance	None	Finance

▼ Waste Disposal Method

Location	Waste Recording Method	Waste Generation Measurement Method
Pan-International, Taipei (Office)	Third-party issued receipts	Load count analysis method; Weight volume method
Dongguan Pan-International	Online forms; Management system; Handwritten weighing forms	Load count analysis method; Weight volume method; Material balance method; Evidence-based estimation
New Ocean, Jiangxi	Online forms; Management system; Domestic waste estimation	Load count analysis method; Weight volume method; Material balance method; Evidence-based estimation
Honghuasheng, Yantai	Online forms; Management system; Domestic waste estimation	Load count analysis method; Weight volume method; Material balance method; Evidence-based estimation
CJ Electric Systems, Wuhu, Chaohu Ruichang, Anqing Ruiyu, Wuhu Hezhong	Domestic waste estimation	Evidence-based estimation
PIU (USA), Yibin Pan-International, CJ Electric Systems, Ordos, Taiwan-Czech Electronics, Huizhou Taiwan-Czech Electronics (Office/Warehouse)	None	Evidence-based estimation

5.3.3 Waste Transportation, Disposal, and Reduction/Recycling Performance

(GRI 306-3~306-5)

Overview of Waste Generation and Disposal Methods

In 2025, Pan-International Group (with 8 new subsidiaries added to the boundary this year) generated a total waste volume of 9,140.984 metric tons.

Emission intensity is 0.436 metric tons per NT\$ million. Due to the Group's main hotspot plant, Honghuasheng, Yantai, being a Printed Circuit Board (PCB) manufacturing plant, which involves chemical processes such as etching and copper plating, its industrial nature differs from other plants. Therefore, it generates more hazardous and non-hazardous industrial waste. The waste generated by it accounts for about 80-90% of the total waste of the Group (in 2025, the total waste from Honghuasheng, Yantai accounts for 91.45% of the Group's total waste).

2025 Waste Structure Analysis (Total generation amount 9,140.984 metric tons. The total emission intensity is 0.436 metric tons per NT\$ million.) :

- Amount of hazardous waste generated: For the Group, a total of 5,467.041 metric tons (accounting for 59.81%). Emission intensity is 0.261 metric tons per NT\$ million. Among them, Honghuasheng, Yantai accounted for 5,459.780 metric tons, constituting a high proportion of 99.87% of the Group's hazardous waste.
- Amount of non-hazardous industrial waste generated: For the Group, a total of 3,673.943 metric tons (accounting for 40.19%). Emission intensity is 0.175 metric tons per NT\$ million. Among them, Honghuasheng, Yantai accounted for 2,900.052 metric tons, constituting 78.94% of the Group's non-hazardous waste.

Note: In 2025, due to the overall increase in the Group's production capacity and the expansion of the reporting boundary (including the addition of 8 subsidiaries), hazardous industrial waste increased by 896.895 metric tons compared to 2024, non-hazardous industrial waste increased by 183.704 metric tons, totaling an increase of 1,080.599 metric tons.

Despite the increase in the total amount of waste, the group is still fully committed to promoting resource recycling and waste-to-resource strategy, achieving record high recycling rates for both hazardous and non-hazardous waste. of which:

- The hazardous industrial waste recycling rate dramatically increased from 13.42% in 2023 and 86.71% in 2024 to 87.97% in 2025.
- Non-hazardous Waste Recycling Rate: From 63.45% in 2023 and 73.61% in 2024, steadily increased to 79.50% in 2025.
- Group's total waste recycling rate: From the baseline year 2022 (44.35%), 2023 (36.50%), and 2024 (81.04%), it has strongly surged to 84.57% in 2025, greatly surpassing the group's short-term and medium-to-long-term goals set for this year, showcasing excellent resource recycling transition achievements.

Hazardous Waste Recycling Rate
reached an all-time high, increasing
to 87.97%

Non-hazardous Waste Recycling
Rate Significantly Increased to
79.50 %

Total Recycling Rate Significantly
Increased from Base Year 44.35% to
84.57%

★ Highlights:



- **Honghuasheng, Yantai achieved UL 2799 Zero Waste to Landfill Platinum certification (highest level) in 2025, demonstrating achievements in zero waste to landfill management.**
- **New Ocean, Jiangxi continues to maintain the GRS- Global Recycled Standard certificate, enhancing its recycled material management capabilities.**
- **The Group's total waste recycling rate reached 84.57%, continuously strengthening resource recycling utilization and implementing circular economy and sustainable development.**

Waste reduction and resource recycling

The breakthrough improvement in recycling efficiency this year mainly stemmed from the group's proactive promotion of waste resource transformation:

- Hazardous waste resource utilization (technical transformation model): For the core hazardous waste—copper-containing waste, starting from 2024, it has been entirely transitioned from traditional incineration disposal to a "comprehensive utilization model for hazardous waste." A legally qualified resource recycling facility is commissioned to carry out high-value extraction through technical transformation, significantly enhancing the recycling efficiency of metallic copper.
- Continuous promotion of source waste reduction measures, including:
 - Alternative Materials: Prioritize the use of recyclable materials to replace disposable materials.
 - Green Packaging: Promote Reduce packaging and recycle packaging
 - Vehicle Circulation: Pallet Reuse
 - Paperless office: document digitization and paperless management
 - Priority circulation: Prioritize recycling and reuse methods.

Through the above measures, the final disposal volume is effectively reduced, resource recycling utilization efficiency is improved, and the circular economy and environmental sustainability are continuously implemented. [In addition, we provide waste reduction training to raise employees' awareness of waste prevention and strengthen their understanding of the benefits of waste reduction.](#)

Hazardous Waste Resource Recycling - Recycling of Copper-Containing Sludge, Copper-Containing Dust, and Copper-Containing Board Scrap

For the Group (Honghuasheng, Yantai), the largest amount of hazardous waste is generated from valuable waste **such as copper-containing sludge, copper-containing dust, and copper-containing board scrap**, all of which are entrusted to legally qualified resource recycling facilities for recycling and processing. Through processes such as sorting, electro-selection, melting, and metal extraction, valuable metals like copper are recovered and reinvested into resource recycling, reducing natural resource consumption and the final disposal volume of waste, thereby practicing the circular economy.

