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Sustainable Environment



Climate change is one of the environmental issues currently of concern to the United Nations, governments, society, and the business community. Kaori, in accordance with the 2019 Task Force on Climate-related Financial Disclosures (TCFD) Recommendations established by the International Financial Stability Board, has set the following governance, strategy, risk management, and metrics and targets for the company, as outlined in the table below:

Management level	Kaori's response measures
 Governance	- The ESG Committee identifies and prioritizes risks and countermeasures, regularly reports to the senior management to review the effectiveness of risk control, and provides decision-making and guidance. - Based on discussions or resolutions by senior management, the ESG Committee formulates policies and improvement goals. It assigns the relevant responsible units to adjust operations accordingly. The committee reports to the Board of Directors on the status of climate change issues periodically or as needed, ensuring the Board is aware of and understands the climate change risks the Company faces.
 Strategy	- The Company evaluates, categorizes, and prioritizes the physical risks that climate change may pose to its assets. It establishes response strategies along with precise and rigorous preventive measures and emergency response plans. In the event of a crisis or disaster, the most appropriate response measures and recovery plans are promptly implemented to mitigate the potential impact of the disaster and instability. - In terms of transition risks, we plan and purchase renewable energy and invest in green power certificates, following the trend of energy diversification and in line with the regulations and goals of the "Renewable Energy Development Act."
 Risk management	Based on the TCFD framework, climate risk issues are identified through reports from international institutions, peer industry analysis, and relevant regulatory research. By using weighted values for the financial or strategic impact and the likelihood of occurrence, the magnitude of risk is assessed, and the importance of each risk issue is prioritized.
 Indicators and targets	- Reduction of GHG emissions - Develop renewable energy (such as solar energy) - Strengthen corporate resilience and performance in response to climate change

In response to climate change issues, Kaori has set the following short, medium, and long-term environmental management metrics, as outlined in the table below:

Timeline	Short-term goals: (2024 - 2025)	Medium-term metrics: (2026 - 2029)	Long-term metrics: (after 2030)
Climate change and energy conservation	Execute energy and carbon reduction strategy	Power saving 3%	Power saving 5%
	0 days of production disruption caused by the disaster	0 days of production disruption caused by the disaster	0 days of production disruption caused by the disaster
	Conduct greenhouse gas emissions inventory and verification	Set reduction targets	Internal carbon pricing
	Installation of renewable energy	Installation of renewable energy	Green energy certificate transaction
waste	0 cases of non-compliance with waste laws and regulations	0 cases of non-compliance with waste laws and regulations	0 cases of non-compliance with waste laws and regulations
	100% of waste is disposed of by legal operators	100% of waste is disposed of by legal operators	100% of waste is disposed of by legal operators
Air pollution	0 cases of non-compliance with air pollution regulations	0 cases of non-compliance with air pollution regulations	0 cases of non-compliance with air pollution regulations
Water resources	0 cases of non-compliance with wastewater discharge regulations	0 cases of non-compliance with wastewater discharge regulations	0 cases of non-compliance with wastewater discharge regulations
	0 cases of production loss due to water restrictions	0 cases of production loss due to water restrictions	0 cases of production loss due to water restrictions
Legal Compliance	0 cases of non-compliance with environmental laws and regulations	0 cases of non-compliance with environmental laws and regulations	0 cases of non-compliance with environmental laws and regulations

Material issue objectives and performance

Kaori is committed to fulfilling its environmental responsibility and becoming a sustainable business with continuous improvement. In line with the short-, medium-, and long-term energy-saving and carbon reduction metrics and related implementation plans mentioned above, we have set and achieved performance goals over the past two years (as shown in the table below) to reduce potential impacts on society and the environment.

	2024 Goals	2024 Performance Achievement Level	2025 Goals
Climate change and energy conservation	Execute energy and carbon reduction strategy	Achieved	Execute energy and carbon reduction strategy
	0 days of production disruption caused by the disaster	0 days → Achieved	0 days of production disruption caused by the disaster
	Carbon inventory and third-party verification passed	Achieved	Set GHG reduction targets
	Kaohsiung Plant's solar energy system launched	Achieved	Installation of renewable energy (Zhongli Plant)
Waste management	0 violation of non-compliance with waste environmental protection laws and regulations	0 cases → Achieved	0 violation of non-compliance with waste environmental protection laws and regulations
	100% of waste is disposed of by legal operators	Achieved	Proper disposal: 100% of waste is disposed of by legal operators
Air pollution	0 violation of non-compliance with air pollution laws and regulations	0 cases → Achieved	0 violation of non-compliance with air pollution laws and regulations
Water resource management	0 cases of non-compliance with wastewater discharge regulations	0 cases → Achieved	0 cases of non-compliance with wastewater discharge regulations
	Production loss due to water restrictions: 0 PCS	0 PCS → Achieved	Production loss due to water restrictions: 0 PCS

Management Measures for Key Environmental Risks

Significant risks	Climate change and energy conservation	Water resources	Waste management
Control methods	- Digitalization of process energy conservation, energy conservation measures, and digital transformation of key production equipment - Green product development by using low-carbon raw materials and refining process technologies - Use reusable eco-friendly tableware to reduce single-use items - Replace old equipment and plan to procure energy-efficient equipment and implement various improvement projects	Maximize water resource efficiency through recycling, water separation, and pollution prevention	- Establishment of the "Waste Management Procedures" to regulate the procedures for the classification, collection, storage, and disposal of industrial waste - Increase the proportion of recyclable waste and reduce the incineration volume of non-recyclable waste - Strengthen waste reduction and recycling of product packaging materials

6.1 Environmental Policy and Commitment

In terms of environmental policy, Kaori is committed to fulfilling its environmental protection responsibilities and becoming a sustainable enterprise through continuous improvement:

Regulatory compliance	Comply with relevant environmental regulations and strive to comply with relevant international environmental regulations.
Production waste reduction	Continue to promote waste reduction in production to achieve the commitment to pollution prevention.
Green energy production	Newly established plants comply with green building regulations and continue to improve energy conservation and carbon reduction measures.
Recycling strategy	Review and evaluate the recycling and reuse of water, metals, plastics, and chemicals used in various activities of the Company. Additionally, educate and promote the importance of resource recycling and environmental awareness among employees within the plant to enhance their environmental literacy.

Kaori has established an appropriate environmental management system in accordance with ISO 14001:2015 (Figure 1) and set up a dedicated unit to take charge of environmental management and maintenance. Evaluate the environmental pollution considerations across the product life cycle, and continuously improve the environmental system through internal management practices to reduce negative impacts, aiming to contribute to environmental protection. In response to climate change and energy supply risks, Kaori actively identifies climate change risks such as floods, droughts, typhoons, power outages, and water shortages.

In addition, the Company has implemented ISO 14064-1:2018 for greenhouse gas (GHG) inventory (Figure 2 shows the verification statement), which not only strengthens the foundation of sustainable governance but also establishes a scientific basis for future carbon footprint assessments, product carbon labeling, carbon cost evaluation, and carbon neutrality strategy planning.

In 2024, the Company did not violate environmental protection laws and regulations resulting in penalties from regulatory authorities.



Figure 1



Figure 2

6.2 Management of Climate Change Risks and Opportunities

According to the “Global Risks Report” that the World Economic Forum (WEF) has been publishing on a yearly basis since 2005, environmental risks have emerged to become the dominant risk category in the world, with Climate Action Failure and Extreme Weather ranking first in the top-10 list for an extended period of time. Following the enactment of the Paris Agreement, which aims to control the global temperature increase within 1.5°C, governments around the world have followed up with their net-zero targets and introduced new regulations in an attempt to mitigate the impact of climate change. As the challenge of climate change is increasing day by day, how to cope with the impact of global warming and extreme weather on business operations has become one of the most urgent issues that deserve our attention.

Since 2021, Kaori has voluntarily adopted the guidelines of the Task Force on Climate-related Financial Disclosures (TCFD) and followed the four core elements: "governance," "strategy," "risk management," and "metrics and targets" recommended by TCFD to identify significant risks and opportunities that climate change may have on Kaori, followed by response strategies.

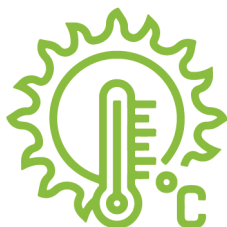
In addition to closely monitoring climate change, Kaori has made climate change one of the major issues for sustainable development and taken the initiative to disclose relevant information according to the requirements of the report preparation guidelines mentioned above. Through inter-departmental communication, discussions are made on the possible scenarios, the likely impacts, and the timing of impacts on Kaori. Each of the scenarios identified is further evaluated to facilitate proper control and response to the associated risks and opportunities. By adopting a more pro-active governance approach toward climate change, Kaori takes pragmatic steps to fulfill its sustainability vision.

