

Chapter 4

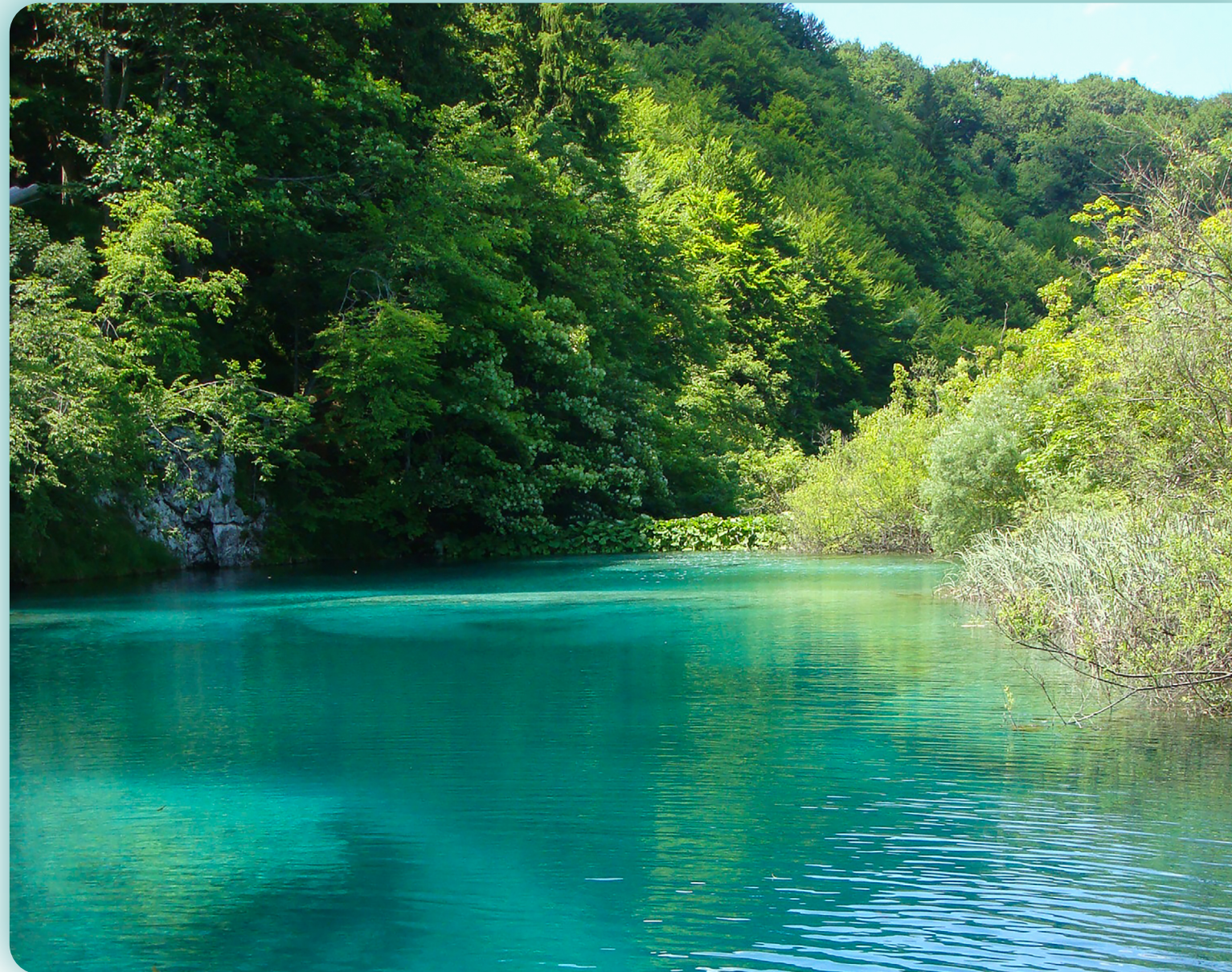
Environmental Sustainability and Climate Change

Operational Highlights

- ✓ Annual water-saving initiatives achieved a total water savings of 65,605 metric tons, representing a water-saving rate of 6.60%
- ✓ The water recovery rate was validated by the Foundation of Taiwan Industry Service at 91.4%
- ✓ Annual electricity saving rate reached 1.70% (the average annual electricity saving rate from 2015 to 2025 was 1.48%)
- ✓ Executed 4 energy-saving and carbon-reduction projects, generating a combined carbon reduction benefit of 1,922 metric tons of CO₂e, with a total investment amount of NT\$10.88 million
- ✓ As of the end of 2025, the cumulative grid-connected capacity of invested solar power stations reached 9MW

Material Topics in This Chapter

Water Resource Management
Air Pollution Control
Waste Management
Climate Change and Energy Management



To promote sustainable development, fulfill corporate social responsibility, and respond to cleaner production and green environmental protection movements, the Kaohsiung Plant will continuously improve the working environment, occupational safety, process safety, process waste reduction, water efficiency, and energy conservation, aiming to achieve the "Five Zero Goals" of "Zero Pollution, Zero Emission, Zero Accident, Zero Occupational Injury, and Zero Malfunction."



Environmental Management Targets and Action Plans

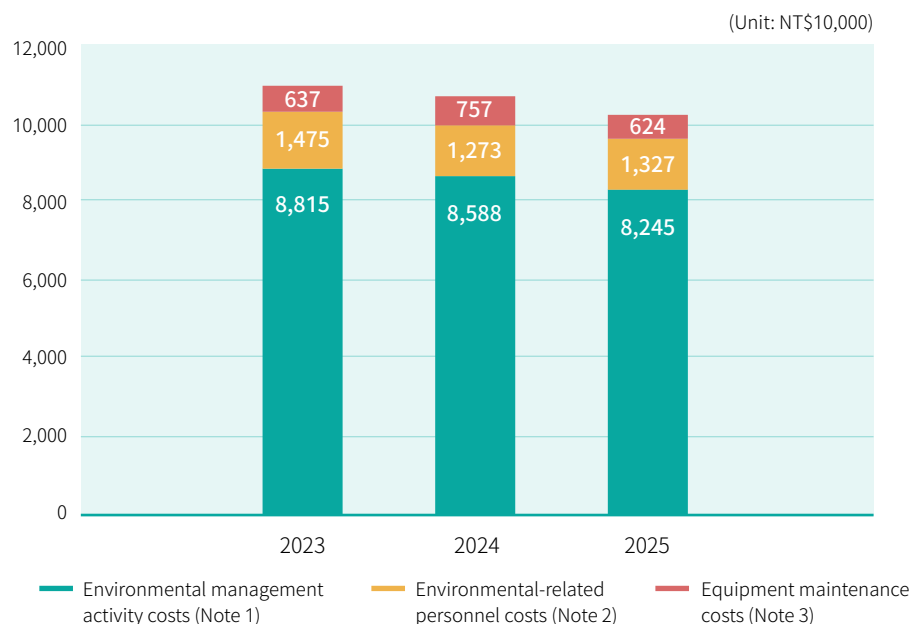
2025 Environmental Protection Targets and Action Plans

Environmental Policy	Zero Pollution	
	Target	Air Pollution Zero Pollution: VOCs equipment component leakage rate less than 0.5% Air Pollution Zero Pollution: Pump replacement to reduce VOCs dissipation into the atmosphere
	Program	1. Reduce equipment component VOCs dissipation (Production Department I) 2. Reduce annual VOCs leakage (Production Department II) 3. VOCs dissipation improvement plan (Production Department III) Added 1 Modifier pump J-220E to the EF-line.
	Performance	In 2025, the measured leakage rate for equipment components in Production Department I, Department II, and Department III was 0.03%. After replacing the Modifier pump, the emission factor was reduced from 0.00335 kg/hour to 0.00008 kg/hour. Operating 365 days a year, this reduces VOCs dissipation to the atmosphere by 292.76 kg.
	2026 Management Program	1. Reduce equipment component VOCs dissipation (Production Department I) 2. Reduce annual VOCs leakage (Production Department II) 3. Production Department III VOCs dissipation improvement plan (Production Department III) 2025 program completion progression rate: 63%. This project will be extended to 2026 for continued execution.

Environmental Protection Expenditures

USI's expenses for environmental management are categorized into environmental management activity costs, environmental-related personnel costs, and equipment maintenance costs. In 2025, the company continued to promote projects to reduce VOCs dissipation, recycle and reuse water resources, conserve energy, and implement carbon reduction measures. In 2025, total environmental expenditures were approximately NT\$101.96 million, a decrease of 4.1% compared to 2024. The primary difference was due to lower depreciation expenses for pollution control facilities in 2025.

Environmental Protection Expenditures in the Past Three Years



Note 1: Environmental management activity costs include expenses related to air pollution control, water pollution prevention, waste disposal, noise control, toxic and concerned chemical substance management, industrial safety improvements, fixed asset depreciation, and others (such as cleaning, weeding, etc.).

Note 2: Environmental-related personnel costs include personnel salaries and environmental protection training expenses.

Note 3: Equipment maintenance costs include environmental protection facility maintenance and equipment servicing fees.

GRI 2-25, 3-3

SDG 6

4.2 Water Resource Management



Impact Issues

Production interruption due to water shortages or rainstorms, water pollution, and water consumption fee levies



2025 Performance

1. Achieved a Grade B rating in CDP Water Security.
2. MRT condensate recovery optimization and detention pond rainwater recycling system generated an actual recycled water volume of 65,605 metric tons, representing a water-saving rate of 6.60%.
3. Promoted the plastic pellet recycling project, recovering 10.5 metric tons.



2026 Target

Wastewater treatment system, MRT condensate recovery optimization, and detention pond rainwater recycling system expected annual water savings: 52,500 metric tons/year, with an estimated water-saving rate of 5.36%.



Medium- and Long-Term Planning

Reduce water intake and consumption, improve water quality, and enhance water resource recycling and reuse

Water Resource Management

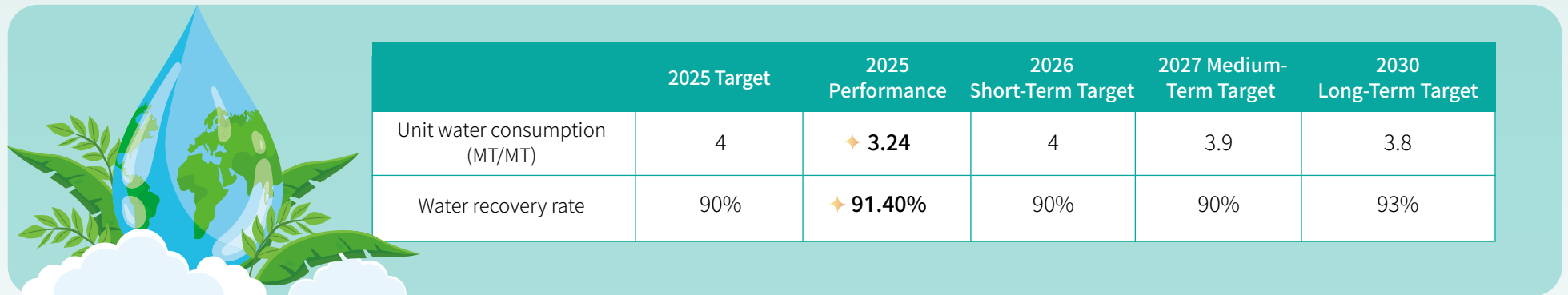
GRI 303-1:2018、303-3:2018、303-4:2018、303-5:2018

RT-CH-140a.3

Target and Management Unit

A circular economy is an industrial system designed to be restorative and regenerative. It replaces the concept of "end-of-life" with "restoration," shifting toward waste conversion and reuse to reduce waste generation. USI continuously promotes a circular economy, executing water conservation and emission reduction through optimization projects to recycle precious water resources. We set an annual performance target of "1% water saving," and the actual achieved water-saving rate for 2025 was 6.60%. The boundary for water resources and wastewater management data is the Kaohsiung Plant, with a 100% data coverage rate.

Water resource management is governed by the Technical Department, designated by the Kaohsiung Plant head. It reports to the Board of Directors regularly each year, setting reduction targets for Unit water consumption and water recycling rates.



Water Resources

Regarding water stress distribution, we refer to the [Aqueduct Water Risk Atlas developed by the World Resources Institute \(WRI\)](#) to understand the global water stress map by country. Our company defines areas with a water stress level exceeding 40% as water-stressed regions, which serves as a baseline for water management and risk response. Based on our queries, USI's primary water source is the Gaoping River Weir, which is located in a low-to-medium water stress region, with a water stress level of 10-20%.

According to the 2024 water resources statistics recently published in official statistical reports by the Water Resources Agency of the Ministry of Economic Affairs, Kaohsiung City's water consumption was 1,033,070 million liters, with domestic and public water use at 361,330 million liters, industrial water use at 264,000 million liters, and agricultural water use at 407,740 million liters. In 2025, the Total withdrawal of USI's Kaohsiung Plant was 927.735 million liters, representing approximately 0.09% of Kaohsiung City's total water consumption. The water source for USI's Kaohsiung Plant is utility tap water, primarily supplied by the Pingding Water Treatment Plant and Chengcing Lake Water Treatment Plant. It is applied to product manufacturing process water, equipment cooling water for manufacturing operations, boiler water, domestic water for factory colleagues, and other uses. The Total withdrawal in 2024 was 938.423 million liters, and the water intake in 2025 decreased by approximately 10.7 million liters compared to 2024. The estimated reason is that there was a long shutdown period in November 2025 to carry out replacements of leaking pipelines that are normally difficult to repair, leading to a significant reduction in subsequent water consumption.