The main copper-containing waste recycle and reuse process:

- Copper-Containing Sludge: Copper-containing sludge → Impurity removal → Drying → Compounding → Melting → Metal extraction → Copper metal recovery
- Copper-Containing Dust: Copper-containing dust → Collection → Recycling treatment → Metal resource recovery
- Copper-Containing Scrap/Frames: Board scraps/frames → Sorting → Electrostatic separation → Copper powder recovery → Smelting recovery → Recycled copper raw materials

Total waste and intensity performance

▼ 2025 - Industrial Waste Generation (Unit: Tonnes), Intensity (Unit: Tonnes/Million Revenue)

Waste Types	Hazardous industrial waste (tonnes)				Harmfulness Intensity	Non-hazardous industrial waste (tonnes)				Non-Harmfulness Intensity	Total amount of waste (tonnes)				Total Intensity
Location	Total recycling amount	Non-total recycling amount	Total amount	Group Share %		Total recycling amount	Non-total recycling amount	Total amount	Group Share %		Total recycling amount	Non-total recycling amount	Total amount	Group Share %	
Pan-International, Taipei	0.000	0.000	0.000	0.00%	0.000	0.000	20.925	20.925	0.57%	0.002	0.000	20.925	20.925	0.23%	0.002
Dongguan Pan-International	4.600	0.000	4.600	0.08%	0.003	114.630	50.730	165.360	4.50%	0.104	119.230	50.730	169.960	1.86%	0.107
New Ocean, Jiangxi	1.079	1.582	2.661	0.05%	0.002	39.153	25.791	64.944	1.77%	0.057	40.232	27.373	67.605	0.74%	0.060
Honghuasheng, Yantai	4803.820	655.960	5459.780	99.87%	1.355	2675.172	224.880	2900.052	78.94%	0.720	7478.992	880.840	8359.832	91.45%	2.075
CJ Electric Systems, Wuhu	0.000	0.000	0.000	0.00%	0.000	69.443	275.350	344.793	9.38%	0.157	69.443	275.350	344.793	3.77%	0.157
PIU (USA)	0.000	0.000	0.000	0.00%	0.000	0.000	1.302	1.302	0.04%	0.004	0.000	1.302	1.302	0.01%	0.004
Chaohu Ruichang	0.000	0.000	0.000	0.00%	NA*	22.504	96.158	118.663	3.23%	NA*	22.504	96.158	118.663	1.30%	NA*
Anqing Ruiyu	0.000	0.000	0.000	0.00%	NA*	0.000	36.082	36.082	0.98%	NA*	0.000	36.082	36.082	0.39%	NA*
Wuhu Hezhong	0.000	0.000	0.000	0.00%	NA*	0.000	15.907	15.907	0.43%	NA*	0.000	15.907	15.907	0.17%	NA*
Yibin Pan-International	0.000	0.000	0.000	0.00%	0.000	0.000	1.540	1.540	0.04%	0.003	0.000	1.540	1.540	0.02%	0.003
Taiwan-Czech Electronics	0.000	0.000	0.000	0.00%	0.000	0.000	0.967	0.967	0.03%	0.001	0.000	0.967	0.967	0.01%	0.001
Huizhou Taiwan-Czech Electronics	0.000	0.000	0.000	0.00%	0.000	0.000	1.007	1.007	0.03%	0.005	0.000	1.007	1.007	0.01%	0.005
Dongguan Guangshan	0.000	0.000	0.000	0.00%	0.000	0.000	0.000	0.000	0.00%	0.000	0.000	0.000	0.000	0.00%	0.000
CJ Electric Systems, Ordos	0.000	0.000	0.000	0.00%	NA*	0.000	2.401	2.401	0.07%	NA*	0.000	2.401	2.401	0.03%	NA*
Total	4809.499	657.542	5467.041	100%	0.261	2920.903	753.040	3673.943	100%	0.175	7730.402	1410.582	9140.984	100%	0.436

Note: The classification of hazardous and non-hazardous waste is based on local regulations at each location.

Note: The statistics for CJ Electric Systems, Wuhu include Ruichang (factory area) and Dechang (warehouse).

Note: The non-hazardous waste (household waste) from Pan-International, Taipei; PIU; CJ Electric Systems, Wuhu; Yibin Pan-International; Chaohu Ruichang; Anqing Ruiyu; Wuhu Hezhong; CJ Electric Systems, Ordos; Taiwan-Czech Electronics; and Huizhou Taiwan-Czech Electronics is calculated based on the local per person daily waste generation rate. Note*: The revenues of Chaohu Ruichang, Anqing Ruiyu, Wuhu Hezhong, and CJ Electric Systems, Ordos are included in CJ Electric Systems, Wuhu, so the density is collectively calculated in CJ Electric Systems, Wuhu.

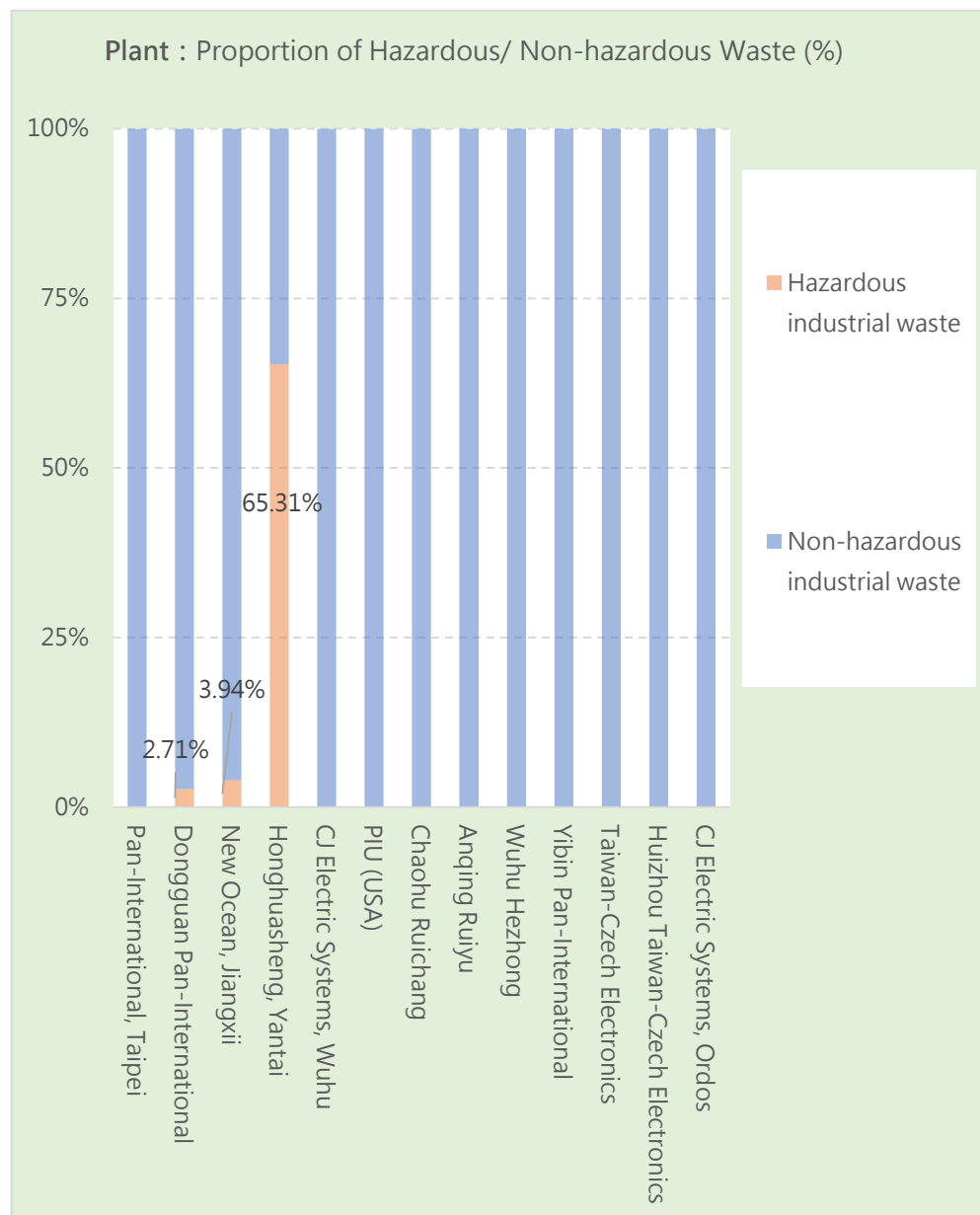
Note: Dongguan Guangshan is set up within Dongguan Pan-International, and the waste is uniformly handled by Dongguan Pan-International.