6.2.1 Procedures for Identifying Climate Change-Related Risks and Opportunities

Kaori devotes ongoing attention to the climate policies and action plans of various industries at home and abroad and conducts thorough surveys on possible impacts from a number of perspectives including extreme weather, regulations, and market requirements. By analyzing past experience, the timing and possibility of future occurrences, and the degree of impact on business operations, reputation, personnel, financial position, etc., the Company requires all responsible units to propose their own response strategies and make corresponding adjustments internally while maintaining open and transparent communication with all stakeholders. Kaori identifies risks and opportunities of climate change by constructing at least two scenarios and hosts studies and discussions on climate change in the form of workshops. In accordance with the identification cycle, the results of the 2023 assessment report were adopted for this year. The identification process is conducted every three years, with the next assessment scheduled for 2026.

Procedures for identifying climate change-related risks and opportunities are shown below:

A.



Set climate change scenarios

Two climate change scenarios have been constructed:
SSP5-8.5: temperature increased to 6°C
SSP1-2.6: temperature increased to 2°C

B.



Evaluate impacts on the operating environment

Evaluate how climate change affects and impacts the operating environment and stakeholders

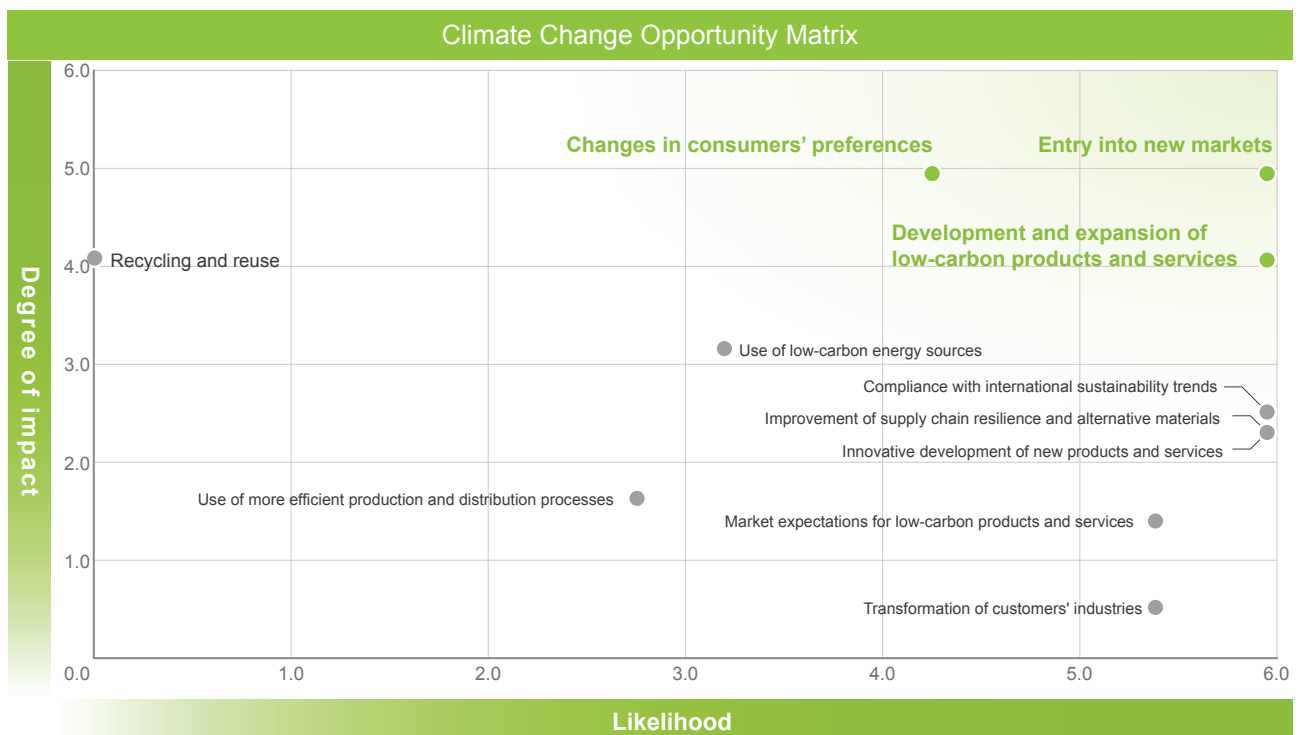
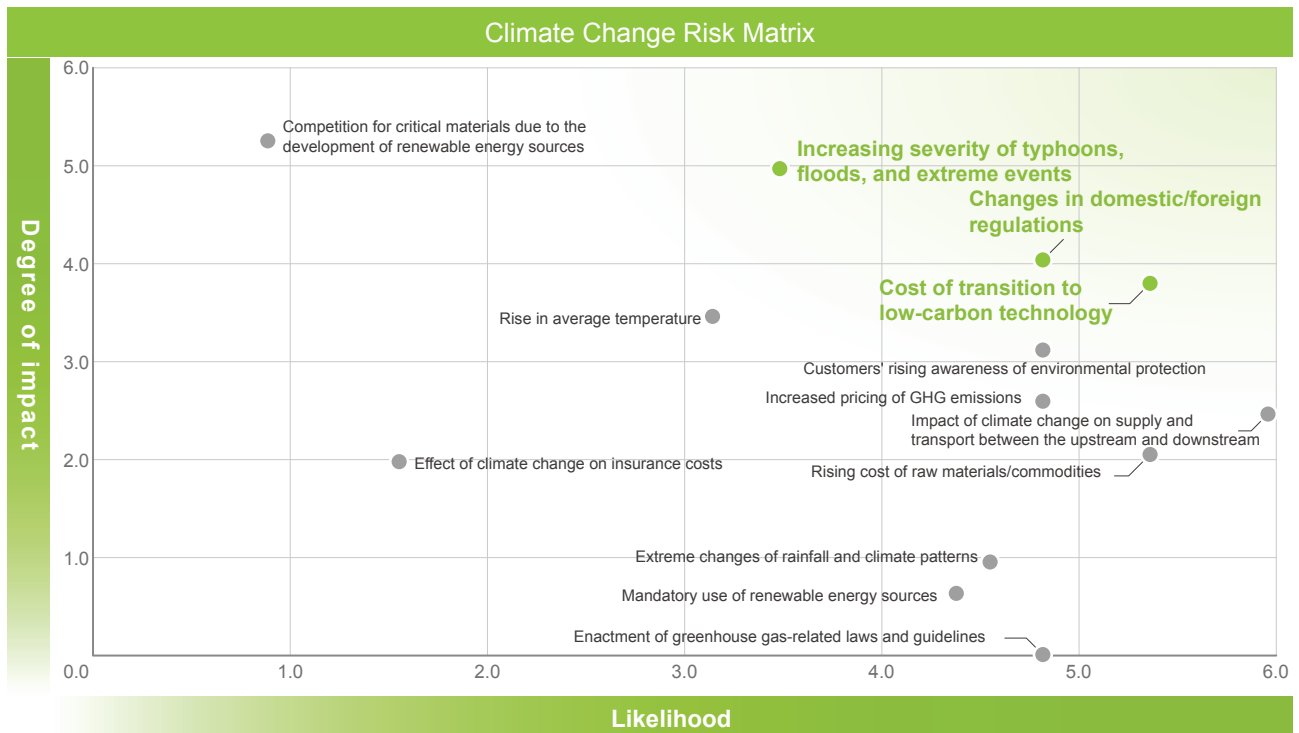
C.



Identify climate risks and opportunities

Establish a risk and opportunity matrix, and identify climate change risks and opportunities

From the climate change risks and opportunities identified, Kaori further analyzed the “Likelihood” and “Degree of impact” and shortlisted three high-risk factors and three high-opportunity factors for 2023. Kaori's climate change risk and opportunity matrix for 2023 is presented below:



6.2.2 Explanation of Climate Change-Related Risks and Opportunities

List of identified climate change risks

Risk ranking	Risk No.	Risk category	Risk factor	Estimated time of occurrence
1	001	Transition risk - technology	Cost of transition to low-carbon technology	Medium-term
2	002	Transition risk - policies and regulations	Changes in domestic/foreign regulations	Medium-term
3	003	Physical risk - immediate	Increasing severity of typhoons, floods, and extreme events	Short-term

Note: Definition of timeframes: short-term: 2023-2024; medium-term: 2025-2028; long-term: after 2029

- **Risk 001** - Cost of transition to low-carbon technology

Impact scenario:

The Company will be required to develop products that feature lower carbon footprints to meet the market's demand, and the transition to lower carbon materials, production procedures, and technologies would require more resources, manpower, and time to be committed to research and development. Any attempt to transition to low-carbon products would incur additional investments of R&D resources or capital or give rise to uncertainties that ultimately increase product costs and reduce revenue.