2025 Water Intake, Water Discharge, and Water Consumption

GRI 303-3:2018 、 303-4:2018 、 303-5:2018

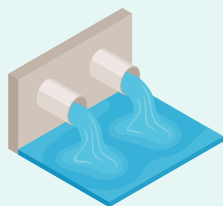
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Total withdrawal: 927.735 million liters
Low-to-medium water stress region
water stress level 10-20%

- Third-party water - Freshwater ($\leq 1,000$ mg/L Total Dissolved Solids, TDS): 917.783 million liters
- Surface water - Rainwater: 9.652 million liters
- Water tank truck volume: 0.3 million liters
- Water intake contains zero surface water, groundwater, seawater, or produced water

Note: Third-party water intake is calculated based on monthly meter readings from water meters (flow meters); rainwater intake statistics can be referenced from the "detention pond and tank area rainwater recycling" section under water recycling initiatives; water truck volume is compiled from vendors' water collection slips.



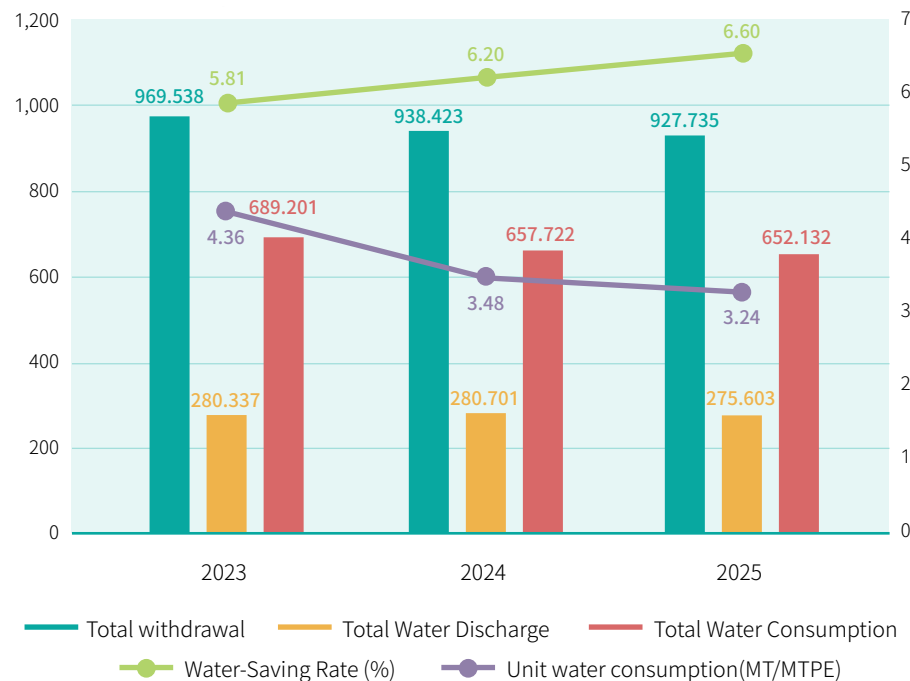
Total Water Discharge: 275.603 million liters
Ammonia Nitrogen Total Volume Control Zone

- Surface water - Freshwater ($\leq 1,000$ mg/L Total Dissolved Solids, TDS): 275.603 million liters
- Water discharge contains zero groundwater, seawater, or third-party water
- Ammonia nitrogen values for the upper and lower halves of the year were 0.07 mg/L and 0.40 mg/L, respectively, both far below the effluent standard (20 mg/L)

Note: Water discharge is calculated based on readings from the effluent discharge meter (flow meter).

Total Water Consumption = Total withdrawal - Total Water Discharge
= 652.132 million liters

Water Resource Data in the Past Three Years



Water Conservation and Water Recycling GRI 303-1:2018

With rising water demands, climate change impacts, and increasing pressure for sustainability, USI remains consistently attentive to water scarcity and endeavors to reduce its own water use or improve water recycling efficiency as a mitigation strategy.

USI established a water condition monitoring system in 2020 to track water supply at all times. Emergency responses during dry seasons include suspending non-essential water usage, intensifying pipeline and valve inspections, and decreasing cooling tower blowdown. In addition, backup storage in firefighting water tanks acts as a buffer, water tank trucks are purchased, and cooperation is aligned with the government's three-stage water restriction measures. Water improvement initiatives are actively promoted to reduce Total withdrawal year by year.

Water Resource Recovery Plan	Performance
Continuous wastewater monitoring and recovery	Continuously monitor the effluent water quality of the wastewater pool in the plant to improve wastewater treatment response capabilities and ensure the effluent meets regulatory standards. The effluent is treated by the recovery system and then supplied as make-up water for the cooling tower to reduce tap water consumption and process wastewater discharge. Calculation description: Based on the actual on-site pump meter readings, the total wastewater recovery in 2025 was 38,853 metric tons.
Rainwater recovery from detention basins and tank areas	Rainwater accumulated in existing detention basins and tank areas is planned to be piped to the cooling tower. The rainwater is filtered by a rainwater separator next to the cooling tower and provided as make-up water for the cooling tower. Calculation description: The project was completed in 2017 and started operations in 2018. The total rainwater catchment area of the plant is 3,500 square meters, and the tank dike area is 2,300 square meters. The annual rainfall in Kaohsiung City in 2025 was 1,849.0 mm (Note 2). The recovery rate is estimated at 90% (Note 3), projecting a recovered water volume of approximately 9,652 metric tons in 2025. Calculation description: $\\$1,849.0 \times (3,500 + 2,300) \div 1,000 \times 90\% = 9,652$ metric tons/year).
MRT steam condensate recovery	Steam condensate is recovered and reused as boiler feedwater to reduce tap water consumption, with an estimated annual recovery volume conservatively estimated at 17,100 metric tons. Calculation description: The steam condensate recovery volume is $2.4 \text{ metric tons/hour} \times 24 \text{ hours/day} \times 330 \text{ working days/year} \times 90\% \text{ recovery rate} = 17,107$ metric tons/year.

Note: 1. The total estimated recoverable and reusable water volume in 2025 is 65,605 metric tons, and the total water withdrawal is 927,735 metric tons. The percentage of recoverable and reusable water to the total water withdrawal is estimated to be 7.07%.

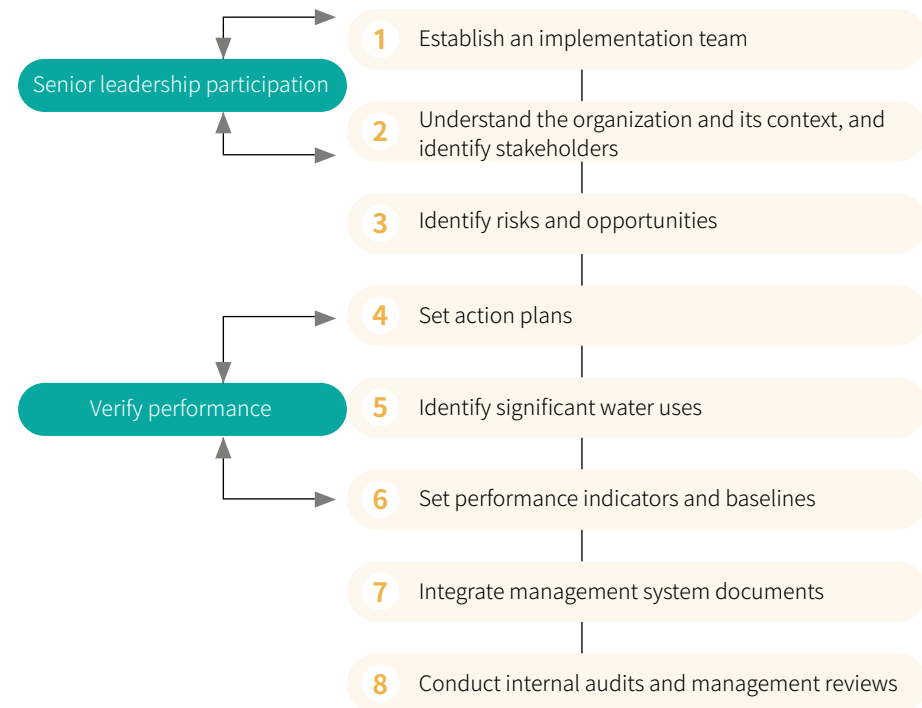
Note: 2. Source of annual rainfall data: Central Weather Administration, Ministry of Transportation and Communications.

Note: 3. MRT steam condensate, detention basin, and tank area rainwater recovery - due to potential losses from pumps, pipelines, and rainwater evaporation, the recovery volume is estimated at 90% of the calculated value.

Note: 4. MRT steam condensate recovery - taking into account the actual time required for equipment maintenance or repair, the annual working days are calculated based on 90% of the 365 days in a year (i.e., 330 days).

Water efficiency management GRI 303-1:2018

USI introduced the ISO 46001:2019 Water efficiency management systems in 2021 (certificate validity: 3/17/2022-5/17/2025). By auditing current water use conditions across the entire plant, water resource risks and opportunities are identified, planned, managed, and improved through systematic water management. This optimizes water demand management, effectively achieves water-saving and emission-reduction goals, enhances water resource utilization efficiency, and reduces costs.



- ✓ Continuously monitor wastewater system management in 2025 to reduce wastewater discharge and increase wastewater recovery.
- ✓ The actual increased recovery water volume was 38,853 metric tons, with a wastewater recovery rate of 12.36%.
- ✓ Calculation formula: $38,853 / (38,853 + 275,603) = 12.36\%$.
Additionally, the recovered rainwater volume from detention basins and tank areas was approximately 9,652 metric tons.
- ✓ The water saving rate was 6.60%.
- ✓ The estimated recovery water volume for 2026 is 52,500 metric tons, with an estimated water saving rate of 5.36%.

External verification of water recovery rate

In 2025, the Kaohsiung Plant commissioned the Foundation of Taiwan Industry Service to verify the plant-wide water recovery rate of the previous year (excluding internal cooling tower circulation, commonly known as R2). The verified recovery rate was 91.4% (see the verification statement for details), which is better than the industry range of 30% to 80%.

用水回收率查證聲明書

事實關係聲明：委託機構：多聯機機油淨化
公司名稱：台灣聯合化學品股份有限公司高雄廠 地址：高雄市中區武德街後里里340號
聯絡電話：07-7359908 ext327 聯絡電話：02-27844188
通訊地址：高雄市中區武德街後里里340號 通訊地址：台北市大安區復興南路198巷39弄14號1樓

查證結果摘要

茲證明本廠符合經濟部所定之「查證及改善用水回收率查證辦法」規定，查證範圍：高雄市中區武德街後里里340號，查證期間：自 113 年 1 月 1 日至 113 年 12 月 31 日，查證數據：用水回收率(不含冷卻水迴用循環量)：91.4%，查證意見：依據查證所執行之查證過程與程序，係根據經濟部之查證辦法規定予以準備，並公正地呈現取水量、查證材料重量數據及用水回收率計算相關資訊。

附件：查證報告書、查證事項查證機構證明：(但本聲明所載之查證數據依然有效)

查證機構：多聯機機油淨化

查證報告書日期：中華民國 114 年 9 月 24 日 查證報告書有效期：自 113 年 1 月 1 日至 114 年 12 月 31 日

本廠主要負責人：(簽名) 查證機構負責人：(簽名)

查證範圍：查證機構對本廠查證範圍所為之行為，具法律上責任，對其應負其執行管理之人員，應盡善盡責，並負法律上責任。

此聲明及附件(查證報告書)可能包含本廠之商業秘密或技術秘密，委託機構應負保密義務，不得將本廠之商業秘密或技術秘密洩漏予任何第三人，否則委託機構將依法追究其法律責任。

(一) 查證機構應遵守經濟部所定之「查證及改善用水回收率查證辦法」規定，並應遵守中央主管機關依法所為之行政處分及刑事處分。

(二) 查證機構應遵守經濟部所定之「查證及改善用水回收率查證辦法」規定，並應遵守中央主管機關依法所為之行政處分及刑事處分。

(三) 查證機構應遵守經濟部所定之「查證及改善用水回收率查證辦法」規定，並應遵守中央主管機關依法所為之行政處分及刑事處分。

此 證

查證人員簽名(所有查證事項均經查證人員簽名)：(簽名) 中華民國 114 年 12 月 8 日

查證機構：多聯機機油淨化

Wastewater management GRI 303-1:2018

The wastewater generated by the plant includes process wastewater and domestic sewage from employees. The generated wastewater is transported via pipelines to the wastewater treatment plant for internal processing. The wastewater treatment system consists of pre-treatment and primary physical-chemical processes, ensuring the effluent meets discharge standards through

screening, oil removal, sedimentation, chemical dosing, and a sludge treatment unit for solid-liquid separation.

To reduce the environmental impact of drainage and promote water resource recycling and reuse, in addition to complying with environmental regulations, the plant added a sludge thickening tank to the wastewater treatment facilities in 2020. This improved the sedimentation tank's bottom sludge extraction system and added a sludge washer to the flotation system, enhancing sludge collection efficiency and wastewater treatment performance.