Proportion of Hazardous/ Non-hazardous Waste (%)



▼ **Percentage of hazardous/non-hazardous waste (%)**

Percentage of hazardous/non-hazardous industrial waste at each location (%)		
Plant	Hazardous industrial waste	Non-hazardous industrial waste
Pan-International, Taipei	0.00%	100.00%
Dongguan Pan-International	2.71%	97.29%
New Ocean, Jiangxi	3.94%	96.06%
Honghuasheng, Yantai	65.31%	34.69%
CJ Electric Systems, Wuhu	0.00%	100.00%
PIU (USA)	0.00%	100.00%
Chaohu Ruichang	0.00%	100.00%
Anqing Ruiyu	0.00%	100.00%
Wuhu Hezhong	0.00%	100.00%
Yibin Pan-International	0.00%	100.00%
Taiwan-Czech Electronics	0.00%	100.00%
Huizhou Taiwan-Czech Electronics	0.00%	100.00%
CJ Electric Systems, Ordos	0.00%	100.00%
Total After Share	59.81%	40.19%



● Description of Total Waste and Intensity Performance

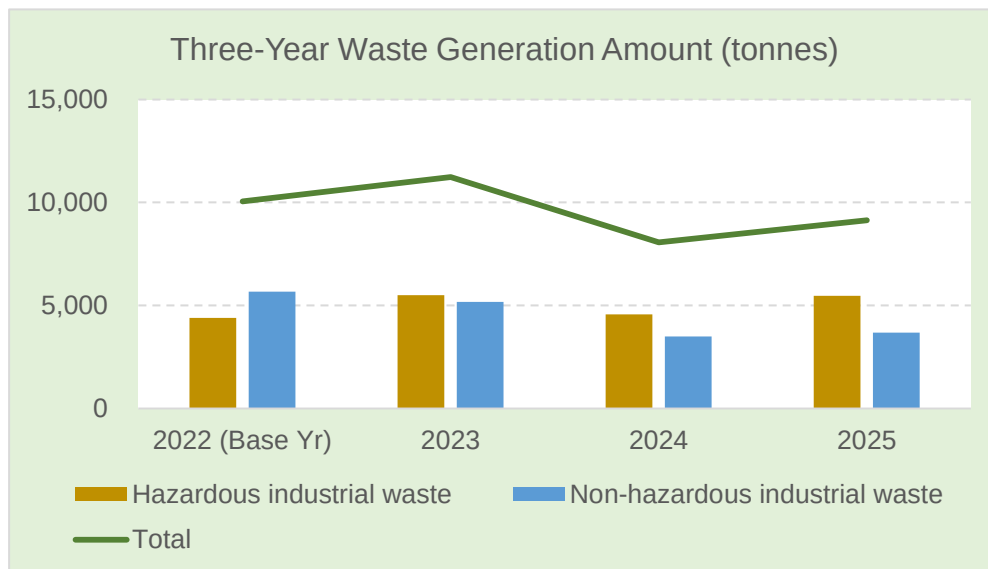
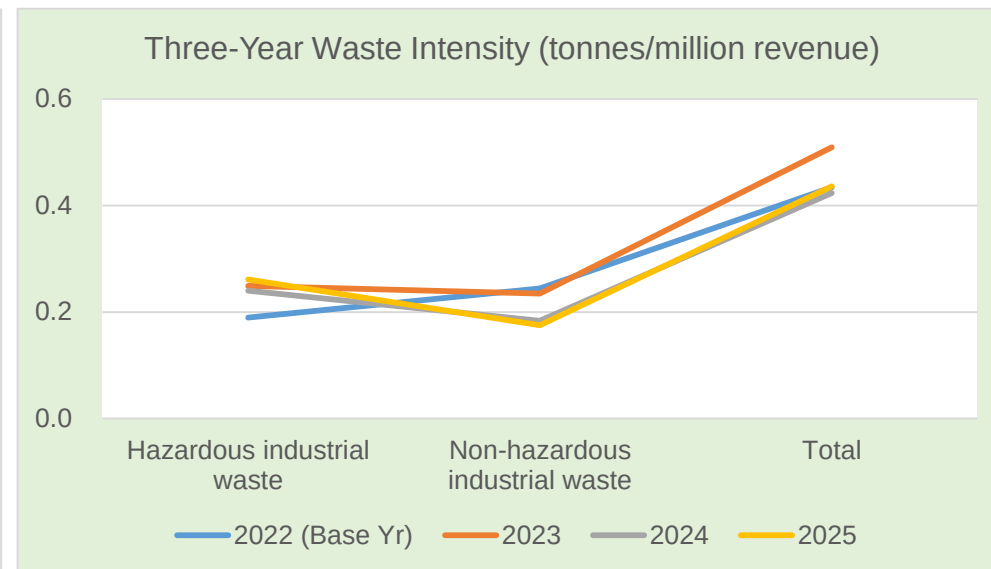
1. Compared to the 2024 Year (Total amount of waste increased by 13.41%, Total Intensity increased by 2.99%, Non-Harmfulness Intensity decreased by 4.41%):