Risk impact assessment	1. Uncertain access to raw materials: Kaori has plans to make use of low-carbon materials, but there are limitations associated with the development and access to low-carbon materials such as eco-friendly steel and copper. Any uncertainty in the supply would make product delivery timelines more difficult to control. 2. Low-carbon transformation increases costs: In an attempt to conform to low-carbon requirements, the Company will have to commit R&D personnel and capital to low-carbon products, which in turn increases the costs and compromises the competitiveness of the Company's products.
Evaluation of financial impact	Increased operating costs and reduced revenue

- **Risk 002** - Changes in domestic/foreign regulations

Impact scenario:

The Company is compelled to acquire new machinery and equipment that conforms with the low-carbon and environmental protection requirements that governments have enforced through policies and regulations, and it therefore has to renew existing equipment prematurely. A drastic change of policy or law would have to be met with additional capital expenditure and incur additional costs on equipment acquisition and employee training, thereby increasing the costs of the Company.

Risk impact assessment	1. Domestic and foreign carbon taxes: Carbon pricing systems are taking shape at increasing rates at home and abroad. The Company may incur additional carbon taxes and see costs rise over time. 2. Energy management requirements: New energy regulations demand higher energy efficiency from production equipment, for which the Company is required to invest in energy conservation and carbon reduction equipment, and the additional expenditures incurred on fixed assets, talent development, or certification will ultimately increase product costs.
Evaluation of financial impact	Increase in operating costs

• **Risk 003** - Increasing severity of typhoons, floods, and extreme events

Impact scenario:

Increasing severity of extreme weather causes weather conditions such as typhoons to occur at stronger intensities, which results in prolonged floods and power outages that affect factory operations. Bad weather has the potential to disrupt production activities, reduce capacity, damage equipment, hinder transportation, disrupt raw material supply, decrease revenue, and increase costs.

Risk impact assessment	1. Delayed delivery: Extreme weathers affect factory operations and cause disruptions to production activities, raw materials supply, and transportation. Delivery may be delayed by several days to one week. 2. Impacts to the upstream/downstream: Extreme weather affects the number of parts delivered by suppliers and causes Kaori to underdeliver and delay the shipment of goods to customers. Customers' production activities may be halted as a result.
Evaluation of financial impact	Increased operating costs, reduced revenue, loss of credibility

List of identified climate change opportunities

Opportunity ranking	Opportunity No.	Opportunity category	Opportunity factor	Estimated time of occurrence
1	001	Opportunities - Markets	Entry into new markets	Short-term
2	002	Opportunities - Products and services	Development and expansion of low-carbon products and services	Medium-term
3	003	Opportunities - Products and services	Changes in consumers' preferences	Short-term

• **Opportunity 001**- Entry into new markets

Impact scenario:

The need to meet energy and carbon reduction requirements presents the Company with exposure to new markets and different customers, such as the application of fuel cells on ships, hydrogen generation and energy storage for thermal reactors, and recycling of residual hydrogen for power generation. Kaori will actively explore the potential of the new markets and expand the range of products offered as well as customers served for improved revenue and reputation.

Opportunity impact assessment	1. Access to new opportunities: In light of the carbon reduction trends around the world, Kaori will engage customers in greater depth to expand the applications of plate heat exchangers, such as in heat pumps. Exposure to new customers and new markets offers the potential for increased revenue and improved reputation. 2. Entry into the hydrogen power market: Kaori invests persistently into the development of hydrogen power products and has been assisting customers with their entry into the hydrogen power market. In light of customers' needs for hydrogen power products, the Company has assigned its Fuel Cell Business to work with customers on the development of production procedures for SOECs, hydrogen power solutions, and fuel cells for ships, and to make samples as deemed necessary. Given the significant increase in shipments and revenue, Kaori is optimistic about the prospect of hydrogen power. 3. Development of immersion cooling modules/systems: As servers/data centers draw more power, liquid cooling presents a viable solution over the long term. Kaori's immersion cooling modules/systems offer the potential to increase energy efficiency, and their persistent development efforts have increased the level of sophistication of the products, bringing them closer to mass production, which will benefit new markets and customers.
Financial impact assessment	Increased revenue and new collaborative opportunities

• **Opportunity 002** - Development and expansion of low-carbon products and services

Impact scenario:

The Company continues to expand its low-carbon product lines to include new products such as SOFCs, carbon capture solutions, and new fuel cells in line with global carbon reduction trends. This additional offering of low-carbon products will improve market competitiveness, increase market share, and raise revenue in the future.

Opportunity impact assessment	1. Exploration of low-carbon opportunities: Kaori's heat exchanger and fuel cell businesses have begun introducing low-carbon products to the market, whereas other businesses are also actively developing new products and new green solutions for customers. 2. Development of low-carbon technology: Introducing green design into production procedures and technologies helps lower carbon footprints and increase market competitiveness. 3. New investment opportunities: Some of the hydrogen power technologies have matured and are ready for mass production. Given their high relevance to green energy and international trends, these technologies are very likely to attract capital from the banking sector and government agencies.
Financial impact assessment	Cost reduction, increased revenue, and attraction of capital

• **Opportunity 003** - Changes in consumers' preferences

Impact scenario:

The escalating energy crisis and carbon reduction requirements have increased consumers' preference for energy conservation products, such as heat pumps.

This change in market trend and consumers' preference increases demand for the Company's products, which ultimately contributes to revenue and business growth.

Opportunity impact assessment	Increased product demand: Carbon reduction trends around the world have turned the market's attention to energy conservation solutions. Kaori is in a good position to capitalize on the increasing demand due to the energy and carbon reduction potential of the products offered and due to the early market advantage it has secured to date.
Financial impact assessment	Increased revenue

The types of climate change risks, potential operational impacts, and adaptation methods are as follows:

	Risk Type	Potential operational impacts	Adaptation methods
Substantial risks	Floods, typhoons, sewage discharge	• Affect production capacity, increase in operating costs, and decrease in revenue • Unable or interrupted delivery, deducted by customer for non-delivery as scheduled • Fines for violation of laws and regulations	• Establish and improve water resource regulation • Increase water storage capacity to support 3-5 days (3 days during severe drought) • Water tankers to support plants experiencing water shortages • Inspect process equipment at each plant regularly • Wastewater management policy complies with environmental regulations
	Drought or water shortages, power outages, water supply interruptions, power outage	• Fines for violation of laws and regulations	• Water tankers to support plants experiencing water shortages • IT systems are supported by an Uninterruptible Power Supply (UPS) • Generators are automatically activated to supply emergency power for fire safety needs
	Rising temperatures	• Increased electricity consumption leads to an increase in GHG emissions	• Promote energy-saving practices and measures; replace lights with energy-efficient bulbs
Transition risk	Emissions control	• Increase in operating costs • Increase in emissions	• Replacement of outdated and high-energy-consuming equipment • Evaluate the production process to monitor and control gas emissions
	Green product Distributed production	• Develop trend-aligned green products and diversify production locations in response to customer concerns about earthquake and geopolitical risks.	• ESG Committee's decision-making to develop green products • Strengthen the implementation of green processes with energy-saving and water-conserving facilities

6.3 Response Strategies to Climate Change Risks and Opportunities

Risk Response Strategies

- Response strategies for the cost of transitioning to low-carbon technology:
 - Diversity of suppliers:
Kaori maintains relationships with several suppliers to reduce uncertainties associated with the cost of and access to low-carbon materials.
 - Acquisition of green loans/financing:
Kaori will negotiate with banks and source green financing at preferential rates to lower costs.
 - Cover risky businesses with consistent product revenue:
If Kaori's low-carbon products fail, other departments that generate consistent revenue from OEM services, such as the Fuel Cell Business, will try to increase revenue in an attempt to cover the potential loss of revenue associated with transition risks.
- Response strategies to changes in domestic/foreign regulations:
 - Monitoring of regulations and trends:
A dedicated team will be assembled to keep track of new product regulations and trends on a regular basis. Regular training will be organized to discuss current trends and to evaluate the needs for product re-modification and re-certification.
 - Introduction of energy-saving equipment:
A comprehensive energy management system will be developed to monitor equipment energy efficiency, so as to facilitate the replacement of energy-intensive equipment. Additional investments will also be made for the installation of green power generation and storage equipment at plant sites and offices. Furthermore, the Company will introduce automated production equipment as a way to improve production and energy efficiency, which in turn will reduce the frequency of equipment renewal and allow digital solutions to be used for the optimization of production procedures.
 - Termination of high-carbon emission production processes and services:
In the first quarter of 2023, two sets of high energy-consuming brazing processing production equipment were taken out of operation.
- Response and strategy to increasing severity of typhoons, floods, and extreme events:
 - Reducing the risk of supply chain disruption:
Kaori engages a diversified group of suppliers to secure the sources of its raw materials and the consistency of supply. Negotiations are made to have suppliers increase the level of inventory and turnover and store inventory near customers' locations to minimize the risk of transport disruption.
 - Compensating production capacity with efficiency:
If work is suspended due to typhoons, Kaori will evaluate the extent of the delay and ask suppliers to increase production efficiency to make up for capacity shortfall, thereby averting production halt due to supply disruption.