Water quality monitoring and management GRI 303-2:2018、303-4:2018

Every six months, USI commissions an environmental testing institution approved by the Environmental Analysis Laboratory to test effluent water quality items, including ammonia nitrogen, which is subject to total quantity control. The items reported in periodic tests over the years have all been below the effluent standards.

According to the newly revised and announced "Effluent Standards," the effluent water quality control items for the petrochemical industry include 7 general water quality items and 15 specific water quality items, totaling 22 items. In 2025, the Company conducted testing and analysis on raw wastewater and effluent water quality, and the effluent fully complied with regulatory discharge standards.

Results of Water Quality Examination in Last 3 Years

Water Quality Indicator	2023		2024		2025		Effluent Standard (Petrochemical Industry)
	H1	H2	H1	H2	H1	H2	
Suspended solids (mg/L)	8.6	14.2	13.8	8.5	21	6.1	30
Oil/grease (mg/L)	5.3	4.3	7.8	8.7	9.8	6.7	10
Chemical oxygen demand (mg/L)	33.5	77.8	51.6	28.1	50	25.8	100
Ammonia nitrogen (mg/L)	0.13	0.06	1.54	0.8	0.07	0.4	20

Operation Clean Sweep (OCS)

The Plastics Industry Association and the American Chemistry Council jointly promote the international Operation Clean Sweep (OCS) program, which mainly aims to prevent the loss of plastic pellets, flakes, and powders to avoid them from entering the marine environment and causing environmental pollution.

Starting in 2020, the Company has promoted preventive management measures for plastic pellet leakage, introduced the concept of plastic pellet leakage management in the plant, and conducted educational training for contractors.

Through on-site contractor inspections and audits, as well as comprehensive process area inventories, the Company seeks to understand contractors' and employees' methods for cleaning up plastic pellets or preventing leaks, alongside source management in plant processes to prevent leaks. The Company also revises relevant control documents and strengthens awareness campaigns to ensure the collection of plastic pellets, flakes, and powders, avoiding environmental impacts caused by rainwater runoff or flow into wastewater.

In 2025, the total amount of recovered plastic across the entire plant was 10.5 metric tons.

Year	Recovered Weight (kg)
2023	11,996.9
2024	10,369.7
2025	10,465.9

Operational management

- On-site inventory and audit
- Enhance employee awareness
- Track implementation outcomes
- Formulate procedural documents

Workplace

- Ensure a flat workplace surface
- Provide cleaning equipment for employees
- Set up containment measures

Personnel training

- Educational training
- Workplace promotion
- Ensure employees adhere to standard operating procedures

Management measures

- Unloading management
- Transport and packaging management
- Area cleaning
- Collection management



4.3 Air Pollution Control

GRI 2-25、3-3

SDG 11



Impact Issues

Air pollution



2025 Goals

1. Zero air pollution: The leakage rate of VOCs equipment components is less than 0.5%.
2. Zero air pollution: Replace old pumps with new ones to reduce VOCs fugitive emissions into the atmosphere.



2025 Performance

1. The measured VOC leakage rate for Manufacturing Department I / Manufacturing Department II / Manufacturing Department III is 0.03%.
2. Zero air pollution: Replace old pumps with new ones to reduce VOCs fugitive emissions into the atmosphere (plan is 63% completed, continuing into 2026).



2026 Goals

1. Zero air pollution: The leakage rate of VOCs equipment components is less than 0.5%.
2. Zero air pollution: Replace old pumps with new ones to reduce VOCs fugitive emissions into the atmosphere.



Medium- and Long-Term Plans

1. Promote reduction plans for Volatile Organic Compounds emissions.
2. Decrease equipment component leakage incidents.
3. Reduce pollutant emissions.

Management Approach Description

USI is located in Kaohsiung City, which falls under the High Kaoping total quantity control zone. The areas for suspended particulates (PM₁₀), fine suspended particulates (PM_{2.5}), and ozone (O₃) all belong to Class 3 control regions. Improving air quality has long been a continuous direction for the Company. To fulfill its corporate social responsibility, the Company continuously works on environmental improvements, aiming to achieve "Zero Pollution and Zero Emissions" among the Five Zero Goals, and contribute to the enhancement of air quality.

Management Goals

USI continues to promote pollution reduction, substitute fuels with clean energy, and effectively collect and properly treat waste gas in control equipment. We also comply with the High Kaoping total quantity control reduction requirements to achieve the goal of zero pollution and zero emissions.



Management Methods

In addition to conducting regular testing and reporting of air pollutants, USI has planned the following reduction strategies to effectively decrease air pollutants:

Reduce Volatile Organic Compounds emissions	The Kaohsiung Plant implements an equipment component management plan. Aside from establishing procedural documents for equipment component management, filing and managing equipment components, planning outsourced quarterly regular testing, purchasing measurement instruments, and conducting regular instrument calibrations, each plant also strengthens the autonomous management of equipment components. Progress on inspections and repairs is regularly reviewed and tracked, maintenance and repair re-testing for equipment components are conducted, high-leakage rate components are identified and improved, the number of equipment components is reduced or replaced with low-leakage or leak-free types, and enhanced testing is applied to leak-prone and highly active equipment components. In 2025, the Company continued to promote the VOCs fugitive emission reduction management plan for equipment components. The Environmental Protection Section of the plant independently spot-checked 1,803 equipment component points and found 1 leak point, which was rectified immediately.
Effectively treat Volatile Organic Compounds	The Regenerative Thermal Oxidizer (RTO) treats high-concentration VOCs in the plant. According to outsourced testing in 2025, non-methane hydrocarbons were 1,420 ppm before treatment and 18 ppm after treatment, achieving a removal rate of 98.7%, which is superior to the regulatory requirement of 95% or less than 150 ppm. In 2026, equipment operation and maintenance training, the establishment of management systems, and educational training will continue.
Emergency response to air quality deterioration	From 2020 to 2025, an annual air quality deterioration response drill was conducted to enhance employees' emergency response handling capabilities, followed by a joint review of items for improvement post-drill. Joined the LINE group of the Environmental Protection Bureau to receive real-time updates on Kaohsiung City's air quality and take response measures accordingly.
Hazardous air pollutant management	In the 2025 testing of Hazardous Air Pollutants (HAPs), except for p-xylene, which was less than 400 ppb, all other tested items were below 200 ppb.

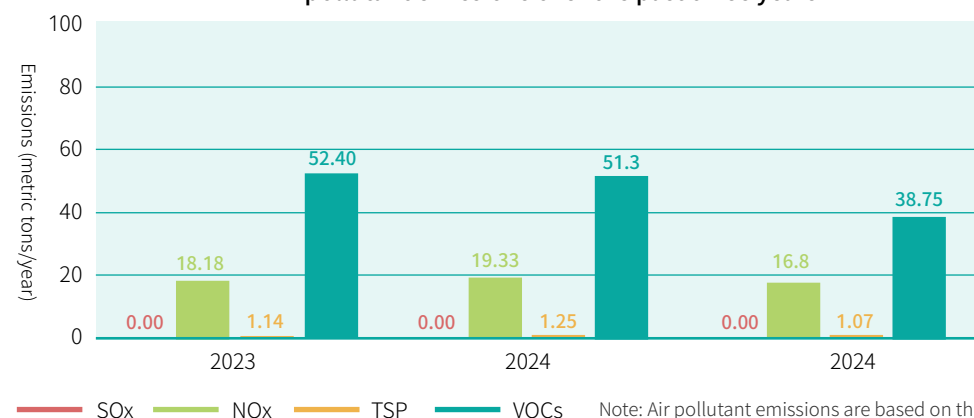
Management Performance GRI 305-7 RT-CH-120a.1

USI's main air pollutants include Sulfur Oxides (SOx), Nitrogen Oxides (NOx), Total Suspended Particulate (TSP), and Volatile Organic Compounds (VOCs). The SOx, NOx, and particulate matter in the plant are primarily generated from the combustion of boiler fuel, whereas VOCs mainly originate from the Regenerative Thermal Oxidizer (RTO), flare stacks, storage tanks, and equipment component emissions.

The emission flues have historically been tested by companies certified by the Environmental Analysis Laboratory, and the results have all been below the emission standards announced by the Ministry of Environment.

The air pollutant emissions for 2025 were: (1) Nitrogen Oxides: 16.8 metric tons/year; (2) Sulfur Oxides: 0 metric tons/year; (3) Volatile Organic Compounds: 38.75 metric tons/year; (4) Particulate matter: 1.07 metric tons/year; (5) Hazardous Air Pollutants (HAPs): 16.54 metric tons/year.

Air pollutant emissions over the past three years



Boiler emission flue testing results over the past three years

Pollutant	2023	2024	2025	Emission Standard (Announced 2020)
SOx(ppm)	ND	ND	ND	50
NOx(ppm)	92.6	78.1	75.7	100

Note 1: Over the years, the VOC testing results of emission flues have all complied with regulations, with a reduction rate of over 95%.

Note 2: ND indicates values below the detection limit.

Regenerative Thermal Oxidizer (RTO) emission flue testing results over the past 3 years

Pollutant	2023	2024	2025	Emission Standard
SOx(ppm)	ND	ND	ND	100
NOx(ppm)	1.4	1.0	1.0	150
TSP(mg/NM ³)	-	-	-	100
VOCs(ppm)	55	11	18	Reduction rate >95% or <150ppm

Note: Over the years, the VOC testing results of emission flues have all complied with regulations, with a reduction rate of over 97%.

Manufacturing Department I Thermal Oxidizer (TO) emission flue testing results over the past 3 years

Pollutant	2023	2024	2025	Emission Standard
SOx(ppm)	ND	-	ND	100
NOx(ppm)	14	-	6	150
TSP(mg/NM ³)	-	-	-	100
VOCs(ppm)	8	-	8	Reduction rate >95% or <150ppm

Note: Over the years, the VOC testing results of emission flues have all complied with regulations, with a reduction rate of over 97%.

GRI 2-25、3-3

SDG 11 SDG 12

4.4 Waste Management



Impact Issues

Resource circulation, waste disposal



2025 Performance

1. Random inspections were conducted on 9 waste clearance contractors and 8 waste disposal contractors; all audit results complied with relevant laws and regulations.



2026 Goals

1. Continuously promote the waste audit and management system.
2. Promote packaging material reduction, recycling, and reuse.



Medium- and Long-Term Plans

1. Strengthen the waste audit and management system.
2. Promote waste reduction.

Management Approach Description

To properly dispose of waste, USI complies with relevant waste management regulations and commissions licensed clearance and disposal organizations to carry out related operations.

The qualifications of commissioned units are confirmed periodically, proper disposal documents are required, and the operational management of commissioned waste is regularly visited to fulfill the duty of due care.

Management Methods

The industrial waste generated by USI is mostly general industrial waste, with only other flammable mixtures classified as hazardous industrial waste. The disposal methods include incineration, physical treatment, and washing treatment.

Regarding hazardous waste management, the quality control laboratory has continuously evaluated and reviewed analytical methods in recent years to reduce solvent usage and effectively decrease the generation of hazardous industrial waste.

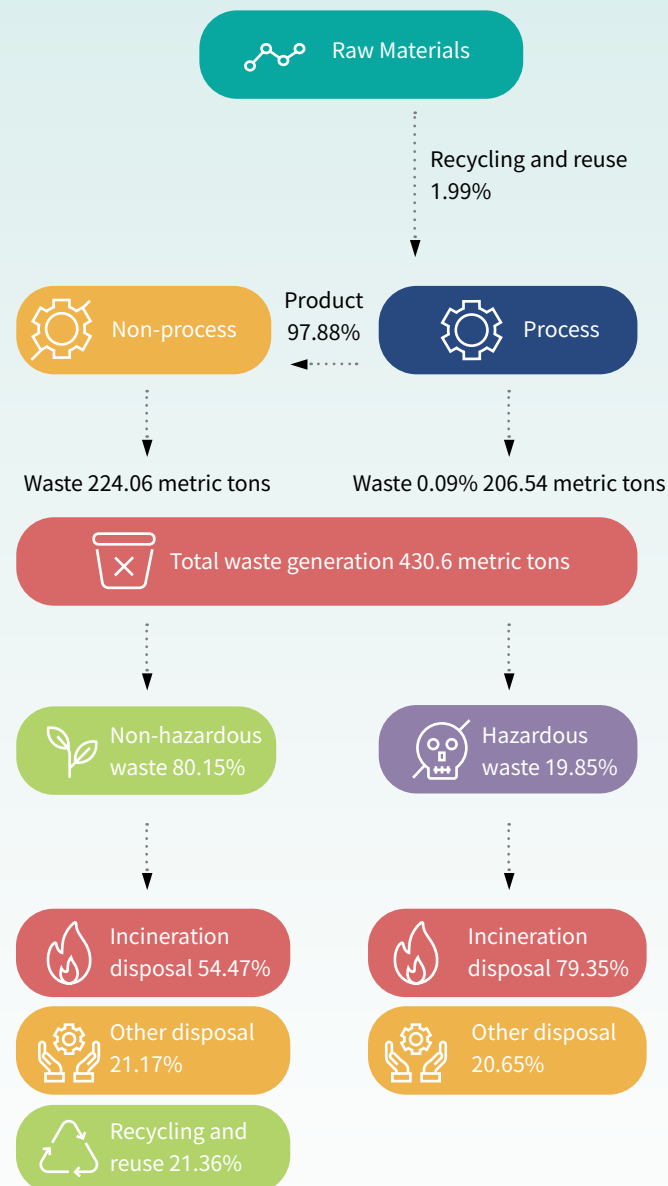
In addition, waste plastic containers are washed and treated by qualified disposal contractors before being crushed and sliced. The contractors then recycle and reuse the plastics to achieve a circular economy of resources.