- In 2025, the total waste generated for the Group was **9,140.984 metric tons**, an increase of 1,080.599 metric tons (+13.41%) compared to 2024 (8,060.385 metric tons). Among them, hazardous industrial waste increased by 896.895 metric tons, and non-hazardous industrial waste increased by 183.704 metric tons.
- **Primary reasons for increase in generation amount:** The main reasons are due to boundary expansion and increased production capacity (particularly the increase in high-end board production at the PCB hotspot plant Honghuasheng, Yantai), as well as the expansion of the reporting boundary for this year, including data from 8 additional subsidiaries. Furthermore, all of the Group's recycling operations are outsourced for processing and not directly returned to the Plant. Although the generation of waste increased due to the impact of boundary expansion, both hazardous and non-hazardous recycling rates (reuse rates) reached new highs in 2025 through enhanced resource recycling and recycle and reuse management, and the overall waste management efficiency continued to improve.
- In terms of intensity, the overall waste intensity in 2025 was 0.436 tons per million NT dollars of revenue, which was a slight increase of 2.99% compared to 2024. Among them, the intensity of non-hazardous industrial waste decreased from 0.183 to 0.175 tons per million NT dollars of revenue, a reduction of 4.41%, indicating that the Group's continuous promotion of process improvements, resource recycling, and waste reduction measures have gradually shown results. On the other hand, the hazardous industrial waste intensity increased by 8.63%, mainly influenced by the inclusion of new locations and the increase in PCB process capacity.
- In addition, all of the Group's waste is lawfully entrusted to compliant removal, processing, and recycling agencies, and is not recycled internally within the plant. Although the generation of waste increased due to the reporting boundary expansion, the recycling rates (reuse rates) of both hazardous and non-hazardous waste improved compared to the previous year through continuous enhancement of resource recycling management, and the overall waste management efficiency continued to improve.

2. Compared to the baseline year 2022 (Total amount decreased by 9.15%, Intensity slightly increased by 0.51%):

- Total amount ongoing control: Looking at the long-term trend, despite the operational scale and disclosed boundary in 2025 being larger than in previous years, the total waste generated in 2025 significantly decreased by 920.224 metric tons compared to the 2022 baseline year (10,061.208 metric tons), representing an overall reduction of 9.15%. Among them, non-hazardous industrial waste decreased from 5,665.655 metric tons in 2022 to 3,673.943 metric tons in 2025, a significant reduction of 35.15%, demonstrating the Group's effective management in promoting waste reduction at the source, packaging reduction, and the reuse of carriers.

▼ Last Three Years and Base Year (2022) - Industrial Waste Generation (Unit: Tonnes), Intensity (Unit: Tonnes per NT\$ million)



Generation Amount (tonnes)	Hazardous industrial waste	Non-hazardous industrial waste	Total
2022 (Base Year)	4395.553	5665.655	10061.208
2023	6054.538	5178.218	11232.756
2024	4570.146	3490.239	8060.385
2025	5467.041	3673.943	9140.984

Intensity (tonnes/million revenue)	Hazardous industrial waste	Non-hazardous industrial waste	Total
2022 (Base Year)	0.190	0.244	0.434
2023	0.249	0.235	0.509
2024	0.240	0.183	0.423
2025	0.261	0.175	0.436

Note: CJ Electric Systems, Wuhu expanded in 2023 (Dechan Plant area increased by 10,600 pings).

Note: For Honghuasheng Yantai in 2022, the hazardous waste copper-containing waste disposal contractor stopped operations, causing some hazardous waste (about 560 tons) generated in 2022 to be disposed of in 2023.

Note: In 2025, the increase in production capacity and boundary expansion (adding 8 entities).

Industrial Waste Disposal Transfer Explanation

The Group's waste treated by recycling methods mainly includes non-hazardous waste such as waste wood, waste metal, waste packaging materials, food waste, as well as hazardous waste like edge materials and waste metals. The recycling methods primarily involve preparation for reuse, recycling, and other recycling operations. **In 2025, the amount of waste transferred for recycling operations included 4,809.4989 tonnes of**

hazardous waste and 2,920.9032 tonnes of non-hazardous waste, totaling 7,730.402 tonnes, all of which was handled by third-party contractors.

▼ Waste Transferred from Disposal by Recycling Operations (Unit: Tonnes)

Waste Types Disposal Transfer Method	Hazardous industrial waste (tonnes)			Total recycling amount (tonnes)	Recycle and Reuse Rate %	Non-hazardous industrial waste (tonnes)		Total recycling amount (tonnes)	Recycle and Reuse Rate %
	Recycling	Preparation for Reuse	Other recycling			Recycling	Other recycling		
Pan-International, Taipei	0.000	0.000	0.000	0.000	NA	0.000	0.000	0.000	0.00%
Dongguan Pan-International	0.300	0.000	4.300	4.600	100.00%	114.630	0.000	114.630	69.32%
New Ocean, Jiangxi	1.014	0.065	0.000	1.079	40.54%	0.000	39.153	39.153	60.29%
Honghuasheng, Yantai	4803.820	0.000	0.000	4803.820	87.99%	2675.172	0.000	2675.172	92.25%
CJ Electric Systems, Wuhu	0.000	0.000	0.000	0.000	NA	69.443	0.000	69.443	20.14%
PIU (USA)	0.000	0.000	0.000	0.000	NA	0.000	0.000	0.000	0.00%
Chaohu Ruichang	0.000	0.000	0.000	0.000	NA	22.504	0.000	22.504	18.97%
Anqing Ruiyu	0.000	0.000	0.000	0.000	NA	0.000	0.000	0.000	0.00%
Wuhu Hezhong	0.000	0.000	0.000	0.000	NA	0.000	0.000	0.000	0.00%
Yibin Pan-International	0.000	0.000	0.000	0.000	NA	0.000	0.000	0.000	0.00%
Taiwan-Czech Electronics	0.000	0.000	0.000	0.000	NA	0.000	0.000	0.000	0.00%
Huizhou Taiwan-Czech Electronics	0.000	0.000	0.000	0.000	NA	0.000	0.000	0.000	0.00%
Dongguan Guangshan	0.000	0.000	0.000	0.000	NA	0.000	0.000	0.000	NA
CJ Electric Systems, Ordos	0.000	0.000	0.000	0.000	NA	0.000	0.000	0.000	0.00%
Total	4805.134	0.065	4.300	4809.499	87.97%	2881.750	39.153	2920.903	79.50%

Note: The classification of hazardous and non-hazardous waste is based on local regulations at each location.

Note: The statistics for CJ Electric Systems, Wuhu include Ruichang (factory area) and Dechang (warehouse).

Note: Dongguan Guangshan is set up within Dongguan Pan-International, and the waste is uniformly handled by Dongguan Pan-International.