Cost of Risk Response

1. Increased operating costs
2. Adjustment to capital expenditure and capital allocation

Execution Strategies for Opportunities

- Execution strategies for entry into new markets:
 - Development of exclusive products:
Exclusive products will be developed for heat pumps to capitalize on the current market trend and increase market share, whereas exclusive heat exchangers for air dryers will be developed to expand product lines and engage customers in broader, more frequent interactions.
 - Development of hydrogen power:
Kaori continues to develop hydrogen power products and engage technology partners in various innovations to bring technologies to broader applications, thereby satisfying the needs of customers and markets.
 - Ongoing development of immersion cooling modules/systems:
Kaori continues to make modular designs and obtain technological certification for its liquid cooling and immersion products, while at the same time maintaining the flexibility needed to customize products according to the needs of different markets. By accumulating data on product design, the Company aims to stay competitive in the market.
- Execution strategies for development and expansion of low-carbon products and services:
 - Developing products with low carbon footprints:
Kaori will improve production procedures by incorporating green designs such as the use of low-carbon materials, designs with low material requirements, adoption of product recycling mechanisms, reuse of raw materials or parts, and adoption of low-carbon transport and packaging materials to lower product carbon footprints.
 - Development of new low-carbon solutions:
Hydrogen power technology will be incorporated into carbon neutral solutions and new forms of fuel will be developed to capitalize on new opportunities associated with climate mediation.
 - Investment into the circular economy:
Technologies relating to the circular economy, such as treatment of waste organic solvents and reuse of waste/residual hydrogen from production activities, will be developed in the future.
- Execution strategies for changes in consumers' preferences:
 - Establishment of marketing plans:
Plans will be made to have business units engage existing as well as new customers on a regular basis to ensure that product features do satisfy customers' requirements and are adjusted at appropriate times. Attention will also be directed toward exploring new markets and customers, such as tier-A customers in Europe.
 - Consistent supply in response to the market's needs:
Kaori will increase the number of stamped plate and stainless steel suppliers for capacity expansion. An ERP system will be used to monitor all stages of the production process for improved product quality and delivery timing.

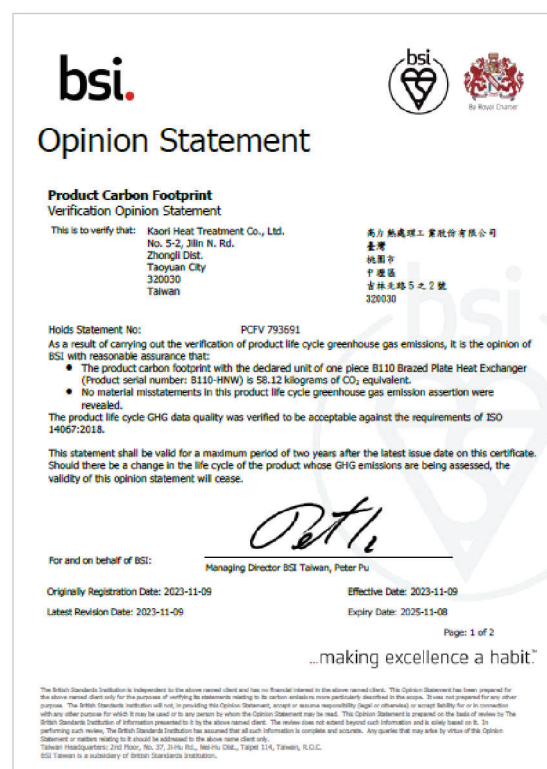
Cost of Opportunity Response

1. Increased operating costs
2. Adjustment to capital expenditure and capital allocation

Goals and Indicators

Kaori has implemented the ISO 14064-1:2018 Greenhouse Gas Inventory Standard for two consecutive years and has obtained third-party verification certificates. The inventory boundary covers all plants in Taiwan. The Company plans to conduct annual inventories to monitor emission levels and trends. For details on Kaori's greenhouse gas emissions over the past two years, please refer to Section 6.4.2 Greenhouse Gas Management. In 2024, the inventory process for the Ningbo subsidiary in China was completed, and the Company has now obtained a full picture of the Group's overall greenhouse gas emissions, enabling the review of emission volumes and the setting of short-, medium-, and long-term carbon reduction targets.

In 2023, Kaori completed its first product carbon footprint inventory verification under ISO 14067:2018 (as shown in the image on the right). In 2024, an additional 12 product carbon footprints were completed, allowing the Company to effectively monitor and manage emissions across all stages of the product life cycle. This initiative responds to growing market and international demands for carbon reduction. Kaori also plans to continue investing in R&D personnel and funding to develop lower-carbon products and emerging technologies, progressively increasing the share of low-carbon products in its portfolio to expand into new markets and enhance its competitiveness.



6.4 Environmental and Energy Management

Material topic

Management Approach

Energy management policy Regulatory compliance and development of renewable energy

Greenhouse gas management policy Energy and waste reduction, pollution prevention, and ongoing improvements

Goal Effectively monitor and manage energy consumption and GHG emissions

Commitment Implement due diligence and early warning communication methods to implement the Company's energy management, energy conservation, and carbon reduction measures to reduce the financial impact of climate change on the environment