A comprehensive review of waste legality is conducted annually, and a monthly reported data cross-checking and inventory system is implemented to ensure accurate grasp of waste information.

Furthermore, industrial waste storage areas are classified and stored according to the main component characteristics of the industrial waste, with clear labeling at storage locations, containers, and facilities. Sheltered storage areas and intercepting ditches are also established to prevent the pollution of surface water and groundwater leakage.

In 2025, monthly audits of waste storage areas were conducted, all of which complied with relevant regulations.

Waste management flowchart GRI 306-1:2020 RT-CH-150a.1



1 Generate waste/resources through use

- Waste collection and sorting management
- Report waste generation and storage status online regularly
- Regular monthly storage area inspections to confirm regulatory compliance
- Source management review to reduce waste generation
- Promote waste reduction plans

2 Waste clearance management

- Online reporting of the weight of waste cleared from the plant
- Real-time tracking system for clearance vehicles (GPS positioning)
- Retain tripartite manifests for commissioned joint processing and controlled delivery for inspection
- Clearance contractor audit management

3 Waste disposal management / Resource recovery

- Disposal contractors report received waste weight online
- Retain written documentation of proper clearance records for inspection
- Disposal contractor audit management
- Compilation of resource recovery and reuse records

Waste contractor audit management GRI 306-2:2020

USI's industrial waste clearance and disposal operations are commissioned to licensed organizations for legal clearance and disposal.

Starting from 2021, in accordance with the "Criteria for Determining Due Care Obligations in the Commissioning of Industrial Waste Clearance" (revised on February 23, 2021), random inspections were conducted in 2025 on 9 waste clearance contractors and 8 waste disposal contractors for items listed in Annex II of the regulation. This was to understand the operational management of their waste storage, clearance, disposal, and reuse. All audit results complied with relevant laws and regulations.

Basic document review

- 1 Environmental protection permit
ISO Management Systems

Compliance with waste storage

- 2 Disposal regulations
Consistency of disposal methods with contracts/manifests

Final waste disposal

- 3 Confirmation of final disposal method and flow direction
Consistency of disposal methods with contracts/manifests



Management Performance GRI 306-3:2020 、 306-4:2020 、 306-5:2020

USI is committed to waste resource sorting; recyclable resources are collected and managed by category, and outgoing quantities are weighed and recorded. Scrap metal is fully commissioned to legal contractors for recycling and disposal. In 2025, the amount of scrap metal recovered was 55.94 metric tons, while waste paper was handed over to nearby resource recycling operators for clearance and disposal, with a recovered volume of 1.18 metric tons. The resource recovery rate accounted for 21.36% of the total non-hazardous waste, a decrease of 26.86% compared to 2024. The higher recovery rate in 2024 was primarily due to the replacement of old equipment and spare parts in Manufacturing Department I, resulting in a higher volume of recovered scrap metal. In addition, the total output of all types of waste in 2025 was 430.60 metric tons.

In 2025, USI had no spills of oil, fuel, waste, or chemical substances.

Waste generation, transfer, and disposal over the past three years

Waste		Disposal Operation / Recovery Operation	2023	2024	2025
Hazardous Waste	Industrial Waste Direct Disposal	Incineration (excluding energy recovery)	60.46	77.71	67.84
		Other disposal operations	17.76	16.32	17.65
Total Hazardous Waste Volume			78.22	94.03	85.49
Non-Hazardous Waste	General Industrial Waste Direct Disposal	Incineration (excluding energy recovery)	275.91	177.72	198.34
		Other disposal operations	65.06	63.44	73.06
	Non-Hazardous Waste Disposal Volume		340.97	241.16	271.4
	Resource Recovery	Recycling and reuse	109.27	224.56	73.71
		Resource Recovery Rate (%)	24.27	48.22	21.36
Total Non-Hazardous Waste Volume			450.24	465.72	345.11
Total Waste Volume (metric tons)			528.46	559.75	430.6

Note 1: Data on waste generation, transfer, and disposal is sourced from the Ministry of Environment's Industrial Waste Reporting and Management Information System. Data on resource recovery is sourced from internal plant records and detailed accounting ledgers.

Note 2: All generated waste is commissioned to qualified clearance contractors for transport to qualified disposal contractors for off-site processing. Waste transferred for recovery operations is fully sent off-site for recycling and reuse.

Waste Reduction Plan



Strengthen promotion

Strengthen the promotion of waste sorting and labeling within the plant to increase the volume of recovered waste and reduce the clearance volume of general trash.



Cleaner production

Strengthen process management to reduce end-of-pipe treatments and minimize the generation of sludge and other industrial waste.



Hazardous waste reduction management

1. Waste plastic containers are washed and treated by qualified disposal contractors before being crushed and sliced. The contractors then recycle and reuse the plastics.
2. For the inhibitor analysis method, the quality control laboratory improved the analytical method by removing the extraction step, eliminating the need for solvents and thus significantly reducing solvent usage.

Additionally, solvents are recovered and reused for washing operations to reduce the consumption of cleaning solvents. In the future, USI will continue to evaluate and review analytical methods to effectively promote the reduction of hazardous industrial waste.

GRI 2-25、3-3 SDG 7 SDG 13

4.5 Climate Change and Energy Management



Impact Issues

Green electricity, carbon emission reduction



2025 Goals

1. Annual power savings rate of 1.51%
2. Plan to implement four energy-saving and carbon-reduction initiatives in 2025, with an estimated carbon reduction of 585 metric tons CO₂e
3. Install solar panels at the Kaohsiung Plant and legally utilize approximately 3.698 million kWh of solar green energy



2025 Performance

1. Annual power savings rate of 1.7% (average annual power savings rate from 2015 to 2025 is 1.48%)
2. Executed four energy-saving and carbon-reduction initiatives, creating a total carbon reduction benefit of 1,922 metric tons CO₂e
3. Completed GHG inventory and verification for consolidated subsidiaries
4. Accumulated grid-connected capacity of invested solar sites reached 9MW
5. Installed a 478.8kW solar power generation system at the Kaohsiung Plant for self-consumption



2026 Goals

1. Annual power savings rate of 1.27%
2. Plan to implement six energy-saving and carbon-reduction initiatives in 2026, with an estimated carbon reduction of 1,443 metric tons CO₂e
3. Complete the second phase of solar power generation equipment installation at the Kaohsiung Plant
4. Procure green electricity



Medium- and Long-Term Plans

1. Establish an AI smart management platform to provide energy-saving operational recommendations.
2. Continuously execute energy-saving plans to improve energy efficiency, targeting annual power savings of 1.5%.
3. Continue the planning and implementation of green power.

Management Performance

Climate Change: Responding to climate change is an opportunity for sustainable corporate operations

Climate change risk management

Climate change is a common challenge faced globally. To align with international standards and balance the needs of sustainable development, Taiwan announced the amendment of the "Greenhouse Gas Reduction and Management Act" to the "Climate Change Response Act" on February 15, 2023.

In the face of climate change impacts, carbon reduction has become a globally shared goal. In early 2022, the USI Group set a 2030 carbon reduction goal to "reduce carbon emissions by 27% in 2030 compared to 2017," and further established "2050 Carbon Neutrality" as a long-term corporate goal in 2023.

To achieve its corporate sustainability vision, the USI Group actively implements corresponding response strategies and management mechanisms through concrete actions. The Group's domestic manufacturing plants continuously implement ISO 14064-1 GHG inventories and verifications, plan and execute carbon reduction initiatives, and the Group actively develops external renewable energy sites. By the end of 2025, the cumulative grid-connected capacity of invested solar sites had reached 9MW, generating over 11.25 million kWh of renewable electricity annually.

USI maps its carbon reduction pathway in line with the Group's 2030 carbon reduction goal. In 2025, GHG emissions decreased by 25% compared to the baseline year (2017). In the future, the Company will more actively implement energy-saving and carbon-reduction initiatives.

The medium-term carbon reduction strategy will move towards low-carbon energy transition, energy efficiency improvement, intelligent monitoring, and the installation and use of renewable energy. The long-term strategy will continue to focus on low-carbon fuels, Carbon Capture and Utilization (CCU) technologies, and negative emission technologies to achieve the carbon neutrality goal and promote sustainable development.

USI's 2030 carbon reduction pathway planning

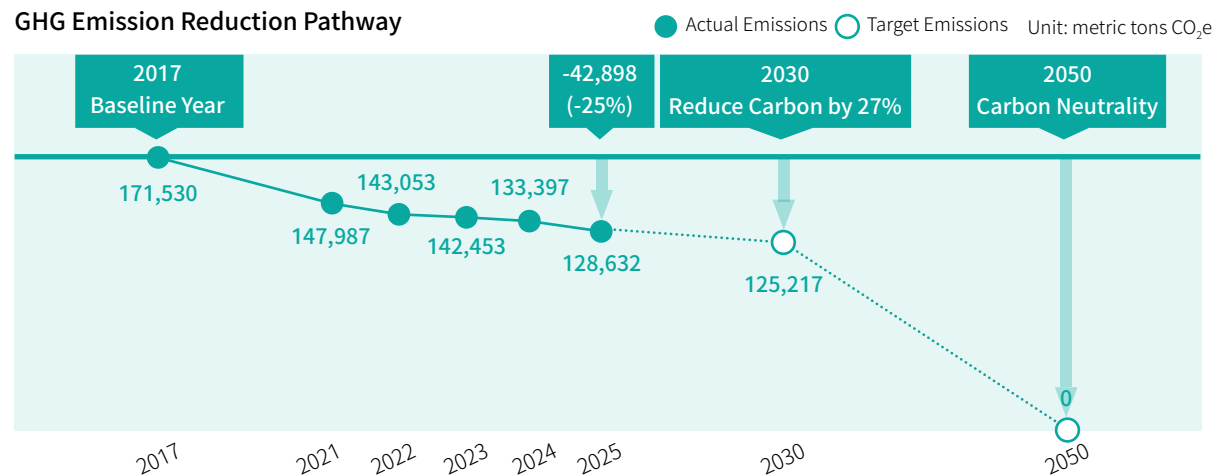
Because USI's electricity-related emissions account for over 80%, green energy deployment is an important strategy:

Solar Power: In 2025, the grid-connected solar capacity was raised to 9MW, with an estimated annual power generation exceeding 11.25 million kWh. The installation scale is set to reach 12MW by 2027, steadily moving towards low-carbon operations.

Geothermal Power: The site is located in Taitung, and late-stage exploration operations are currently underway.

Offshore wind power: The Company has formed Chem Union Renewable Energy Corporation with peers in the petrochemical industry to negotiate power purchase agreements with wind power developers.

GHG Emission Reduction Pathway



Target Emissions (10k metric tons)	2025 Actual Emissions (10k metric tons)	Achievement Rate	2026 Current Emissions (10k metric tons)
14.49	12.86	113 %	14.49

Note 1: Achievement rate = 2025 target emissions / 2025 actual emissions

Note 2: The carbon reduction pathway planning does not include the carbon reduction contribution from the low-carbonization of purchased electricity (Taipower).

Note 3: Since 2017 was the first year of full plant operation after the completion of the new production line, 2017 was set as the baseline year for energy consumption and total greenhouse gas emissions.

Note 4: The source of the carbon reduction pathway data is Scope 1 + Scope 2 of the Kaohsiung Plant.

Note 5: In 2026, considering factors such as new production capacity, the target emissions are higher.

Climate Change Management Framework

USI actively responds to climate change challenges and incorporates them into the Company's core governance framework.

The Company uses the Board of Directors as the highest governance unit, with the subordinate "Sustainability Committee" responsible for strategic review and supervision, and implements risk monitoring through the "Risk Management Team".

In addition, USI integrates ESG performance into the senior executive compensation system to strengthen the accountability of the organization's climate actions.

In terms of strategy and risk management, USI references the IFRS S2 standard to establish a comprehensive process for identifying, evaluating, and analyzing the financial impact of climate risks.

To achieve the sustainability vision, the Company has clearly defined the consolidated company's carbon reduction pathway: using 2017 as the baseline year, the goal is to reduce carbon emissions by 27% by 2030, and advance towards carbon neutrality by 2050.

Through specific response actions such as equipment replacement, renewable energy installation, and production optimization, along with regular disclosure of carbon emission data, USI demonstrates its determination to commit to climate resilience and the sustainable development of the value chain.