Industrial Waste Direct Disposal Explanation

▼ Waste Directly Disposed of by Disposal Operations (Unit: Tonnes)

Waste Types	Hazardous industrial waste	Non-hazardous industrial waste				Total amount			
Disposal Transfer Method	Incineration (with energy recovery)=Hazardous, no total recycling amount	Incineration (with energy recovery)	Incineration (without energy recovery)	Landfill	Total amount	Incineration (with energy recovery)	Incineration (without energy recovery)	Landfill	Total amount
Pan-International, Taipei	0.000	20.925	0.000	0.000	20.925	20.925	0.000	0.000	20.925
Dongguan Pan-International	0.000	50.730	0.000	0.000	50.730	50.730	0.000	0.000	50.730
New Ocean, Jiangxi	1.582	25.791	0.000	0.000	25.791	27.373	0.000	0.000	27.373
Honghuasheng, Yantai	655.960	224.880	0.000	0.000	224.880	880.840	0.000	0.000	880.840
CJ Electric Systems, Wuhu	0.000	0.000	275.350	0.000	275.350	0.000	275.350	0.000	275.350
PIU (USA)	0.000	0.000	0.000	1.302	1.302	0.000	0.000	1.302	1.302
Chaohu Ruichang	0.000	0.000	96.158	0.000	96.158	0.000	96.158	0.000	96.158
Anqing Ruiyu	0.000	36.082	0.000	0.000	36.082	36.082	0.000	0.000	36.082
Wuhu Hezhong	0.000	0.000	15.907	0.000	15.907	0.000	15.907	0.000	15.907
Yibin Pan-International	0.000	0.000	1.540	0.000	1.540	0.000	1.540	0.000	1.540
Taiwan-Czech Electronics	0.000	0.967	0.000	0.000	0.967	0.967	0.000	0.000	0.967
Huizhou Taiwan-Czech Electronics	0.000	1.007	0.000	0.000	1.007	1.007	0.000	0.000	1.007
Dongguan Guangshan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CJ Electric Systems, Ordos	0.000	0.000	0.000	2.401	2.401	0.000	0.000	2.401	2.401
Total	657.542	360.382	388.955	3.703	753.040	1017.924	388.955	3.703	1410.582

Note: The classification of hazardous and non-hazardous waste is based on local regulations at each location. include Ruichang (factory area) and Dechang (warehouse).

Note: The statistics for CJ Electric Systems, Wuhu

Note: Dongguan Guangshan is set up within Dongguan Pan-International, and the waste is uniformly handled by Dongguan Pan-International.

In addition to waste disposed through resource recycling, the Group's other direct disposal methods include: incineration (with energy recovery), incineration (without energy recovery), and landfill. In 2025, the Group had a total of 1,410.582 tonnes of waste disposed through direct disposal methods, all of which was handled by qualified third-party professional organizations, including: incineration with energy recovery: 1,017.924 tonnes, incineration without energy recovery: 388.955 tonnes, and landfill disposal: 3.703 tonnes.

It is worth noting that the Group's various locations continue to improve their waste management mechanisms and actively increase their recycling utilization rates. In 2025, Dongguan Pan-International achieved a recycling rate of 70.15%, and Honghuasheng, Yantai reached an even higher rate of 89.46%. Both exceeded the 70% threshold, demonstrating the Group's excellent performance in resource circulation and pollution reduction. This also reflects our steady progress toward the sustainable goals of "zero waste landfill" and "maximum resource utilization".

This initiative corresponds to the United Nations Sustainable Development Goals (SDGs):

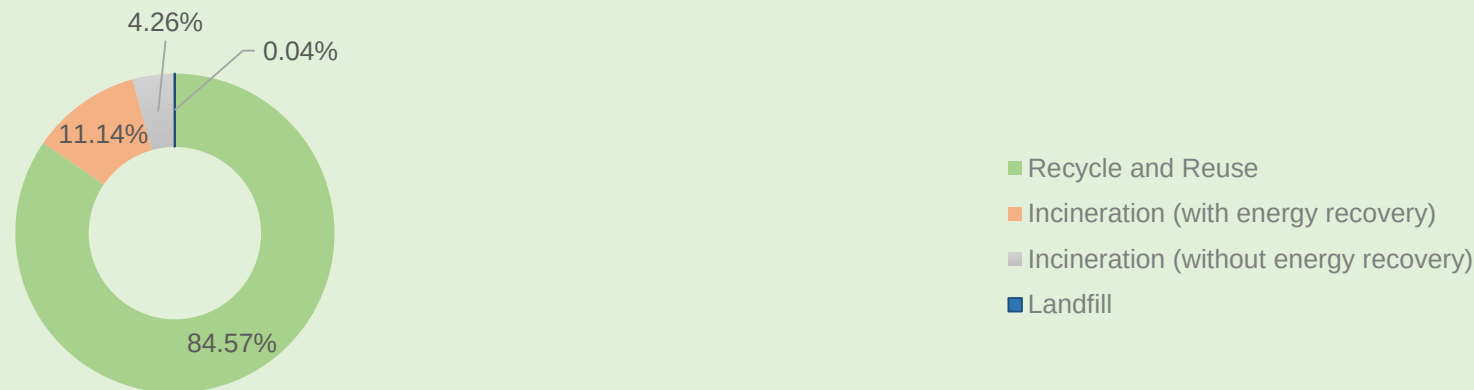
SDG 12: Responsible Consumption and Production — Through the implementation of waste classification, improving the recycling rate, and optimizing disposal processes, promote resource circulation and waste reduction at the production end.

SDG 13: Climate Action - Adopt methods such as incineration with energy recovery to effectively reduce the long-term impact of waste on the environment and lower the potential risk of Greenhouse Gas emissions.

▼ Waste Disposal Methods Proportion

Action taken	Hazardous waste		Non-hazardous waste		Total	
	Generation Amount Tonnes	Disposal Methods Proportion %	Generation Amount Tonnes	Disposal Methods Proportion %	Generation Amount Tonnes	Disposal Methods Proportion %
Recycle and Reuse	4809.499	87.97%	2920.903	79.50%	7730.402	84.57%
Incineration (with energy recovery)	657.542	12.03%	360.382	9.81%	1017.924	11.14%
Incineration (without energy recovery)	0.000	0.00%	388.955	10.59%	388.955	4.26%
Landfill	0.000	0.00%	3.703	0.10%	3.703	0.04%