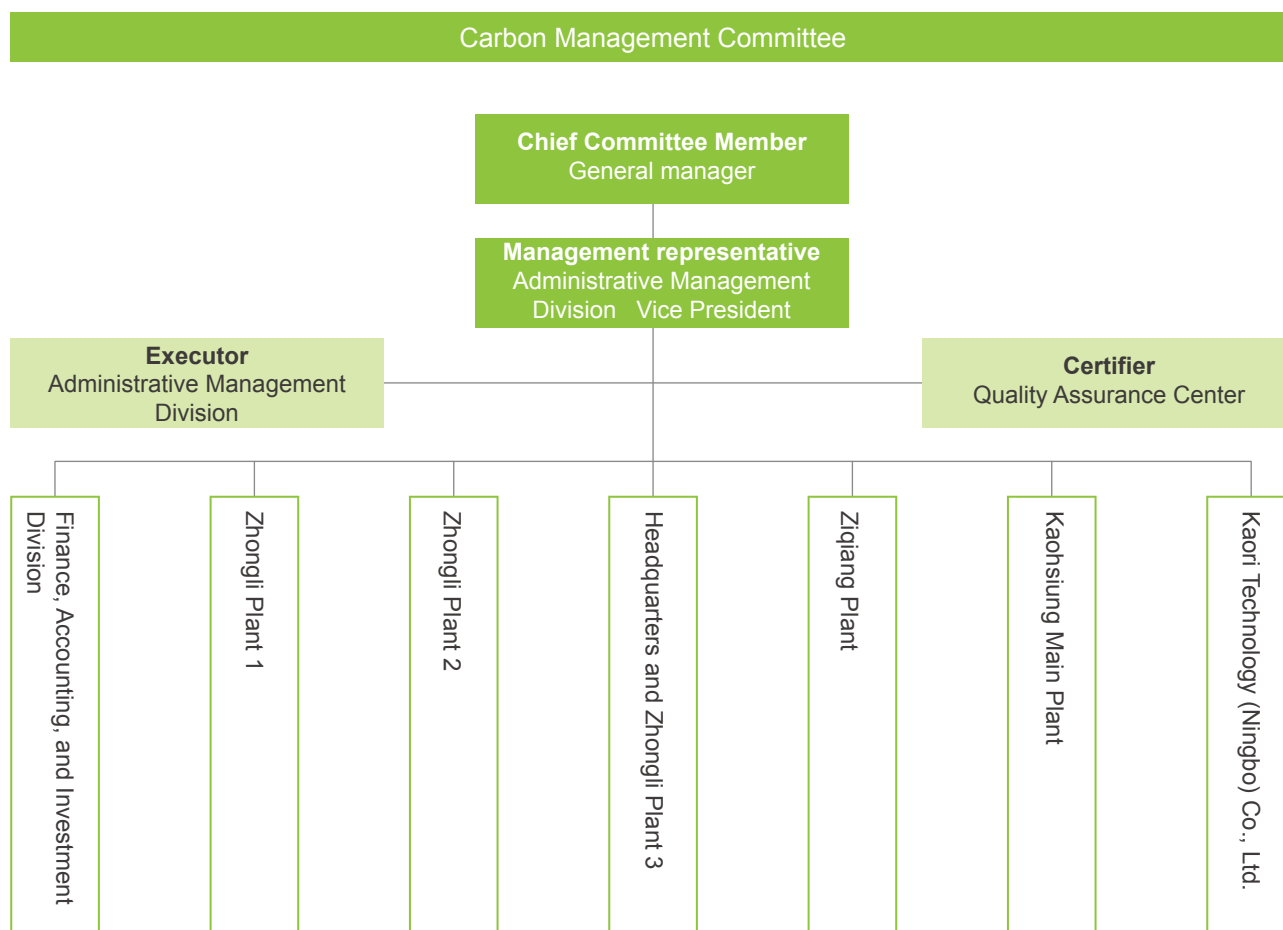
Measures

1. Passed the "ISO 14001:2015 Environmental Management System" certification to effectively reduce electricity consumption and align with government policies to invest in green electricity
2. Passed the ISO 14064-1:2018 Greenhouse Gas Inventory verification, established a "Carbon Management Committee," and implemented the "Energy Saving and Carbon Reduction Management Procedures" to effectively manage energy



Energy and GHG management

Climate change has emerged to become one of the most critical issues in the 21st century. Extreme weather, floods, and droughts in recent years have prompted government agencies, businesses, and private organizations to undertake more active mitigations of the risks. Meanwhile, Kaori contributes its part to environmental protection and social values by enforcing energy management throughout its operations and by investing into the research and development of new materials and production procedures. A Carbon Management Committee has also been assembled to oversee GHG reduction, energy/resource conservation, water conservation, waste recycling, and mitigation of environmental impact. At the same time, Kaori continues to invest into environmental protection facilities and incorporate green management and energy conservation practices into business activities for sustainable growth.



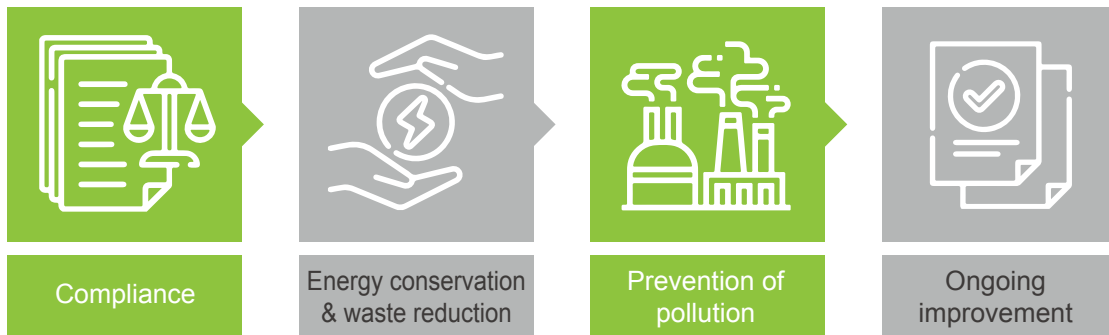
6.4.1 Environmental Management and Energy Conservation

Kaori (Kaohsiung Benzhou Plant) passed certification for ISO 14001:2015 Environmental Management System in 2019. From greenhouse gases, air pollution, and effluent discharge to waste treatment, Kaori is fully committed to making improvements and minimizing environmental impact. As a result, no major violations of environmental regulations have occurred in the year of the report.

Through the introduction of ISO 14001:2015 Environmental Management System, Kaori has been able to implement environmental management policies along with effective management processes at plant sites to enforce environmental compliance, order, safety, training, and so on to lessen the impact of organizational activities on the environment, while at the same time ensuring the safety of products and services offered as well as employees' health and safety at work.

In the early stages of ISO 14001:2015 adoption, Kaori requested a series of reviews to ensure compliance with environmental protection laws (including air, water, waste, soil, and noise). After making improvements in accordance with the opinions of the Environmental Protection Bureau, Kaohsiung City Government, the Company was deemed to have fully complied with legal requirements.

Environmental Policy



- Execution of Environmental Tests, Methods of Environmental Risk Assessment, and Outcomes
 1. Drinking fountains in plant areas are tested for quality every 3 months
 2. Kaori reports effluent volume to Benzhou Service Center every 6 months, and engages a certified environmental protection service provider to conduct tests
 3. Effluent values and reporting
 4. The effluents meter is calibrated (by certified service providers) on a regular basis each year

In 2023 and 2024, all the above-mentioned items complied with regulations and are being continuously implemented.

Energy Management and Goals

- Energy management

The Company introduces new energy conservation measures on a yearly basis, such as purchasing energy-efficient models, replacing outdated machinery, and optimizing production schedules. Kaori draws on the wisdom of many to achieve energy and carbon reduction goals. In the future, more attention will be directed toward improving production procedures and reducing energy consumption and promoting Kaori as a green, sustainable business. Energy intensity was lowered by 13.71% in 2024 compared to 2023.

Energy Usage

Kaori persistently monitors the energy consumption of its equipment and makes appropriate adjustments to increase energy efficiency, reduce waste, and lower energy consumption. Renewable Energy Plan: The Kaohsiung Benzhou Plant has installed a 744.51 kW commercial rooftop solar power system, which became operational in September 2022. In 2024, the total electricity generated by the system reached 1,014,070.5 kWh. In the fourth quarter of the same year, the Company evaluated the feasibility of installing an additional 472.05 kW commercial rooftop solar power system at Zhongli Plant 3 and the Ziqiang Plant. The installation is expected to be completed and operational in 2025, further expanding the Company's renewable energy capacity. Additionally, we will gradually phase out diesel-based forklifts and is currently evaluating the feasibility of using electric forklifts as a way to reduce carbon emissions and air pollution to implement sound energy management.

• Energy Efficiency and Energy Intensity Performance Over the Past Three Years

Year	2022	2023	2024
Energy intensity (GJ/NTD million)	20.60	15.17	13.09
Energy efficiency value (NTD/GJ)	38,922.50	65,919.63	76,408.62

Types of Energy		Year	2022	2023	2024
Fuel Purchased for Company Vehicles (kL)	Gasoline		27.9818	35.2504	33.3975
	Diesel		11.9468	11.6922	12.5457
Fuel Purchased for Stationary Sources (kL)	Diesel		0.5487	0.2200	0.6703
Natural Gas (m ³)			30.2660	1.2600	0.0000
Liquefied Petroleum Gas (kL)			0.2080	0.0960	1.0835
Purchased Electricity (kWh)			14,698,935.0000	17,677,480.0000	14,113,334.1200
Total Energy Consumption (GJ)			55,298.4686	65,625.3679	52,389.3834

Descriptions:

- Types of Energy: Gasoline, diesel, natural gas, liquefied petroleum gas (LPG), and purchased electricity
- Calorific Value Calculation: The calorific values for 2022 and 2023 were based on the "Energy Product Unit Calorific Value Table" published by the Bureau of Energy
In 2024, the calorific values for gasoline, diesel, and natural gas were calculated based on the standards announced by the Ministry of Environment, while those for liquefied petroleum gas and purchased electricity were based on the "Energy Product Unit Calorific Value Table" published by the Bureau of Energy
- Reporting Boundary: 2022: Zhongli Plant 1, Zhongli Plant 2, Zhongli Plant 3, Kaohsiung Plant
2023 and 2024: Zhongli Plant 1, Zhongli Plant 2, Zhongli Plant 3, Kaohsiung Plant, Ziqiang Plant, Kaori Technology (Ningbo) Co., Ltd.
- Annual Revenue in Financial Reports: 2022: Standalone revenue of NTD 2,684 million.
2023: Consolidated revenue of NTD 4,326 million.
2024: Consolidated revenue of NTD 4,003 million.