Climate change management framework

Category	Management Strategy and Action
 Governance	Governance Unit: USI designates the Board of Directors as the highest governance unit for responding to climate change and supervising climate change management actions. The subordinate Sustainability Committee, chaired by an independent director, reviews the Company's climate change strategies and targets, actions to manage climate-related risks and opportunities, and inspects the implementation status annually, reporting back to the Board of Directors. Management Level • Group Business Management Meeting: Chaired by the Chairman, it irregularly conducts promotional planning and result reporting for major energy-saving and carbon reduction policies. • Group's Equipment Preventive Maintenance Environmental Risk Control Division (Environmental Protection Department) Quarterly Meeting: As the highest unit executing energy management for the USI Group, it reports promotional planning and progress to the Chairman every quarter and makes decisions. • Risk Management Team: Submits risk identification results to the Board of Directors annually, covering risks caused by global climate change, energy, and related fiscal/tax issues. • Remuneration Committee: Annually reviews senior executives' ESG-related performance (including climate change issues) and integrates climate-related targets into the performance evaluation and compensation systems of senior executives to monitor the achievement of targets for climate-related issues.
 Strategy	• Identify risks and opportunities, and discern material items based on the probability of occurrence and impact of the risk and opportunity items. • Evaluate potential financial impacts: Conduct potential financial impact assessments for identified material risks and opportunities. • Scenario analysis: Set up scenarios based on possible net-zero solutions achievable under different conditions.
 Risk Management	• IFRS S2: Reference the IFRS S2 framework to identify risks and opportunities, communicate with respective responsible units, and have senior executives confirm the annual promotional items. • Based on the nature, probability of occurrence, and potential degree of impact of risks, the Company sets qualitative and quantitative evaluation criteria, and identifies, evaluates, prioritizes, and monitors climate-related risk and opportunity items. • The identification results: Evaluate climate-related risks and opportunities that can reasonably be expected to affect the Company, as well as information on current and anticipated impacts on the business model and value chain.
 Metrics and Targets	• Group carbon reduction target: Set 2017 as the baseline year, reduce carbon emissions by 27% by 2030 compared to the baseline year, and achieve carbon neutrality by 2050. • Climate response: Equipment replacement, construction of renewable energy equipment, production scheduling optimization, building air-conditioning planning, energy management systems, and extreme climate emergency response plans. • Greenhouse Gas Emissions Disclosure : Annually disclose Scope 1, Scope 2, and Scope 3 emission data in the sustainability report, and regularly review the reasons for increases or decreases.

Note: For detailed risk management processes and mechanisms, please refer to Section [2.3 Risk Management](#).

Identification of Climate-Related Risks and Opportunities

To strengthen climate risk management and align with international standards, the Company references the IFRS S2 "Climate-related Disclosures" standard to assess the impact of climate-related risks and opportunities on corporate strategy and financial status.

Key factors are identified through scenario analysis, and countermeasures are incorporated into the business decision-making process.

Physical risks reference research data from the Taiwan Climate Change Projection Information and Adaptation Knowledge Platform (TCCIP) "Atlas of Key Indicators of Climate Change in Taiwan: AR6 Statistical Downscaling Edition" and the National Science and Technology Center for Disaster Reduction, adopting scenarios combining IPCC AR6 "Shared Socioeconomic Pathways (SSP)" and "Representative Concentration Pathways (RCP)".

The Company selected the SSP5-8.5 (very high greenhouse gas emissions) scenario as the baseline, anticipating that CO2 emissions will double around 2050 (Year 139 of the ROC era), and conducted financial impact analyses focusing on disasters such as "high temperatures," "flooding," and "droughts."

Transition risks reference the World Energy Outlook (WEO) published in 2021 by the International Energy Agency (IEA), which divides scenarios into 3 categories based on different energy trends and climate policies: STEPS (Stated Policies Scenario), APS (Announced Pledges Scenario), and NZE (Net Zero Emissions).

Among them, NZE assumes that all countries will reach net-zero emissions by 2050, serving as the most aggressive scenario for promoting reduction measures.

In addition, we also refer to the "Taiwan's Pathway to Net-Zero Emissions in 2050" published by the National Development Council in 2022 to echo the national carbon reduction pathway and ensure the Company remains resilient for sustainable operations under the impact of extreme climate change.

To ensure the assessment results align with operational practices, the Company distributed questionnaires to senior executives to evaluate 5 climate risks across four dimensions: "Degree of Impact," "Probability of Occurrence," "Vulnerability," and "Speed of Impact";

At the same time, 5 climate opportunities were evaluated based on "Degree of Impact" and "Probability of Occurrence."

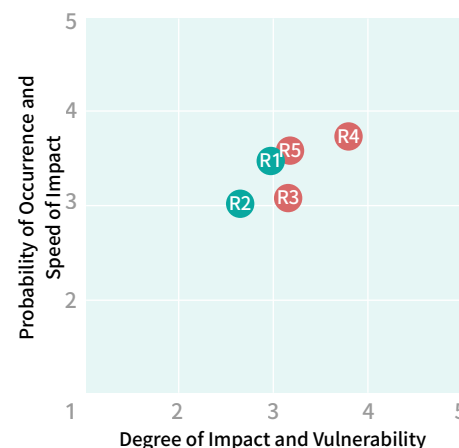
After compiling the questionnaires, conducting quantitative model analysis, and plotting two-dimensional scatter diagrams, 5 key material issues that need to be prioritized in risk management and strategic planning were ultimately identified:

3 high-priority risks: R1 Transition Risk - Carbon fee collection, R4 Physical Risk - High temperature and unstable energy supply, R5 Physical Risk - Extreme wind, rain, and flooding.

2 high-potential opportunities: O1 Opportunity - Introduction of low-carbon energy, O5 Opportunity - Enhancing corporate reputation and brand awareness.

In response to the above material climate issues, USI carried out scenario simulations and financial impact assessments, formulating corresponding response strategies and management mechanisms.

To ensure the effectiveness of risk management, the Company regularly monitors climate change-related risks annually, compiles the execution results into the Company's risk management operations, and reports to the Audit Committee and the Board of Directors every year to ensure effective implementation of risk management measures. This aims to accurately grasp and mitigate operational impacts brought by extreme climates, committing to building a resilient climate change culture.



Transition Risk

- ◆ R1 Carbon fee collection
- ◆ R2 Change in customer behavior

Physical Risk

- ◆ R3 Drought and water shortage
- ◆ R4 High temperature and unstable energy supply
- ◆ R5 Extreme wind, rain, and flooding



Opportunity

- ◆ O1 Introduction of low-carbon energy
- ◆ O2 Low-carbon product innovation and market expansion
- ◆ O3 Energy efficiency improvement and process carbon reduction optimization
- ◆ O4 Water use efficiency management
- ◆ O5 Enhancing corporate reputation and brand awareness

In response to the uncertainties brought by climate change, USI has identified major climate physical risks, transition risks, and climate-related opportunities related to operations, and assessed their potential impacts on the Company's business, operational strategies, and financial performance across different time scales.

Based on its operational characteristics and industry environment, the Company defines time scales as follows:

Short-term: 2025 to 2027

Medium-term: 2027 to 2030

Long-term: 2030 to 2050

Sustainable and climate-related risk and opportunity items that can be reasonably expected to have an impact

Type	Item	Description	Potential Impact Timeframe	Concentrated in which part of the Business Model / Value Chain	Impact on Business Model / Value Chain
Transition Risk	Carbon fee collection	According to the "Climate Change Response Act," Taiwan will officially collect carbon fees starting in 2025, targeting enterprises with annual carbon emissions exceeding 25,000 metric tons of CO ₂ e. USI's Kaohsiung Plant is subject to carbon fee collection. The initial standard carbon fee rate is NT\$300 per metric ton. If an enterprise can propose a specific and verifiable voluntary reduction plan approved by the competent authority, a preferential rate of NT\$100 per metric ton applies. For those with high carbon leakage risks, adjustments to the chargeable emissions apply, with an initial discount coefficient of 0.2.	Short-term Medium-term Long-term	- Suppliers - Own Operations - Customers	Current Business Model & Value Chain - Formulate a low-carbon transition plan - Establish an internal carbon pricing mechanism, incorporate potential carbon fee expenditures into the annual operating cost budget, and evaluate specific impacts on gross margin and cash flow. - Actively plan and execute a "Voluntary Reduction Plan" Expected Business Model & Value Chain - Accelerate the promotion of the Company's low-carbon transition policy - Upstream suppliers may pass on carbon fee costs, leading to increased raw material procurement costs (green premium). - Downstream customers have increasingly strict requirements for "low-carbon products" or "green supply chains." Failure to comply with carbon reduction requirements may result in the risk of losing orders.
Physical Risk	High temperature and unstable energy supply	As climate change intensifies, continuous increases in annual average temperatures and the number of high-temperature days have become a common global trend. According to Central Weather Administration data, Taiwan's annual average temperature and the frequency of high-temperature events have risen significantly, indicating that summer high temperatures may become a recurring risk source in the future. High temperatures increase the risk of unstable power supply from public utility companies. We will conduct regular maintenance and upkeep of power equipment to enhance resilience against power instability.	Long-term	- Suppliers - Own Operations - Customers	Current Business Model & Value Chain - Need to strengthen maintenance of backup generators or Uninterruptible Power Supply (UPS) systems in the plant to cope with sudden power load shedding or outages. Expected Business Model & Value Chain - Increased demand for air conditioning and cooling in factories and offices leads to higher power consumption and daily operating costs (electricity bills). - Need to allocate capital expenditures to replace old, energy-consuming equipment and introduce intelligent energy management systems to improve energy efficiency. - Costs incurred by upstream suppliers to enhance climate resilience may lead to rising procurement costs. - If downstream customers are forced to halt work due to high-temperature power rationing or sudden outages, they may reduce procurement volumes and shipping frequencies.

Type	Item	Description	Potential Impact Timeframe	Concentrated in which part of the Business Model / Value Chain	Impact on Business Model / Value Chain
Physical Risk	Extreme wind, rain, and flooding	According to observations by the Central Weather Administration and IPCC reports, typhoons, heavy rainfall, and localized severe rainstorms in Taiwan have increased significantly in recent years. This not only causes recurring flooding in cities and low-lying areas but also brings immediate and severe impacts on industrial operations, classifying as an acute physical risk.	Medium-term Long-term	- Suppliers - Own Operations - Customers	Current Business Model & Value Chain - Inventory the flooding potential of operational sites, incorporate potential flood control facility construction, disaster recovery expenses, and insurance costs into the annual operating cost budget, and evaluate specific impacts on gross margin and cash flow. Expected Business Model & Value Chain - Accelerate the upgrade of protection resilience at operational sites and the advancement of climate adaptation policies. - Upstream suppliers may experience plant damage or traffic disruptions due to extreme rainfall and flooding, leading to risks of raw material supply shortages and supply chain disruptions, thereby increasing procurement and transportation costs. - Downstream customers have increasingly strict requirements for "supply chain climate resilience" and "stable delivery capabilities." If extreme weather causes capacity standstills or delivery delays, the Company may face risks of breach of contract compensation or loss of orders.
	Introduction of low-carbon energy	Driven by stricter global climate policies and the 2050 net-zero emissions goal, corporate energy usage structures are rapidly transforming. Introducing renewable energy has become a crucial opportunity for enterprises to fulfill carbon reduction commitments and maintain international competitiveness. For carbon-intensive manufacturing industries, self-building or purchasing renewable energy such as solar, wind, and geothermal can effectively reduce indirect energy greenhouse gas emissions generated during electricity usage.	Short-term Medium-term Long-term	- Suppliers - Own Operations - Customers	Current Business Model & Value Chain - Inventory the potential for renewable energy construction at plant sites, and incorporate relevant equipment construction capital expenditures and green power procurement costs into the annual operating budget. Expected Business Model & Value Chain - Expand the proportion of low-carbon and renewable energy use. - Upstream suppliers may face pressure from brands to increase the proportion of green power usage, prompting them to increase renewable energy procurement, thereby raising operating costs. - Due to strong downstream customer demand for "green manufacturing" and "low-carbon products," providing products with low-carbon dividends can help prioritize winning green procurement business opportunities and expanding market share.
Opportunity	Enhancing corporate reputation and brand awareness	By researching, developing, and promoting low-carbon, environmentally friendly innovative products and services, actively respond to consumers' escalating green demands. This move not only serves as a way for the enterprise to explore emerging sustainable markets but also enables it to stand out in fiercely competitive existing markets by leveraging the differentiated advantage of green value, comprehensively enhancing market competitiveness.	Short-term Medium-term Long-term	- Own Operations - Customers	Current Business Model & Value Chain - Invest R&D resources into sustainability-related products. Expected Business Model & Value Chain - As market demand for low-carbon and energy transitions rises, continue to develop various emerging sustainable products. - Due to strong downstream customer demand for "green manufacturing" and "low-carbon products," providing products with low-carbon dividends can help prioritize winning green procurement business opportunities and expanding market share.