Disposal Methods Proportion %

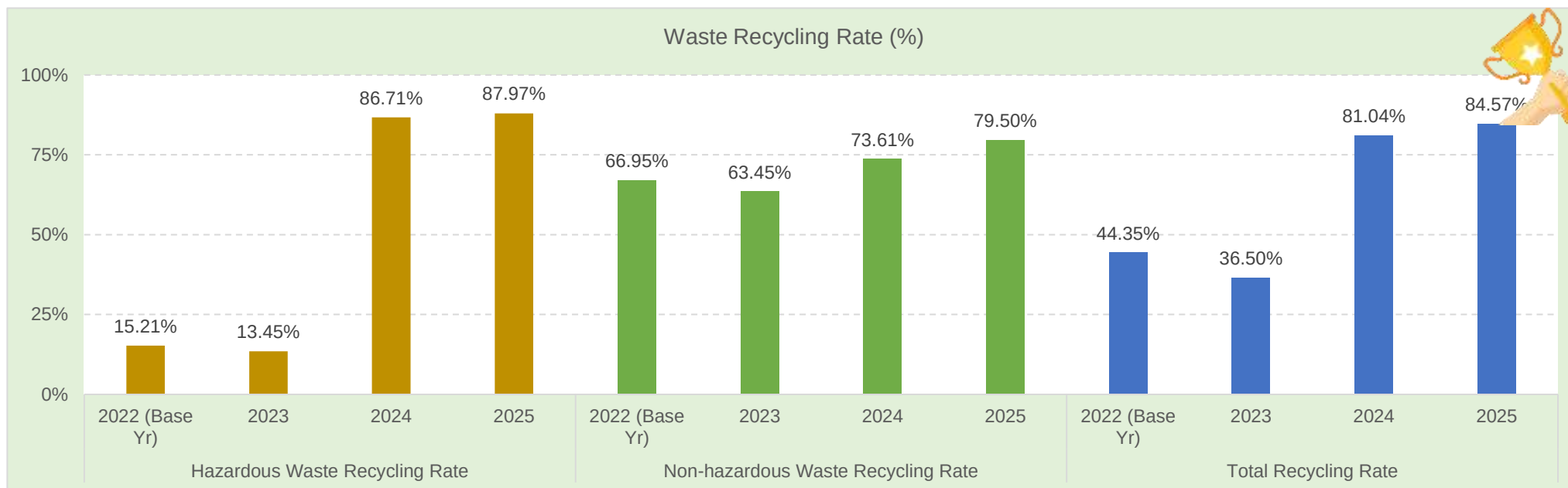


Recycling Rate Performance

▼ Three-Year Hotspot - Plant / For the Group - Waste Recycling Rate (%)

Location	Hazardous Waste Recycling Rate				Non-hazardous Waste Recycling Rate				Total Recycling Rate			
	2022 (Base Year)	2023	2024	2025	2022 (Base Year)	2023	2024	2025	2022 (Base Year)	2023	2024	2025
Dongguan Pan-International	100.00%	27.37%	0.00%	100.00%	0.00%	74.67%	75.06%	69.32%	0.39%	74.56%	73.35%	70.15%
New Ocean, Jiangxi	95.62%	99.25%	51.52%	40.54%	4.18%	95.06%	85.24%	60.29%	5.63%	95.10%	84.61%	59.51%
Honghuasheng, Yantai	15.16%	13.42%	86.83%	87.99%	73.60%	72.28%	81.04%	92.25%	46.69%	36.97%	84.68%	89.46%
CJ Electric Systems, Wuhu	100.00%	NA	NA	NA	0.00%	3.45%	16.04%	20.14%	0.05%	3.45%	16.04%	20.14%
Total Amount (Full Boundary*)	15.21%	13.45%	86.71%	87.97%	66.95%	63.45%	73.61%	79.50%	44.35%	36.50%	81.04%	84.57%

*Full boundary refers to the statistical data for the full boundary in the report



● Recycling Rate Performance Description

- **Breakthrough at key plants drives the Group's overall recycling rate to a new high (Total recycling rate 84.57%, Hazardous Waste Recycled Rate 87.97%):**
 - Honghuasheng, Yantai is the Group's main waste-generating location (accounting for 80 to 90%). Since 2024, after promoting the "comprehensive utilization of hazardous waste (technical transformation)" disposal model for copper-containing waste, its Hazardous Waste Recycled Rate significantly increased from the 2022 baseline year (15.16%) and 2023 (13.42%) to 86.83% in 2024 and 87.99% in 2025.
 - Combining a significant increase in the non-hazardous waste recycling rate to 92.25%, the total recycling rate at the Honghuasheng, Yantai plant in 2025 reached 89.46%, becoming the core driving force for the strong growth of the Group's total recycling rate from the 2022 baseline year (44.35%) to 84.57% in 2025.
- **Non-hazardous Waste Recycling Rate steadily increased (increased to 79.50%):**
 - The Group's non-hazardous waste recycling rate continuously grew from the 2022 baseline year of 66.95% and 63.45% in 2023 to 73.61% in 2024 and 79.50% in 2025.

- Through implementing source management actions such as the circular reuse of pallets, packaging material recycling, and waste classification, each plant has achieved a yearly increase in the resource utilization rate of non-hazardous industrial waste.
- **Analysis of the Difference in Independent Disposal and Transformation by Plant:**
 - Dongguan Pan-International: In 2025, the amount of hazardous industrial waste was small, and it was completely recycled into resources (100.00%). The non-hazardous waste recycling rate remained at a high level of 69.32%, and the overall total recycling rate reached 70.15%.
 - New Ocean, Jiangxi: Affected by the adjustment of some product combinations and supplier contracts, the recycling rate declined after the peak in 2023 (with a total recycling rate of 59.51% in 2025). In the future, it will continue to optimize Waste Classification and seek cooperation with excellent resource recyclers.
 - CJ Electric Systems, Wuhu: There was no generation of hazardous industrial waste, and the non-hazardous waste recycling rate increased annually from 3.45% in 2023 to 20.14% in 2025, showing a positive trend of continuous improvement.



5.4 Air Quality Management

(GRI 305-7)

5.4.1 Air Pollutant Management

For the Group: Each Operating Location's Air Pollutant Emission Situations Vary According to Their Operational Nature and Process Differences:

Locations Not Involved in Potential Air Pollutant Emissions:

- Office and warehouse locations: Pan-International, Taipei; PIU; Taiwan-Czech Electronics; Huizhou Taiwan-Czech Electronics; Dongguan Guangshan; Yibin Pan-International; and CJ Electric Systems, Ordos primarily operate as offices or warehouses without production processes, and thus do not involve any processes that could result in air pollutant emissions.
- Simple Assembly Locations: Dongguan Pan-International, CJ Electric Systems, Wuhu, Chaohu Ruichang, Anqing Ruiyu, and Wuhu Hezhong primarily focus on basic electronic assembly. These locations mainly engage in the assembly of electronic products, with relatively simple processes that do not involve high-pollution procedures.