• 2024 Kaohsiung Plant Management Goals and Achievements:

- 1% energy conservation:
The Company's vacuum furnace capacity enhancement project aims to increase the production capacity of each furnace by at least 50%, which has the potential to reduce excess vacuum furnace cycles and operating time by at least 50%, thereby lowering the cost of electricity and the volume of energy used in production.
- Saving of energy in lighting:
Stair areas and motorcycle parking areas are installed with sensor tube lights; plant workers turn off lights during lunch hours and break times.
- Reduced waste by 1%:
Kaori recycles and reuses 100% of its protective materials and containers.
- An environmental goal was set to reduce the total usage of gasoline and diesel by 5% compared to the previous year, and the target was fully achieved in 2024.

Energy usage	Unit	2022	2023	2024	YoY
Gasoline and diesel	Kiloliter (kL)	13.752	13.867	11.515	-16.98%
	Gigajoule (GJ)	491.427	494.375	410.826	

Energy Conservation Targets

Short-term (within 1 to 2 years)	- Replace diesel forklifts with electric forklifts - Replace mercury vapor lamps with LED lights at the Zhongli Plant 1 - Replace conventional air compressors with variable-frequency air compressors at the Zhongli Plant 1 - Replace air conditioners with variable-frequency models for heat pumps at the Zhongli Plant 2
Medium-term (3 to 5 years)	- Progressively replace 7.5-horse power reciprocating air compressors with energy-saving, variable-frequency air compressors at plant sites - Replace air conditioners with variable-frequency models at plant sites - Implementation of solar power system
Long-term (over 5 years)	Implementation of energy storage systems

Progress of Energy Conservation and Improvement Solutions in 2024

Kaori is actively engaged in energy-saving and carbon reduction initiatives, consistently promoting projects focused on electricity conservation, energy efficiency, and carbon reduction. In 2024, a total of three energy-saving measures were implemented, resulting in electricity savings of 528,692 kWh (equivalent to 1,903,291.2 MJ), with a financial benefit of NTD 2,533,148.

Item No.	Energy Saving Measures	Execution Outcome	Before improvement	After improvement	Power saved (MJ)	Energy Conservation Benefits (NTD)
I	Improvement of vacuum furnace scheduling	Zhongli Plant 1 - Brazing Production Line	16 units produced per furnace	24 units produced per furnace - Total power saved: 16,042 kWh	57,751.2 MJ	NT\$ 75,717
II	Improving Output of the Degreasing and Cleaning Process	- Location: Zhongli Plant 2 - Equipment: Water-Based Degreasing Tank - Practices: Redesigned the placement structure of the degreasing tank baskets to increase loading capacity	The original basket design accommodated four layers of degreasing trays	- It was modified to accommodate six layers of degreasing trays - Total power saved: 12,650 kWh	45,540 MJ	NT\$ 57,431
III	Energy Efficiency Improvement of the Vacuum Furnace Water System	- Location: Kaohsiung Plant 2 - Equipment: Cooling Tower/New Water System for Vacuum Furnace - Practices: Uses the water tank temperature to control the start and stop of both the internal and external water pumps, as well as the cooling tower fan.	Annual Power Consumption Before Improvement 792,000 kWh	Total power saved: 500,000 kWh	1,800,000 MJ	NT\$ 2,400,000

Note: Data sourced from energy-saving declaration records.

Power Conservation Rate by Plant

All plant sites comply with the laws of the Bureau of Energy, Ministry of Economic Affairs. As a major energy user that Taiwan Power Company has signed a contract with to supply at least 800 kW of power, the Company reports annual energy performance and improvement plans in accordance with Article 9 of the Energy Administration Act. The Company has set goals to achieve an "annual power conservation rate" or "average annual power conservation rate" of more than 1%. The Zhongli Plant 2 and Kaohsiung Benzhou Plant have appointed dedicated energy management officers to enforce energy conservation plans and achieve an average annual power conservation rate of more than 1%.

Plant/Year	Power conservation rate 2022 (%)	Power conservation rate 2023 (%)	Power conservation rate 2024 (%)	Average power conservation rate 2015 - 2024 (%)
Zhongli Plant 1	0.17	6.08	0.76	2.33
Zhongli Plant 2	3.03	1.42	0.54	1.68
Kaohsiung Plant	3.05	6.19	8.18	4.32

6.4.2 GHG management

Since 2021, Kaori has been implementing the ISO 14064-1:2018 greenhouse gas inventory standard. For the third consecutive year, Kaori has passed third-party inspection and verification with a 100% achievement rate. Furthermore, the subsidiary in Ningbo, China, completed its inventory and verification process in 2024, following the same procedures as the parent company.

- 2024 greenhouse gas inventory operation status

The inventory is conducted in accordance with the ISO 14064-1:2018 Greenhouse Gas Inventory Standard. The boundary scope covers all factories and subsidiaries in Taiwan, with a total of six sites. The internal verification was completed from April 23 to April 25, 2025, and the external verification will be completed in the third quarter of the same year. Driven by the internal Carbon Management Committee, preliminary calculations based on collected data show that total Scope 1 and Scope 2 emissions in 2024 amounted to 7,163.4911 tCO₂e, representing a 15.14% reduction in carbon intensity compared to 2023.

Unit: tCO₂e

Category\Year	2022		2023		2024 (Note)	
Scope 1 (A)	292.4936	1.10%	271.0538	0.95%	265.9905	1.49%
Scope 2 (B)	7,275.9728	27.32%	8,851.4510	31.12%	6,897.5006	38.57%
Scope 3	19,059.0917	71.58%	19,319.4109	67.93%	10,718.3007	59.94%
Total volume	26,627.5581	100.0%	28,441.9157	100%	17,881.7918	100%
Annual revenue (D)	2,684		4,326		4,003	
Greenhouse Gas Emission Intensity (A+ B) / D	2.82		2.11		1.79	

Restatement of Greenhouse Gas Information

The Company has restated previously disclosed greenhouse gas emissions data for 2022 and 2023. The primary reason for this restatement is that the verification process for each year was completed in the third quarter, requiring adjustments based on the final verification results. The restated data for 2022 and 2023 have been revised in accordance with the latest methodologies and standards, such as the GHG Protocol and ISO 14064-1. The updated information has been simultaneously incorporated into relevant reports and internal management systems to ensure data accuracy and consistency.

Note: 1. In accordance with ISO 14064-1:2018, the internal verification of the 2024 greenhouse gas inventory was completed from April 23 to April 25, 2025. Third-party external verification is scheduled for the third quarter. Unit of measurement (D) is defined as revenue (NTD million) in the current year.

2. Inventory Boundary: 2022: Headquarters and Zhongli Plant 3, Zhongli Plant 1, Zhongli Plant 2, Kaohsiung Main Plant
2023 and 2024: Headquarters and Zhongli Plant 3, Zhongli Plant 1, Zhongli Plant 2, Kaohsiung Main Plant, Ziqiang Plant, Kaori Technology (Ningbo) Co., Ltd. (a group subsidiary)

3. Annual Revenue: 2022: Standalone revenue of NTD 2,684 million. 2023: Consolidated revenue of NTD 4,326 million. 2024: Consolidated revenue of NTD 4,003 million.