Strategic decisions and financial impacts of sustainability and climate-related risks and opportunities

Type	Item	Financial Impact	Response Strategies and Decision Impact
Transition Risk	Carbon fee collection	The relevant financial impacts for the current period are as follows: - USI's Kaohsiung Plant meets the MOENV's "high carbon leakage risk" criteria, proposed a voluntary reduction plan that passed review, and obtained a preferential carbon fee rate of NT\$100 per metric ton. - For this year, based on the carbon fee collection regulations announced by the MOENV, estimated relevant carbon fee expenditures (operating expenses) calculated by emissions multiplied by a high carbon emission coefficient of 0.2 amounted to NT\$2,567 thousand. - To reduce carbon emissions and mitigate carbon fee impacts, current period capital expenditures of NT\$6,476.2 thousand and operating expenses of NT\$1,013.3 thousand were invested in replacing old motors, boilers, and chillers, and installing LED energy-saving lighting and other energy-efficient equipment, leading to an increase in non-current assets and cash outflows from investing activities. - Although short-term equipment investments increase depreciation expenses and cash outflows, in the long term, the reduced electricity expenses and carbon fee costs achieved through improved energy efficiency will help optimize overall operational efficiency and maintain profitability.	- The Company introduced internal carbon pricing, set via a shadow pricing approach, integrating carbon costs into investment evaluations to increase the execution likelihood of carbon reduction projects. - Established an Energy Management Systems (ISO 50001) to analyze various figures and seek room for improvement. - Added rooftop solar equipment for self-generation and consumption, scheduled for completion in 2026.
	High temperature and unstable energy supply	The relevant financial impacts for the current period are as follows: - To ensure operational stability of production equipment under extreme climates, routine maintenance and calibration of core equipment such as compressors, generators, and air compressors were strengthened this period, with related capital expenditures amounting to NT\$17,873 thousand - By strengthening energy infrastructure and equipment resilience, although capital expenditures and maintenance costs increase in the short term, future business interruption losses caused by high-temperature shutdowns or power rationing can be effectively reduced.	- Continued plant heat-insulating paint projects and pipeline insulation/cooling renewal operations. - Promoted energy-saving and carbon reduction projects, replaced old equipment, and strengthened energy efficiency and operational stability.
Physical Risk	Extreme wind, rain, and flooding	This risk may affect the medium and long term; the relevant financial impacts for the current period are as follows: - Water consumption fee expenditures: From November 1, 2024 to April 30, 2025 (six months), the original water consumption fee expenditure was NT\$599 thousand. [cite_start]Because the previous year's R2 water recycling rate outperformed the industry range and was verified, qualifying for a preferential rate, the updated water consumption fee expenditure was NT\$168 thousand. - In response to the potentially increasing flooding risks under the long-term trend of climate change, insurance investments this period increased by NT\$279 thousand compared to the previous year. - Through preventive dredging, insurance transfer, and hardware facility enhancements, the Company strives to reduce recovery costs and business interruption risks during medium- to long-term extreme climate events, maintaining long-term financial stability.	Water Consumption Fee Collection - Promote Water efficiency management systems (ISO 46001) - Improve the R2 water recycling rate and conduct verification to strive for preferential water consumption fee rates. - Reduce Water Withdrawal and Water Consumption - Invest in wastewater treatment systems, MRT condensate water recovery improvements, and detention pond rainwater harvesting systems. Flood Control Measures and Equipment - Completed installation of waterproof gates and water pumps, and reinforcement of perimeter walls. - Elevated equipment and storage. - Flood control drills.

Type	Item	Financial Impact	Response Strategies and Decision Impact
Opportunity	Introduction of low-carbon energy	This opportunity affects the short, medium, and long term; the relevant financial impacts for the current period are as follows: - To increase energy autonomy and implement the energy transition, capital expenditures of NT\$13,843 thousand were invested this period to construct plant-site solar photovoltaics, geothermal power, and other renewable energy equipment, leading to an increase in non-current assets and cash outflows from investing activities. - Through self-built solar power and green power procurement, although the Company increased power purchase costs in the short term, with expenditures of NT\$18,458 thousand this period. - However, in the long term, it can reduce reliance on traditional fossil energy, effectively hedge against the impact of future carbon fee cost increases, and enhance corporate green competitiveness and brand value.	- Develop self-built solar power sites. - Prioritize natural gas as the source of steam supply. - USI established USI Green Energy Corporation to invest and participate in the renewable electricity market.
	Enhancing corporate reputation and brand awareness	This opportunity affects the short, medium, and long term; the relevant financial impacts for the current period are as follows: As market demand for transition rises, the operating revenue contribution corresponding to sustainability-related products (including photovoltaic-grade EVA film raw materials) totaled NT\$1,525,765 thousand this period.	Develop various new products and actively transition to capture the B2C market: - Internationally certified recycled products under Pre-Consumer material (ISO 14021 PIR). - Sustainable product development and resource efficiency enhancement. - Promotion of recyclable packaging products.



Resilience Assessment of Climate-Related Risks

Risk	Key Assumptions	Selected Scenarios	Assess Impacts and Resilience Capacity
Transition Risk Carbon fee collection	1. Taiwan will continue to adopt the "Taiwan's Pathway to Net-Zero Emissions in 2050." The Company expects to reduce carbon emissions by 27% by 2030 and achieve carbon neutrality by 2050. 2. The Company proposes a voluntary reduction plan and achieves the specified reduction targets, complying with the designated reduction rate stipulated in Annex II Technical Benchmarks of the "Designated Greenhouse Gas Reduction Targets for Levy Objects" announcement. 3. According to official reports such as the Taiwan Climate Change Projection Information and Adaptation Knowledge Platform (TCCIP) and national meteorological observations, in terms of climate models, Taiwan's winter will gradually shorten, total annual rainfall will gradually increase, and torrential rain intensity tends to increase.	1. Stated Policies Scenario (STEPS) 2. Net Zero Emissions Scenario (NZE) by 2050	Assess Impacts - STEPS: The MOENV review committee preliminarily recommends phasing in carbon fee hikes, with the rate expected to rise between NT\$1,200 and NT\$1,800 after 2030. - NZE: According to IEA research, the effective carbon price in developed countries should reach US\$140 per metric ton (approximately NT\$4,500) by 2030. Resilience Capacity - Strictly execute the proposed voluntary reduction plan to meet the eligibility requirements for the MOENV's preferential rate, reducing the financial impact of carbon fee expenditures. - Actively introduce high-efficiency energy-saving equipment and low-carbon energy, converting carbon neutrality pressure into motivation for process optimization, and consolidating the Company's competitive advantage in international low-carbon supply chains.
Physical Risk High temperature and unstable energy supply	3. According to official reports such as the Taiwan Climate Change Projection Information and Adaptation Knowledge Platform (TCCIP) and national meteorological observations, in terms of climate models, Taiwan's winter will gradually shorten, total annual rainfall will gradually increase, and torrential rain intensity tends to increase.	SSP 5-8.5	Assess Impacts - An increase in the number of consecutive extreme high-temperature days will cause cooling demand to remain high for long periods, significantly accumulating electricity expenditure burdens, and increasing the threat of power rationing or outages due to regional grid overloads, potentially causing unplanned production line shutdowns and loss of product yield. - A long-term high-temperature environment increases thermal hazard risks in the workplace. Aside from affecting the health of frontline personnel, it may also shorten equipment lifespan due to cooling equipment running at full load over extended periods. Resilience Capacity - Implement equipment maintenance: Strengthen routine maintenance of core equipment such as compressors, generators, and air compressors to ensure operational stability of production equipment under extreme climates, and effectively reduce future business interruption losses caused by high-temperature shutdowns or power rationing through equipment replacement. - Enhance plant heat insulation and pipeline insulation efficiency: Continuously execute plant heat-insulating paint projects and pipeline insulation/cooling renewal operations to reduce energy consumption.
Physical Risk Extreme wind, rain, and flooding			Assess Impacts - Substantial increases in extreme rainfall intensity and frequency may cause inadequate drainage around the plant area, triggering flood disasters and directly resulting in physical losses from damaged production equipment and raw materials. - Damage to transportation infrastructure and logistics paralysis triggered by extreme wind and rain will lead to raw material supply interruptions and the inability to ship finished products in a timely manner, thereby impacting overall operational performance and customer fulfillment capabilities. Resilience Capacity - Strengthen flood control infrastructure in the plant area and implement elevation projects for critical equipment rooms to reduce the risk of damage to physical assets from extreme flooding events. - Optimize supply chain diversification and Business Continuity Plans (BCP): Establish cross-regional backup supplier lists and logistical supporting plans to cope with supply chain disruption crises triggered by extreme wind and rain.

Group Promotion of Internal Carbon Pricing

To proactively respond to the government's carbon fee policies, effectively tackle climate change, and mitigate carbon risks, the USI Group introduced an internal carbon pricing system in 2024 covering all plant sites in Taiwan. The price references the domestic carbon fee pricing basis, initially set at NT\$300 per metric ton of carbon, and will undergo rolling reviews for phased increases.

This system primarily integrates carbon costs into corporate decision-making and investment evaluation processes, assesses the impact of carbon emissions on business operations, accelerates the implementation of carbon reduction measures, and drives low-carbon investments.

To ensure effective implementation of the mechanism, the Group conducts regular annual management and execution confirmations. In May 2025, verification of the actual integration of carbon pricing into project evaluations by various units was completed, ensuring the mechanism practically translates into low-carbon transition momentum, thereby achieving the enterprise's long-term sustainable development goals.

Product Innovation and Sustainable Brand Management

The Company continuously invests in innovative materials and products to reduce the impact of climate change and actively transitions to capture the B2C market. See section [3.1 Technology R&D](#) for details.

Taskforce on Nature-related Financial Disclosures (TNFD)

USI deeply recognizes the importance of biodiversity protection for maintaining global ecosystem stability and human sustainable well-being; therefore, it actively promotes various actions to reduce the impact of operational activities on the ecological environment.

Biodiversity GRI 101

Biodiversity Policies and Initiatives

Biodiversity is the core foundation for sustaining the stable operation of Earth's ecosystems. It exerts crucial influences on key ecosystem services such as climate regulation, water cycling, soil productivity, and food supply, and further relates to the long-term development and health/well-being of human societies.

In 2022, countries around the world reached a consensus at the 15th Conference of the Parties to the Convention on Biological Diversity (COP15) to explicitly set global action directions and management goals for biodiversity conservation by 2030 through the new Global Biodiversity Framework (GBF).

In the face of challenges brought by climate change and continuous biodiversity loss, pressure on natural resources is increasingly rising.

Approaching from risk management and sustainable business perspectives, USI actively strengthens natural capital management and introduced the Taskforce on Nature-related Financial Disclosures (TNFD) framework for the first time. While formulating the "Biodiversity and Zero Deforestation Policy," the Company follows international conventions and initiatives such as the "UN Convention on Biological Diversity" and the "Kunming-Montreal Global Biodiversity Framework." We work alongside upstream suppliers and key business partners to co-create a sustainable future, progressively achieving "No Net Loss (NNL)" and advancing towards "Net Positive Impact (NPI)."

Nature-related Financial Disclosures GRI 101-2 、 101-4 、 101-5 、 101-6

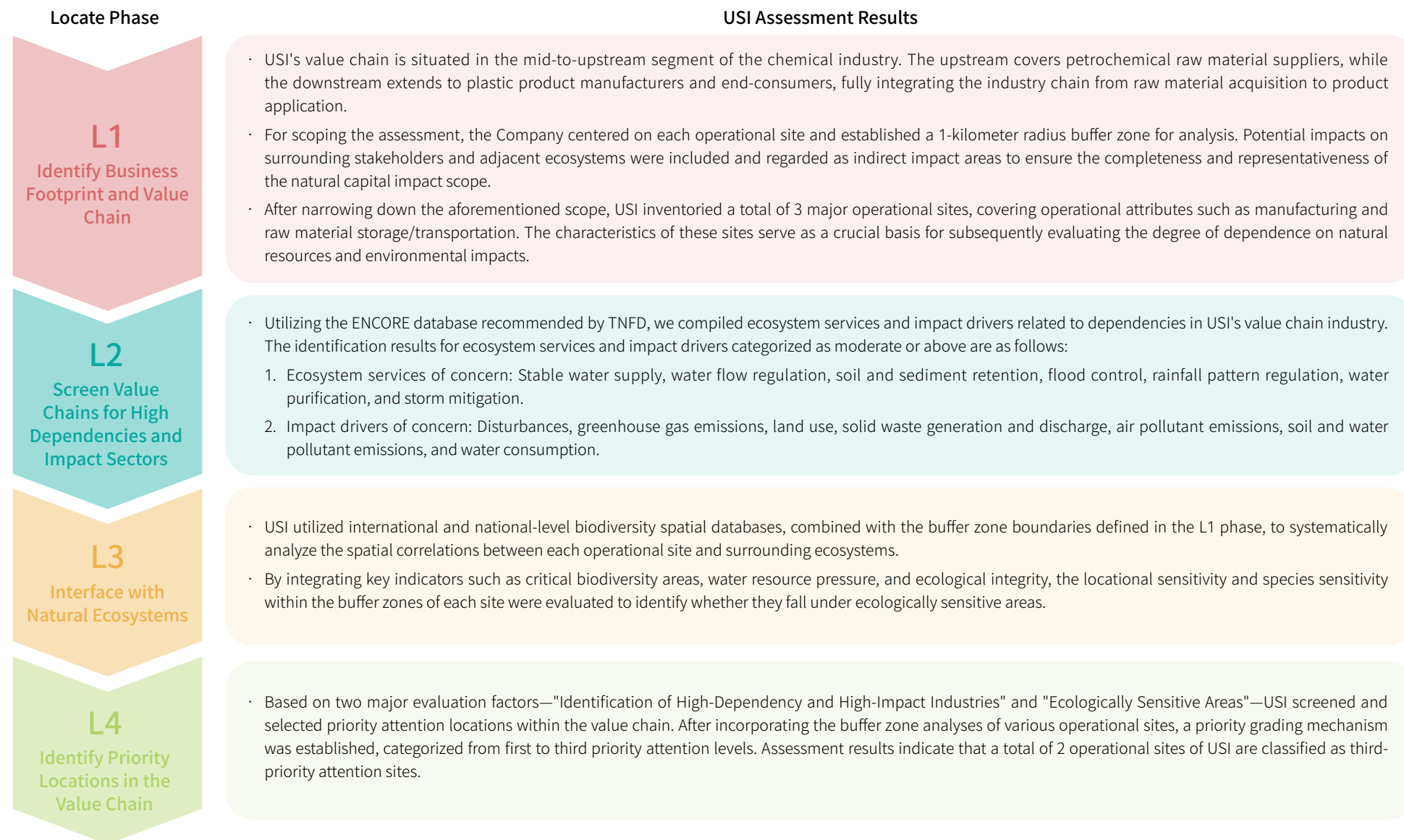
USI follows the Locate, Evaluate, Assess, Prepare (LEAP) methodology of the Taskforce on Nature-related Financial Disclosures (TNFD) to systematically identify and evaluate nature-related risks and opportunities.