Locations Involved in Potential Air Pollutant Emissions and Sources:

Only two subsidiaries of the Group, Honghuasheng, Yantai and New Ocean, Jiangxi, may generate some air pollutants due to the characteristics of the industry and process requirements, explained as follows:

- **Honghuasheng, Yantai (PCB manufacturing plant):** Its manufacturing processes involve chemical processes such as etching, copper plating, drying, and cleaning, which generate:
 - Nitrogen oxides and sulfur oxides: Generated by natural gas boilers, these emissions are untreated but comply with direct discharge standards.
 - VOCs: Primarily discharged from waste gas scrubber used in processes involving inks (such as inner layer or solder resist ink printing and ink baking lines).
- **New Ocean, Jiangxi (Wiring assembly and profiling plant):** Due to certain processes involving heating, bonding, and profiling operations, a small amount of air pollutants may still be generated. Including:
 - Particulate Matter (PM) generated from assembly processes
 - Volatile organic compounds (VOC) generated from Assembly/molding/C&W processes
 - Other major gases - Total Non-methane Hydrocarbons generated from Assembly/molding/C&W processes
 - Other significant gases - Tin and its compounds generated from assembly processes

● Prevention equipment and regular monitoring mechanisms

For effectively reducing the impact of air pollutants on the environment, the Group has established a comprehensive pollution prevention and monitoring management mechanism for plants that may produce air pollutants. We continuously track various emission situations to ensure conformity with relevant regulatory requirements.

Honghuasheng, Yantai has installed high-efficiency waste gas treatment equipment and adopts monthly or semi-annual inspections by third-party agencies based on the characteristics of different pollutants. Some emission points are equipped with Continuous Emission Monitoring Systems (CEMS) to continuously monitor emission conditions.

New Ocean, Jiangxi commissions third-party inspection agencies to conduct annual emissions testing based on the type of pollutants, ensuring that all emissions of air pollutants conform to government regulations and environmental impact assessment commitments.

The Group continues to reduce the impact of air pollutant emissions on the environment through prevention equipment, regular inspection, and emission monitoring management measures. In 2025, Air Pollutant Emissions at each Operating Location conformed to the environmental regulations of their respective locations, with no major violations or penalties occurring.

According to actual measurements, the air pollutants emitted by both plants completely conform to or exceed the limit values set by local government regulations and environmental impact assessment commitment standards, demonstrating effective environmental governance.

▼ Air Pollution Control Equipment and Treatment Efficiency



Location	Air Pollutant Name	Prevention Equipment	Treatment Efficiency (%)
Honghuasheng, Yantai	Nitrogen oxides (NOx)	Direct discharge	Meets direct discharge standards
	Sulfur oxides (SOx)	Direct discharge	Meets direct discharge standards
	Volatile organic compounds (VOC)	Activated carbon adsorption treatment process & water spray scrubbing	Activated carbon treatment efficiency: 90%
	Persistent Organic Pollutants (POPs), Hazardous Air Pollutants (HAPs), Particulate Matter (PM)	Not contained	Not contained
New Ocean, Jiangxi	Particulate Matter (PM)	Activated Carbon Filtration	Treatment efficiency 95%
	Nitrogen oxides	Activated Carbon Filtration	Treatment efficiency 95%
	Sulfur Dioxide	Activated Carbon Filtration	Treatment efficiency 95%
	Volatile organic compounds (VOC)	Activated Carbon Filtration	Treatment efficiency 95%

Location	Air Pollutant Name	Prevention Equipment	Treatment Efficiency (%)
	Total Non-methane Hydrocarbons	Activated Carbon Filtration	Treatment efficiency 95%
	Tin and its compounds	Activated Carbon Filtration	Treatment efficiency 95%

▼ Air Pollutant Emission Concentration Monitoring

Location	Major Gas	Process Emission Sources	Actual Tested Emission Concentration	Emission Standard (Unit)	Monitoring Frequency
Honghuasheng, Yantai	Nitrogen oxides (NOx)	Natural gas boiler	36.33	100 mg/m ³	Monthly inspection
	Sulfur oxides (SOx)	Natural gas boiler	Not Detected	50 mg/m ³	Quarterly
	Volatile organic compounds (VOC)	Waste gas scrubber used in the process	0.8	50 mg/m ³	Quarterly
New Ocean, Jiangxi	Particulate Matter (PM)	Assembly	<20 mg/m ³	120 mg/m ³	Once per year
	Nitrogen oxides	Assembly	Not Detected	240 mg/m ³	Once per year
	Sulfur Dioxide	Assembly	Not Detected	550 mg/m ³	Once per year
	Total Non-methane Hydrocarbons	Assembly/molding/C&W	0.012083 kg/h	120 mg/m ³	Once per year
	Volatile organic compounds (VOC)	Assembly/molding	0.000706 kg/h	-	Once per year
	Tin and its compounds	Assembly	0.000548 mg/m ³	8.5 mg/m ³	Once per year

Note 1: This table shows the average values of regular testing in 2025;

Note 2: Emission standards comply with government regulations/environmental impact assessment commitments/air pollution operating permit

Note 3: All data sources are **from third-party testing**

5.4.2 Air Pollutant Emission Reduction and Performance

● In 2025, the Group's Operating Locations' Air Pollutant Emission Data

- **Honghuasheng, Yantai:** In 2025, nitrogen oxides (NOx) emissions were **427.21 kg**, sulfur oxides (SOx) emissions were 0 kg, and volatile organic compounds (VOCs) emissions were **705.54 kg**. The inspection revealed no production of Persistent Organic Pollutants (POPs), Hazardous Air Pollutants (HAPs), Particulate Matter (PM), or other major gases currently regulated.
- **New Ocean, Jiangxi:** In 2025, particulate matter (PM) emissions were 165.822 **kg**, volatile organic compounds (VOCs) emissions were 226.5866 **kg**, total non-methane hydrocarbons emissions were 331.8566 **kg**, and tin and its compounds emissions were 0.0007 **kg**; inspection results for nitrogen oxides (NOx) and sulfur dioxide (SOx) were Not Detected (N.D.). Besides the above items, no other major gases currently under regulatory monitoring were generated.
- Other locations: None.

▼ Pan-International Industrial Corp. - Air Pollutant Emissions Over the Years (Unit: kg)

Location	Item	2023	2024	2025
Honghuasheng, Yantai	Nitrogen oxides (NOx)	391	204.257	427.21
	Sulfur oxides (SOx)	166	0	0
	Volatile organic compounds (VOC)	933	346.085	705.54
New Ocean, Jiangxi	Particulate Matter (PM)	N.D	459.089	165.822
	Nitrogen oxides	N.D	ND	ND
	Sulfur Dioxide	N.D	ND	ND
	Volatile organic compounds (VOC)	5.2088	4.097	226.5866
	Total Non-methane Hydrocarbons	408	280.333	331.8566
	Tin and its compounds	N.D	3.178	0.0007

Note 1: Measurement method explanation: Emission amounts are based on monitored emission concentrations (average values).

Note 2: Coefficient source: There is no coefficient for monitoring emission concentrations.