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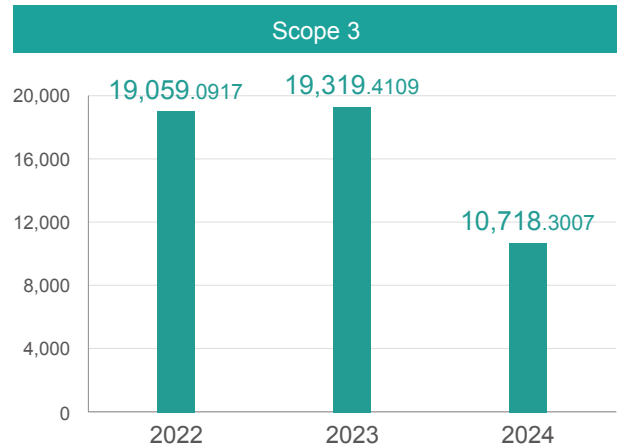
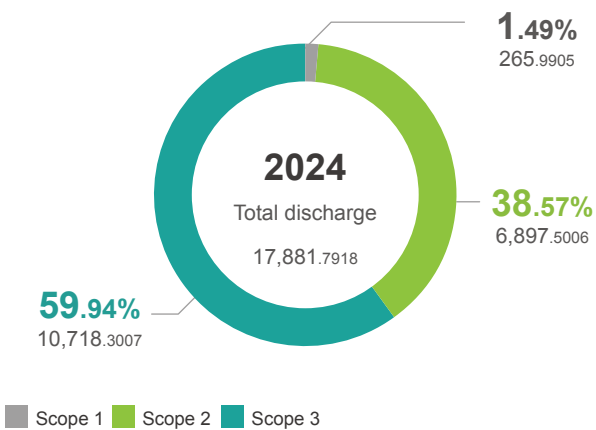
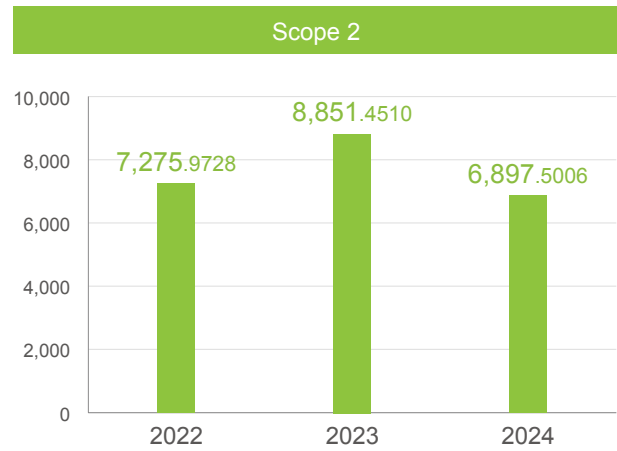
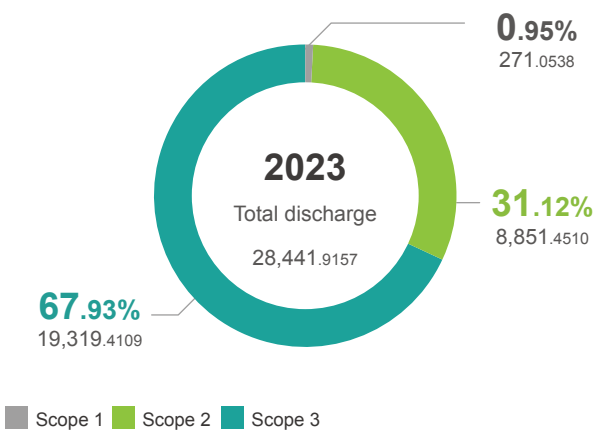
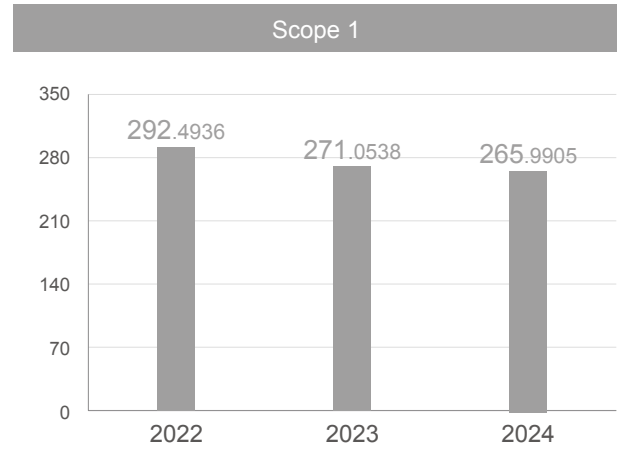
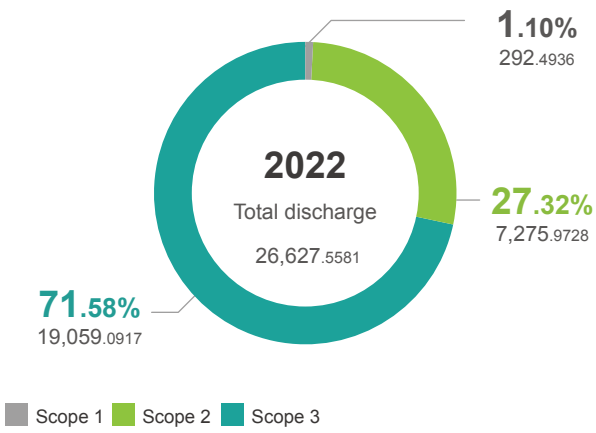
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Sustainable
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Carbon Management Planning in Response to International and Domestic Carbon Tariffs

International

The European Union's Carbon Border Adjustment Mechanism (CBAM) entered into a transitional phase from October 2023 through December 31, 2025, and is officially scheduled to take effect on January 1, 2026.

Kaori completed its first product carbon footprint inventory and verification under ISO 14067:2018 in 2023, and added 12 more product carbon footprints in 2024. Based on the carbon emissions across the product life cycle, the Company will establish carbon footprint reduction plans to comply with CBAM requirements.

Domestic

On August 29, 2024, the Ministry of Environment announced the "Carbon Fee Collection Regulations," "Voluntary Emissions Reduction Plan Management Regulations," and the "Designated Greenhouse Gas Reduction Targets for Entities Subject to Carbon Fee Collection." In the initial phase, the carbon fee applies to entities in the power supply, gas supply, and manufacturing sectors with annual emissions of 25,000 metric tons of CO₂e or more. Starting from the year following the implementation of the carbon fee, the payable amount will be calculated annually based on the previous year's greenhouse gas emissions and must be submitted by the end of May each year. In 2024, Kaori's total Scope 1 and Scope 2 emissions amounted to 7,163.4911 tCO₂e, which falls below the domestic carbon fee threshold.

- Plans for Green and Renewable Energy Sources

The net zero movement has become the world's most important issue today, and all leading businesses with strong sustainability awareness are starting to adopt green energy as the first step. Renewable Energy Plan: Kaori's Kaohsiung Benzhou Plant has installed a 744.51 kW commercial rooftop solar power system, which became operational in September 2022. Over a 20-year period, the system is expected to reduce carbon emissions by approximately 9,390 metric tons of CO₂, which is equivalent to the carbon absorption capacity of about 23 Daan Forest Parks. In 2024, the system generated a total of 1,014,070.5 kWh of electricity. In the fourth quarter of the same year, the Company assessed the feasibility of installing an additional 472.05 kW commercial rooftop solar power system at Zhongli Plant 3 and the Ziqiang Plant.

The installation is scheduled for completion and commercial operation in 2025, further increasing the share of renewable energy in the plants' overall electricity consumption.



Air Pollution Management

Kaori did not emit any nitrogen oxide (NO_x), sulfur oxide (SO_x), or other legally regulated hazardous gases.

6.5 Water resource management

Kaori has developed an environmental management system along with water resource management practices based on ISO 14001. Through data monitoring, the Company keeps track of water used as well as the water resource management practices adopted at various plant sites on a daily basis. Any abnormal change in water volume is met with appropriate inspection and response. Meanwhile, Kaori organizes campaigns from time to time to promote employees' awareness of the conservation and use of water.

All major operating sites draw water entirely from the municipal water supply system (i.e., tap water). Most of the water drawn is used for employees' living activities and kitchen equipment, and any effluents generated from living activities are either treated using appropriate treatment facilities or discharged into the municipal water treatment system, and therefore should have no significant impact on the local water body. Furthermore, Kaohsiung Benzhou Plant has installed its own water treatment facilities to treat wastewater in a legal manner. No incidents of illegal pollution occurred in 2023 and 2024, and the Company's business activities had no significant impact on water sources.

Risk Type	Category	Potential operational impacts	Adaptation methods
Water Resource Risks	Drought or water shortage Flood risk Discharge of untreated wastewater	- Affect production capacity, increase in operating costs, and decrease in revenue - Unscheduled or interrupted delivery	- Establish and improve water resource regulation - Increase water storage capacity to support 3-5 days (3 days during severe drought) - Water tankers to support plants experiencing water shortages - Inspect process equipment at each plant regularly - Wastewater management policy complies with environmental regulations

Total water withdrawal:

The Company uses tap water without surface water or seawater.