The Company recognizes that the correlation between the state of natural capital and operational activities largely depends on the "geographical location" of operational sites and the "degree of dependencies and impacts" on ecosystems.

Whether it's the operation of its own production sites or the supply and manufacturing processes of upstream raw materials in the chemical industry, they may cause direct or indirect impacts on local ecosystems.

Based on this, the Company uses scientific methods to inventory key operational sites and value chain activities, evaluates their dependencies and impacts on natural resources, and further identifies high-risk areas and key issues as the foundation for subsequent risk management and action strategies. Specific practices are as follows.

TNFD LEAP Methodology Explanation



Evaluate Step

USI Assessment Results

E1 Identify Natural Capital, Ecosystem Services, and Impact Drivers

- Utilized map data referenced in the Locate phase to identify surrounding natural capital, and referred to literature regarding ecosystem services potentially provided by specific ecosystem communities, further detailing the ecosystem services that USI might depend on or impact.

E2 Establish Dependency and Impact Pathways of Operational Activities

- To understand the interactive relationships of dependencies and impacts with us, we referenced the Natural Capital Protocol and TNFD guidelines to establish Dependency Pathways and Impact Pathways for operational activities at each plant site. The relevant explanations are as follows:
 1. Dependency Pathway: When potential external environmental or social changes occur, they may impact the state of nature, causing changes to the ecosystem services we depend on, which in turn affect USI's operational activities.
 2. Impact Pathway: Impact drivers from operational activities lead to changes in the state of nature, causing ecosystem services to diminish or be lost, thereby triggering external environmental or social changes.

E3 Measure Dependencies and Impacts

- Based on the characteristics of each operational site, USI evaluated its degree of dependency on specific ecosystem services, as well as the potential impacts of relevant impact drivers on surrounding stakeholders and the environment. We conducted a systematic analysis and classification using a four-quadrant matrix.

E4 Materiality Assessment

- The analysis results for ecosystem services are as follows:
 1. Areas requiring monitoring: Stable water supply
 2. Low-risk areas: Water flow regulation, soil and sediment retention, flood control, rainfall pattern regulation, water purification, storm mitigation
- The analysis results for impact drivers are as follows:
 1. General monitoring areas: Disturbances, greenhouse gas emissions, land use, solid waste generation and discharge, air pollutant emissions, soil and water pollutant emissions, water consumption.

Assess, Prepare Step

USI Assessment Results

A Assess Risks and Opportunities

- Based on the TNFD Risk and Opportunity Framework and international report analysis, we identified and preliminarily evaluated potential risk and opportunity issues in the value chain. Please refer to the Company's Nature-related Disclosures Thematic Report for detailed content.
- According to our risk and opportunity evaluation process, we track risks and opportunities identified and ranked as moderate and above. Please refer to the Company's Nature-related Disclosures Thematic Report for detailed content.

P Prepare to Respond and Report

- For material risks and opportunities, we have formulated corresponding response strategies to address related impacts and regularly follow up on progress with the responsible units to evaluate the implementation of these strategies. Please refer to the Company's Nature-related Disclosures Thematic Report for detailed content.
- Regarding the setting of nature-related indicators and targets, USI prioritized focusing on climate change as the main driving factor, setting specific and proactive carbon reduction targets to respond to relevant risks and opportunities. At the same time, corresponding management targets and control measures have been established for air pollutant emission issues to continuously reduce environmental impacts and strengthen overall environmental management performance.

Response to IFRS Sustainability Disclosure Standards

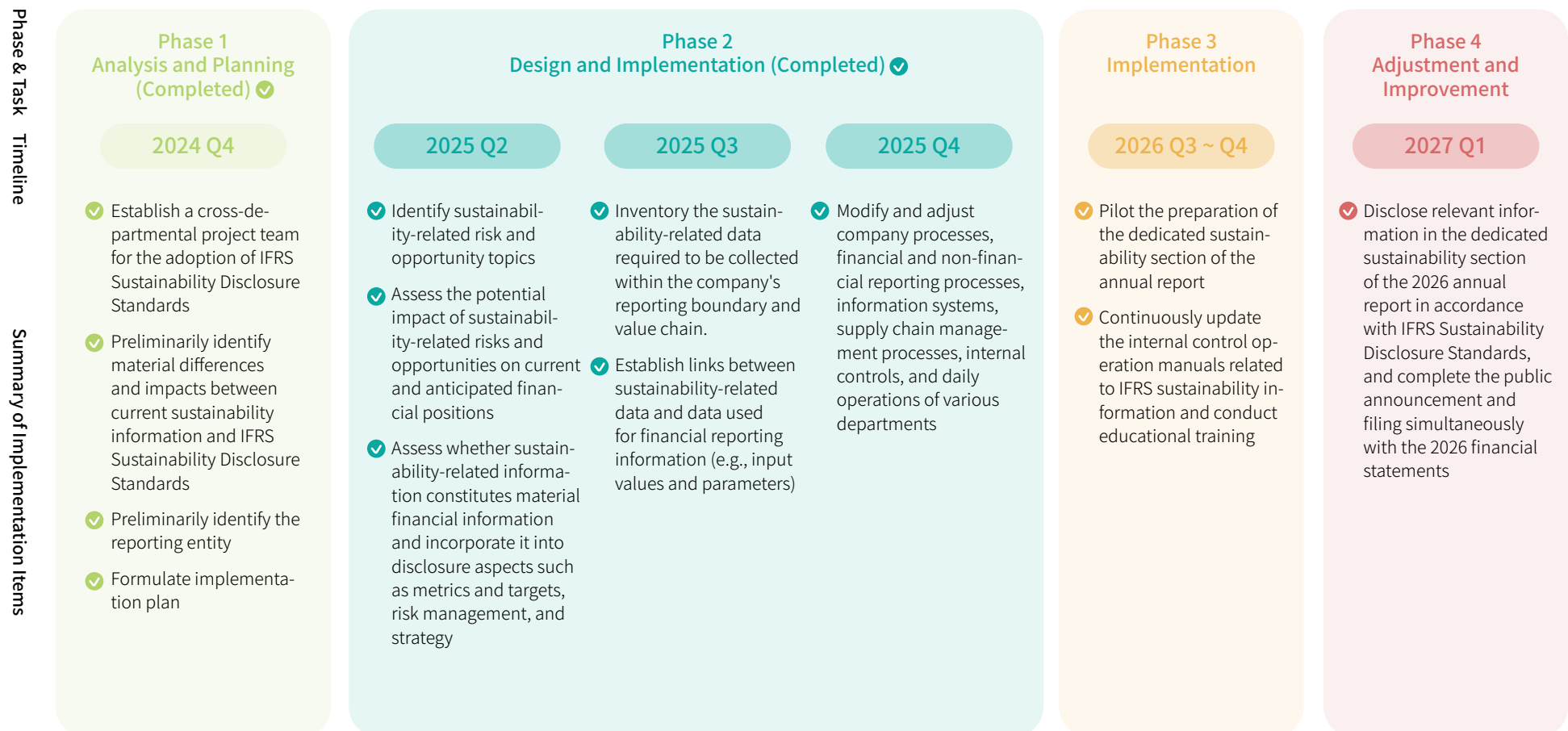
According to the "Roadmap for Promoting the Adoption of IFRS Sustainability Disclosure Standards in Taiwan" issued in August 2023, listed companies in Taiwan will apply the IFRS Sustainability Disclosure Standards in three phases starting from 2026.

USI Group established a cross-departmental IFRS project team in 2024 and reports the implementation status to the USI Board of Directors quarterly for control.

The IFRS project team is coordinated and led by the Group's Chief Financial Officer, with cross-departmental collaboration between the "Operational Impact Task Force" and the "Financial Impact Task Force" to assess the potential financial impacts and effects of material risks and opportunities on the company.

USI completed the Phase 2 project in 2025 and is expected to disclose relevant information in a dedicated sustainability section of the annual report to be published in 2027.

Implementation Plan



Energy Management

Group Energy Management Targets

USI Group proactively set energy management targets as early as 2016, aligning with Taiwan's energy development policies and continuously tracking international trends and national regulations for dynamic reviews.

After weighing internal and external factors, USI Group set a 2030 carbon reduction target in early 2022, and further established a 2050 carbon neutrality target in 2023.

Since 2018, the Group's 9 core domestic production plants have successively introduced Energy Management Systems (ISO 50001) and obtained certification to effectively manage energy performance, continuously implement energy-saving and carbon-reducing improvement actions, and hope to exert influence to further reduce environmental impacts.

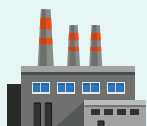
USI Group Carbon Reduction Targets

**27% reduction in carbon emissions by 2030 compared to 2017,
and carbon neutrality by 2050**



Carbon Inventory and Management

- In 2022, all listed companies of the Group's Taiwan sites completed carbon emission inventory and verification
- In 2024, the Group completed consolidated carbon emission inventory and assurance
- Established the Group carbon management platform to digitally integrate data from all units, significantly improving the completeness, timeliness, and accuracy of data collection



Site Energy Saving and Carbon Reduction

- In 2021, all listed companies of the Group's Taiwan sites completed ISO 50001 Energy Management Systems certification
- The Group's Taiwan sites continued to promote energy-saving and carbon reduction improvement plans, with cumulative carbon reduction achievements reaching 23,000 metric tons of CO₂e from 2023 to 2024
- Annually hold the Group Site Technical Case Presentation to promote the sharing and exchange of best practices and accelerate the application of carbon reduction technologies



Pioneering Renewable Energy

- Established a green power project team in 2020 to coordinate the strategic planning and execution of green power development
- By the end of 2025, the cumulative grid-connected capacity of the Group's invested solar power sites reached 9MW, generating over 11.25 million kWh annually, effectively reducing emissions by approximately 5,356 metric tons of CO₂e
- The Group actively continues to develop diversified renewable energy to enhance the resilience of future energy use

USI Group holds the "plant technology exchange meeting" annually and several "northern/Kaohsiung plants resource integration meetings" to achieve resource sharing and improve energy-saving and carbon-reducing performance through technical sharing and problem-solving discussions among plants.

The 2025 Group Site Technical Case Presentation was held in October, focusing on core themes of "Industrial Safety and Environmental Protection", "Equipment Preventive Maintenance", and "Energy Saving and Carbon Reduction".

More than one technical case was submitted by each of the 12 Taiwan plants for written review, and 7 site cases ultimately entered the final selection.

The final selection was jointly voted and scored by Group senior executives and presenting site representatives to select the outstanding technical cases of the year.

Following the solid presentations and careful evaluation, USI Kaohsiung Plant's "B-line Reduced Reaction Pressure Energy Saving Results" ultimately won first place, and Chairman Quintin Wu presented the certificate and prize money.

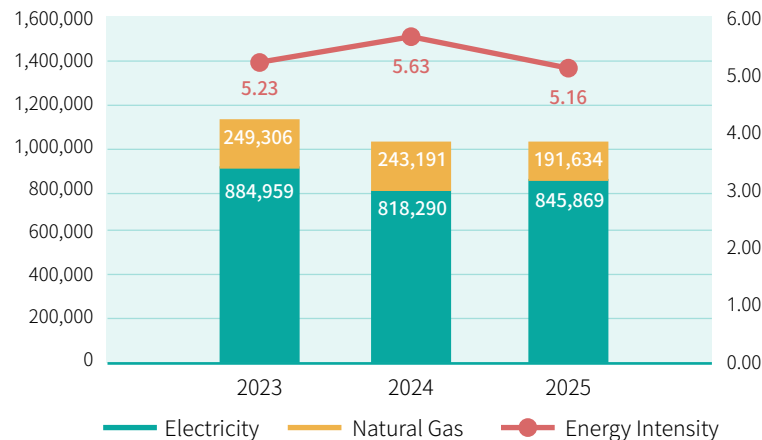


Energy Consumption Performance GRI 302-3

In 2023, total power consumption increased due to increased production volume, and energy intensity per unit of product was relatively high due to the production of high-value-added products. In 2024, natural gas consumption and energy intensity increased due to equipment failures and production line shutdowns.

In 2025, proactive promotion of energy saving and carbon reduction yielded significant results, successfully lowering energy intensity per unit of product.

Kaohsiung Plant Energy Consumption (GJ) and Energy Intensity (GJ/MT PE) over the Past Three Years



Note: Because diesel and gasoline consumption is far lower than electricity and natural gas, their data cannot be displayed in the chart above; please refer to the table on the right.

Power Saving Rate over the Past Three Years

Item	2023	2024	2025
Power Saving Rate (%)	1.72	1.88	1.70

Note 1: Data source: Energy Administration 2025 Energy User Energy Conservation Audit System Declaration Form.