Note 3: VOC is calculated based on the concentration at the time of detection × total exhaust volume

● Comparison of Air Pollutant Emissions Over the Past 3 Years

- Explanation of the increase in nitrogen oxides (NOx) emissions:

In 2025, NOx emissions increased compared to 2023 and 2024, mainly due to the increased use of natural gas, including enhanced production and energy efficiency optimization measures.

- Promote the "Replacing Electricity with Gas" Energy Efficiency Improvement Plan: In 2025, Honghuasheng completed the renovation of the humidification systems in Plant A1 and Plant A3, fully replacing the previously high electricity-consuming "electrode humidifiers" with the high-efficiency "natural gas boiler steam humidification" (previously only used in Plant A2). Although this improvement has led to an increase in the usage of natural gas and the corresponding amount of exhaust gases, it has significantly reduced the plant's total electricity consumption and overall Greenhouse Gas carbon emissions, effectively achieving energy structure optimization and overall energy saving and carbon reduction benefits. But it is still much lower than the local limit.
 - Production capacity increase: As the scale of production grows, the total usage of natural gas correspondingly increases.
- ### - Volatile organic compounds (VOCs) and total exhaust gas management:
- Upgrade of Environmental Compliance Facilities: According to Article 6.2.3 of the Mainland China's "Pollution Control Standard for Storage of Hazardous Wastes" (GB 18597-2023), the addition of gas collection and purification facilities in the hazardous waste warehouse has led to a slight increase in total gas emissions, serving as a proactive response to regulatory compliance.
 - VOCs Concentration Monitoring and Compliance Commitment: The total amount of VOC emissions is estimated by calculating the detection concentration multiplied by the total exhaust volume, and it is easily affected by fluctuations in concentration at the time of inspection. Honghuasheng, Yantai continues to strive to optimize the exhaust gas treatment system to ensure that the concentration and total amount of VOCs emissions substantially exceed local government regulatory requirements and environmental impact assessment commitment standards.
- ### - Explanation of the decrease in the total amount of particulate matter (PM) and tin and its compounds:
- In 2025, the emissions of particulate matter (PM) and tin and its compounds decreased compared to 2023 and 2024, mainly due to reasonable data fluctuations and measurement errors during the inspection process. All inspection values were well below the emission limits set by the country's regulations, and the overall operation of the prevention equipment remained highly efficient and stable.

● Reduction Plan and Management Strategy:

As only the two aforementioned subsidiaries generate air pollutant emissions, **and their emission levels are far below regulatory limits—with most parameters showing “not detected” results.** Given the effectiveness and control performance of the existing high-efficiency prevention and treatment equipment, **the Group's management strategy and reduction plan for air pollutants focus on the continuous operation of existing high-efficiency prevention facilities and the strict implementation of regular inspections and maintenance. This ensures that all prevention facilities maintain optimal operational performance, continuing the excellent compliance management achievements from previous years.**

This management action corresponds to the United Nations Sustainable Development Goals (SDGs) as follows:

SDG 3: Good Health and Well-Being — Control air pollution sources to safeguard the respiratory health and quality of life for employees and community residents.

SDG 11: Sustainable Cities and Communities — Implement pollution control to prevent harmful gases from impacting the surrounding environment.

SDG 12: Responsible Consumption and Production — Promote green manufacturing, pollution reduction, and emission control.

5.5 Biodiversity

(GRI 101 : 2024)



5.5.1 Biodiversity Policy and Impact Management

With the global emphasis on ecological conservation and Natural Capital increasing, the Group acknowledges that a healthy ecosystem is a crucial foundation for sustainable business operations and has begun planning work related to biodiversity management.

In 2025, the Group initiated the drafting of the Biodiversity and [No Deforestation](#) Commitment policy, aiming to gradually integrate biodiversity and nature-related risks into the Group's sustainable governance and risk management framework as a critical basis for future implementation of natural capital management and ecological conservation. Through the establishment and continuous improvement of systems, we aim to reduce the potential impact of operational activities on natural habitats and ecosystems, and respond to the United Nations Sustainable Development Goals SDG 14 Life Below Water and SDG 15 Life on Land.

5.5.2 Biodiversity Impact Identification Planning

In 2025, the Group will initiate the establishment of biodiversity management, subsequently establishing relevant management systems, risk assessments, and performance indicators in accordance with policy progress, and continually disclosing implementation results.

To gradually understand the potential impact of the Group's operations on the natural environment and biodiversity, the Group has begun planning biodiversity impact identification and management mechanisms and will progressively promote related work based on operational development and international trends. The current planning direction is as follows:

- Operating Location Assessment: Plan to assess the Headquarters and main production locations (such as Dongguan, Yantai, Jiangxi, Wuhu, etc.) for surrounding ecologically sensitive areas, Key Biodiversity Areas (KBA), and legally protected areas, to evaluate the geographic relationship between operating locations and important ecological areas.
- Supply Chain Biodiversity Assessment: Plan to gradually incorporate biodiversity topics into supply chain management and assessment mechanisms, evaluating the potential impact of raw material procurement and production activities on the natural environment and ecological habitats.
- Establishing management mechanisms: In the future, aligned with the promotion of the Biodiversity and [No Deforestation](#) Commitment policy, biodiversity impact identification, risk assessment, and tracking improvement mechanisms will be gradually established. We will continue to refine natural capital management, advancing towards the sustainable goal of mutual prosperity between the enterprise and nature.

5.5.3 Ecological Conservation Actions

In addition to policy planning, the Group also supports ecological protection through practical public welfare activities.

Participated in the "Keelung Islet Fish Fry Release and Coastal Beach Cleanup Activity" in 2025, jointly inputting efforts with companies and professional managers in marine ecological restoration. On the day of the event, two tourist fishing boats were used to release fish fingerlings offshore, with Pan-International Industrial Corp. donating a total of 1,941 fish fingerlings. Additionally, beach cleaning activities were conducted along the coast of Keelung, taking concrete actions to help restore marine biological resources, reduce marine waste, and enhance the awareness of employees and the general public regarding marine environmental protection and biodiversity. This demonstrates the company's commitment to fulfilling its environmental responsibilities.

In addition, Honghuasheng, Yantai organized the "River Patrol and Water Protection Volunteer Activity" in 2025, calling on employees to jointly participate in river patrols and environmental cleaning, actively maintaining the aquatic ecological environment and promoting the concepts of water resource conservation and environmental protection.

5.6 Environmental Regulatory Compliance

For the Group, we adhere to the principles of legal compliance in operations, following the environmental protection laws and regulations of each operation location, as well as the standards set by regulatory authorities. Through our Environmental Management System, internal audits, and regular legal compliance reviews, we continuously strengthen pollution prevention and environmental risk management to ensure that all operational activities conform to environmental regulatory requirements.

In the 2025 Year, the Group had no major environmental non-compliance incidents, and there were no penalties from authorities due to violations of environmental regulations.