Unit: million liters

Category	Year/Region	2023		2024	
		All locations	Locations prone to water stress	All locations	Locations prone to water stress
Water withdrawal by source	Surface water (total volume)	0	0	0	0
	Fresh water (total dissolved solids ≤ 1,000 mg/L)	0	0	0	0
	Other water sources (Total dissolved solids >1,000 mg/L)	0	0	0	0
	Water from third parties (total volume)	0	0	0	0
	Fresh water (total dissolved solids ≤ 1,000 mg/L)	32.67	0	28.33	0
	Other water sources (Total dissolved solids >1,000 mg/L)	0	0	0	0
Total water drawn	Surface water (total) + groundwater (total) + water from third parties (total)	32.67	0	28.33	0

Water Discharge

Unit: million liters

Category \ Year/Region		2023		2024	
		All locations	Locations prone to water stress	All locations	Locations prone to water stress
Water discharge by destination	Surface water	23.22	0	21.76	0
	Groundwater	0	0	0	0
	Seawater	0	0	0	0
	Water from third parties (total volume)	0	0	0	0
	Water from third parties supplied to other organizations	0	0	0	0
Total water discharge	Surface water + groundwater + seawater + water from third parties (total)	23.22	0	21.76	0
Water discharge by fresh water and others	Fresh water (total dissolved solids $\leq$ 1,000 mg/L)	23.22	0	21.76	0
	Other water sources (Total dissolved solids $>$ 1,000 mg/L)	0	0	0	0
Water discharge by level of treatment	Untreated	23.22	0	21.76	0
	Level 1 treatment	0	0	0	0
	Level 2 treatment	0	0	0	0
	Level 3 treatment	0	0	0	0

Water Consumption

Unit: million liters

Year		2023		2024	
Location		All locations	Locations prone to water stress	All locations	Locations prone to water stress
Total water consumption		9.449	N/A	6.57	N/A
Change in water storage		N/A	N/A	N/A	N/A

Note: The water consumption in the above table is for vacuum furnace cooling.



6.6 Waste management

Kaori observes the ISO 14001 standard and has created a dedicated unit to track the sources and volumes of waste. Adhering to the principles of maximizing resource use and minimizing waste generation, the Company promotes "Waste Management Measures." All departments are committed to minimizing waste volumes from production activities, increasing the life cycles of raw materials used, and promoting the circulation and reuse of resources and waste for total waste reduction. Kaori engages qualified service providers to dispose of waste and uses appropriate forms to audit waste handlers, thereby ensuring the appropriateness of waste treatment and that the waste generated does not pose a significant impact on the nearby environment.

Requirements for suppliers	Reusable packaging containers and non-reusable containers must be recyclable and reusable materials. Waste generated during the supply process must also be recyclable or declared as reusable waste items.
Production requirements	In the plant's production processes, materials are controlled at the source to avoid using raw materials and equipment materials that current environmental technologies cannot manage. Additionally, raw materials/waste from the production process are reviewed for potential recycling and reuse. Reduce the waste of necessary resources and increase recycling.
Requirements for employees	Environmental safety and health education and training are held for employees on their first day of employment to teach them how to classify waste, improve their environmental safety and health concepts and literacy, and enable them to independently classify recyclable waste. Each area maintains at least five categories of waste sorting categories, contributing to the planet's environmental sustainability and social responsibility.
Recycling requirements for waste disposal	Review the suitability of waste disposal channels every year and select waste disposal contractors with more environmentally friendly treatment methods, especially the legal disposal of hazardous waste, to avoid causing environmental impact. There were no violations of waste treatment laws in 2024.

Waste Reduction Measures

Kaori reduces the volume of waste by recycling waste iron, carton boxes, and waste glass and reusing waste pallets. Waste pallets are handed over to qualified service providers for reuse, thereby minimizing environmental impact. Upholding the principle of responsibility, Kaori duly reports how waste generated from plant sites is handled and retains complete documents to ensure that waste is properly treated.

1. Establishment of employee cafeterias and use of environment-friendly tableware
2. Total recycling of paper containers
3. Use of kitchen waste recycling bins
4. No hazardous waste; domestic wastes are disposed of in accordance with the law

Total Waste

Unit: tonnes

Waste composition \ Year. Disposal	2023			2024		
	Waste Generated	Waste Diverted From Disposal	Waste Directed to Disposal	Waste generated	Waste Diverted From Disposal	Waste Directed to Disposal
General Waste	91.369	0	91.369	92.83	0	92.83
Scrap - Waste stainless steel	3.568	3.568	0	0	0	0
Scrap - Waste black steel	97.365	97.365	0	126.1	126.1	0
Scrap - Waste INCO601	1.996	1.996	0	0.522	0.522	0
Scrap - Waste INCO625	15.8478	15.8478	0	19.497	19.497	0
Scrap - Waste HS230	0.004	0.004	0	0	0	0
Scrap - Waste INCO800	66.943	66.943	0	20.17	20.17	0
Scrap - Waste mix	0.175	0.175	0	1.262	1.262	0
Scrap - Waste inco600	4.3463	4.3463	0	0.171	0.171	0
Scrap - Waste sus446	1.65	1.65	0	0	0	0
Scrap - Swarf from machining	2.016	2.016	0	0	0	0
Scrap - Waste 304 + copper	58.173	58.173	0	56.387	56.387	0
Scrap - Waste 316 + copper	210.462	210.462	0	148.79	148.79	0
Scrap - Waste aluminum	0.923	0.923	0	0.136	0.136	0
Scrap - Waste copper	14.472	14.472	0	13.91	13.91	0
Scrap - Pure 304	55.445	55.445	0	75.509	75.509	0
Scrap - Pure 316	70.324	70.324	0	73.206	73.206	0
Scrap - Waste 304 swarf	112.833	112.833	0	112.571	112.571	0
Scrap - Waste 316 swarf	24.564	24.564	0	32.88	32.88	0
Waste INCO800+SUS316	0.05	0.05	0	0.011	0.011	0
Waste INCO800+625 Scrap	1.321	1.321	0	0.023	0.023	0
Waste ceramic INCO800+625	0.225	0.225	0	0	0	0
Waste ceramics + INCO625	0.373	0.373	0	0.868	0.868	0
Waste heat exchangers	20.413	20.413	0	21.309	21.309	0
Scrap nickel foil	0.427	0.427	0	0	0	0
Waste ceramics	0.052	0.052	0	0	0	0
Blade waste	0.03	0.03	0	0	0	0
Waste cables	0.303	0.303	0	0	0	0
Waste paper	11.959	11.959	0	14.21	14.21	0
Waste wooden materials (R-0701)	84.24	84.24	0	79.98	79.98	0
Waste oil mixture (D-1799)	15.66	15.66	0	10.86	10.86	0
Night soil (D-0104)	0	0	0	0	0	0
Waste plastic (R-0201)	11.06	11.06	0	42.03	42.03	0
Total waste	1,122.589	1,031.22	91.369	943.232	850.402	92.83

Note: The waste materials listed in the table above can be sold externally.

Waste diverted from disposal

Unit: tonnes

Waste composition		2023			2024		
		On-site	Off-site	Total volume	On-site	Off-site	Total volume
Hazardous waste	Preparation for reuse	0.00	0.00	0.00	0.00	0.00	0.00
	Recycling	0.00	0.00	0.00	0.00	0.00	0.00
	Other recovery	0.00	0.00	0.00	0.00	0.00	0.00
	Total volume	0.00	0.00	0.00	0.00	0.00	0.00
Non-hazardous waste	Preparation for reuse	0.00	0.00	0.00	0.00	0.00	0.00
	Recycling	0	1,031.22	1,031.22	0	850.402	850.402
	Other recovery	0	0	0	0	0	0
	Total volume	0	1,031.22	1,031.22	0	850.402	850.402

Waste directed to disposal

Unit: tonnes

Waste composition		2023			2024		
		On-site	Off-site	Total volume	On-site	Off-site	Total volume
Hazardous waste	Incineration (including recycling of energy sources)	0.00	0.00	0.00	0.00	0.00	0.00
	Incineration (excluding recycling of energy sources)	0.00	0.00	0.00	0.00	0.00	0.00
	Landfill	0.00	0.00	0.00	0.00	0.00	0.00
	Other methods of disposal	0.00	0.00	0.00	0.00	0.00	0.00
	Total volume	0.00	0.00	0.00	0.00	0.00	0.00
Non-hazardous waste	Incineration (including recycling of energy sources)	0.00	91.369	91.369	0.00	92.83	92.83
	Incineration (excluding recycling of energy sources)	0.00	0.00	0.00	0.00	0.00	0.00
	Landfill	0.00	0.00	0.00	0.00	0.00	0.00
	Other methods of disposal	0.00	0.00	0.00	0.00	0.00	0.00
	Total volume	0.00	91.369	91.369	0.00	92.83	92.83