Note 2: Calculated according to the Energy Administration's energy audit form formula, dividing the declared power savings of the year by (total annual power consumption plus declared power savings of the year).

Energy Consumption and Energy Intensity over the Past Three Years GRI 302-1 RT-CH-130a.2

Energy Category	Unit	2023	2024	2025
Electricity	GJ	884,959	818,290	845,869
Natural Gas	GJ	249,306	243,191	191,634
Diesel	GJ	502	555	284
Gasoline	GJ	312	322	296
Total Energy Consumption	GJ	1,135,079	1,062,358	1,038,084
Production Volume	MT	217,173	188,567	201,310
Energy Intensity	GJ/MT	5.23	5.63	5.16

Note 1: The calculation process refers to the unit heating value table of energy products announced by the Energy Administration. The energy conversion factors for electricity, natural gas, diesel, and gasoline are 860 kcal/kWh, 8,710 kcal/m³, 8,629 kcal/L, and 7,520 kcal/L, respectively, where 1 kcal = 4.187 kJ.

Note 2: Data source for natural gas, electricity, and other energy consumption is from energy billing statements; Data source for diesel consumption is from material requisition details;

Data source for gasoline consumption is from oil purchase invoices.

Note 3: The energy used by the company is non-renewable energy.

Note 4: The energy data coverage rate is 100%.

The average annual power saving rate from 2015 to 2024 was 1.45%, outperforming the requirement of the Energy Administration, MOEA's "Regulations for Energy Users Setting Energy Conservation Targets and Execution Plans" that energy users should achieve an average annual power saving rate of at least 1% from 2015 to 2024.

On January 2, 2025, the Energy Administration, MOEA announced the "Regulations for Energy Users Setting Energy Conservation Targets and Execution Plans for the Years 2025 to 2028". For users with a contracted power capacity exceeding 10,000 kW, the power saving rate target is 1.5%.

The Kaohsiung Plant's power saving rate in 2025 was 1.70%, outperforming the regulatory power saving target.



USI's planned target value and actual achieved value for the 2025 power saving plan, as well as the planned target value for 2026, are shown in the table to the right:

Year	2025		2026
Item	Planned Target Value	Actual Achieved Value	Planned Target Value
Power Saving Rate (%)	1.51	1.70	1.27

GHG Management

GRI 302-2、305-1、305-2、305-3

RT-CH-110a.1

Based on the ISO 14064-1:2018 GHG inventory standard and referencing the Ministry of Environment's GHG Inventory Registration Operation Guidelines, USI engaged external experts to assist the organization in compiling the GHG inventory and establishing a systematized system. The organizational boundary for the GHG inventory is set using the "control approach," where the organization accounts for 100% of the GHG emissions from facilities under its operational control. The types of GHGs inventoried include carbon dioxide CO₂, methane CH₄, nitrous oxide N₂O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride SF₆, and nitrogen trifluoride NF₃. The emission factors used are referenced from the Ministry of Environment's GHG Emission Factor Management Table Version 6.0.4, and the GWPs are referenced from the IPCC Sixth Assessment Report (2021).

The company has long attached importance to GHG management, voluntarily conducting GHG inventory operations early on, and has carried out external verification for the 2019 reporting year continuously since 2020. In line with the FSC's Sustainable Development Roadmap for Listed Companies, the company proactively deployed ahead of time, completing the standalone company inventory and assurance in 2023 (ahead of the 2024 regulatory schedule), and completed the GHG inventory and assurance operations for consolidated subsidiaries in November 2024 (ahead of the 2027 regulatory schedule). The standalone company inventory boundary for the 2025 reporting year includes USI Kaohsiung Plant, Guishan R&D Division, and Taipei Headquarters, adopting the 2023 inventory report.

In 2025, the total GHG emissions of USI Kaohsiung Plant, Guishan R&D Division, and Taipei Headquarters included Scope 1: 17,090 metric tons of CO₂e, Scope 2: 111,540 metric tons of CO₂e, and Scope 3: 463,720 metric tons of CO₂e. The Scope 1 and Scope 2 emissions for USI's consolidated financial statement companies in 2024 and 2025 were 133,970 metric tons of CO₂e and 128,650 metric tons of CO₂e respectively, with 2025 decreasing by 5,320 metric tons of CO₂e compared to 2024.

Scope 1 and Scope 2 Emissions of USI Sites

Site Code	Company	Category	Scope 1	Scope 1 Proportion (%)	Scope 2	Scope 2 Proportion (%)	Total
1	USI Corporation - Taipei Headquarters	Office	19.3247	16.2530	99.5745	83.7470	118.899
2	USI Corporation - Guishan Laboratory	R&D Center	9.9015	9.6108	93.1234	90.3892	103.025
3	USI Corporation - Kaohsiung Plant	Plant	17,064.7375	13.2891	111,347.2452	86.7109	128,428.144

Note 1: The emissions of the Taipei Office and Taoyuan Guishan Laboratory are well below 1%. Based on the principle of materiality, the 2023 inventory results will be adopted directly in the future.

Note 2: The Kaohsiung Plant adopts the 2024 inventory results.

GHG Inventory over the Past Two Years

Unit: 10,000 MT CO₂e/year

Category	Kaohsiung Plant		Guishan R&D Division		Taipei Headquarters	
	2024	2025	2024	2025	2024	2025
Year						
Scope 1	2.605	1.706	0.001	0.001	0.002	0.002
Scope 2	10.77	11.135	0.009	0.009	0.01	0.01
Scope 3 (Category 3) Indirect transportation emissions	0.024	0.018	0	0	0.001	0.001
Scope 3 (Category 4) Indirect emissions from products used by organization	47.01	46.367	0.002	0.002	0.003	0.003
Total	60.409	59.226	0.012	0.012	0.016	0.016

Note 1: Scope 1 refers to direct emissions from stationary combustion, direct emissions from mobile combustion, direct process emissions from industrial processes, and direct fugitive emissions from GHG releases in man-made systems.
Scope 2 refers to indirect emissions from imported electricity.
Scope 3 refers to other indirect emissions:
1. Indirect emissions from the transportation and treatment of solid and liquid waste.
2. Carbon emissions generated by employee commuting and business travel.
3. Carbon emissions generated during the production process of raw materials Ethylene and Vinyl Acetate.

Note 2: The Kaohsiung Plant is a GHG emission control unit of the Ministry of Environment, and its Scope 1 emissions account for 99.9% of USI's standalone company.

Note 3: Values are summed up using original inventory figures and displayed to three decimal places.

Scope 1 and Scope 2 Emissions of USI Consolidated Financial Statement Companies by Site

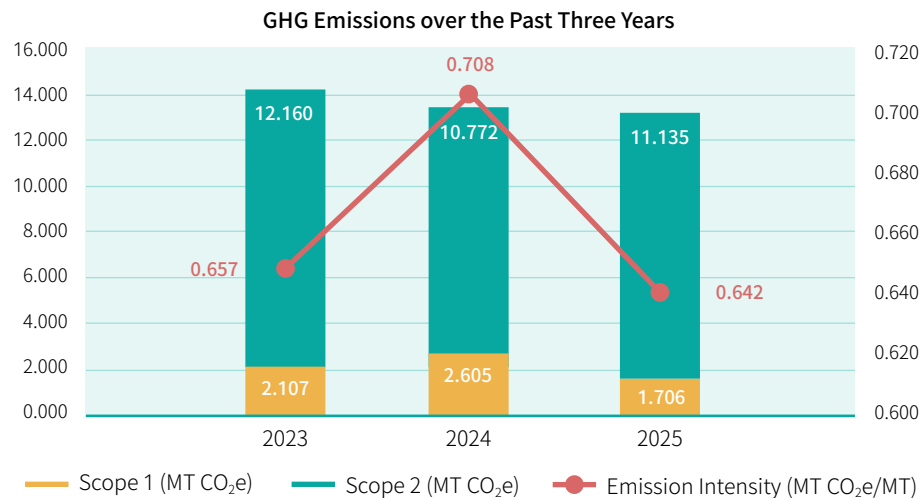
Year		Year 2024		Year 2025	
The Company	Emissions (MT CO ₂ e)	Intensity (MT CO ₂ e /NT\$1 million revenue)		Emissions (MT CO ₂ e)	Intensity (MT CO ₂ e /NT\$1 million revenue)
Scope 1 (Direct GHG Emissions)	17,254.2748			17,110.1245	
Scope 2 (Indirect GHG Emissions)	107,909.7667			111,539.9431	
Subtotal	125,164.0415			128,650.0676	
Consolidated Financial Statement Subsidiaries	Emissions (MT CO ₂ e)	Intensity (MT CO ₂ e /NT\$1 million revenue)		Emissions (MT CO ₂ e)	Intensity (MT CO ₂ e /NT\$1 million revenue)
Scope 1 (Direct GHG Emissions)	170,516.1938			152,350.9736	
Scope 2 (Indirect GHG Emissions)	396,472.3544			405,098.1226	
Subtotal	556,998.5481			557,449.0962	
Total	692,152.590	13.5716		686,099.1638	11.5544

Note 1: The annual inventory calculation adopts the GHG Protocol standard.

Note 2: If a site's carbon emissions account for less than 5% of the total emissions and there are no major operational changes, the first year (2023) emission data will be used for calculation.

Note 3: Assurance Institution: Ernst & Young, Limited Assurance under Assurance Standard 3410.

Although production increased in 2025, both emission intensity and total emissions decreased compared to 2024, demonstrating the effectiveness of energy saving and carbon reduction efforts. **GRI 305-4**



Year	2023	2024	2025
Scope 1 (MT CO ₂ e)	2,107	2,605	1,706
Scope 2 (MT CO ₂ e)	12,160	10,772	11,135
Emission Intensity (MT CO ₂ e/MT)	0.657	0.708	0.642

Note 1: The calculation boundary is the Scope 1+2 GHG emissions of USI.

Note 2: The electricity carbon emission factors are based on the latest data published by the Energy Administration, calculated as 0.494 MT CO₂e /1,000 kWh for 2023, 0.474 MT CO₂e /1,000 kWh for 2024, and 0.474 MT CO₂e /1,000 kWh for 2025.

Note 3: Diesel without biofuels was used in 2024, so the biomass combustion emissions are 0 kg CO₂e.

Note 4: Verified by Norway's DNV Verification Company (DNV) in accordance with ISO 14064-1:2018 standard requirements.

Energy Saving and Carbon Reduction Targets and Results **GRI 302-4** **RT-CH-110a.2**

USI's 2025 energy saving and carbon reduction execution plans and results are as shown in the table below. A total of 4 energy saving and carbon reduction plans were executed, with carbon reductions of 1,922 metric tons of CO₂e and an investment of NT\$10.88 million. **GRI 305-5**

Item	Plan Name	Category	Energy Savings	Unit	Carbon Reduction (MT CO ₂ e /year)	Investment Amount (NT\$ thousand)
1	Manufacturing Department III shutdown, chiller stops running	Power saving	3,468,564	kWh	1,644.1	44
2	Manufacturing Department I B-Line addition of modifier injection point at secondary compressor inlet	Power saving	43,501	kWh	20.6	1,000
3	B Line LDV opening adjustment to reduce secondary compressor load	Power saving	532,537	kWh	252.4	44
4	Demand bidding	Power saving	10,272	kWh	4.9	-
	Total	Power saving	4,054,874	kWh	1,922	1,088

Note 1: The carbon emission conversion factor for electricity is 0.474 MT CO₂e/1,000 kWh.

Note 2: Data source: Energy Administration 2025 Energy User Energy Conservation Audit System Declaration Form.

Note 3: Calculation method for Item 1: Calculate power savings based on equipment specifications and downtime.

Note 4: Calculation method for Item 2: Calculate power savings based on equipment operating current and production line operating time.

Note 5: Calculation method for Item 3: Calculate power savings based on equipment operating current before and after improvement and production line operating time.

Note 6: Item 4 represents electricity from demand response load management measures.

For 2026, 6 energy saving plans are planned for execution, with estimated power savings of 3,017,403 kWh, carbon reduction of 1,443 metric tons of CO₂e, and an investment amount of NT\$59.42 million.

2026 Energy Saving Plans and Estimated Targets

Item	Plan Name	Category	Energy Savings	Unit	Carbon Reduction (MT CO ₂ e /year)	Investment Amount (NT\$ thousand)
1	Manufacturing Department II air compressor renewal	Power saving	232,206	kWh	110.1	6,900
2	Cooling water tower fan material replacement	Power saving	357,193	kWh	169.3	2,000
3	Transformer renewal	Power saving	1,606,392	kWh	761.1	12,210
4	Manufacturing Department I primary compressor return power saving	Power saving Natural gas saving	37,026 8,100	kWh Cubic meters	34.4	1,000
5	Manufacturing Department II melt pump converted to AC variable frequency	Power saving	475,219	kWh	225.3	32,000
6	Lighting fixture replacement	Power saving	301,163	kWh	142.8	5,310
	Total	Power saving Natural gas saving	3,009,199 8,100	kWh Cubic meters	1,443	59,420

Note: Power savings of 3,009,199 kWh + natural gas savings of 8,100 cubic meters; the combined converted power savings equal 3,017,403 kWh.

Afforestation and Green Power Achievements

Forestation Adoption Program

- The company actively responds to national policies, and its relevant actions directly echo the policy direction of increasing forest area in "Forest 1-1: Implementing new afforestation on national, public, and private lands to increase forest coverage and carbon sinks" under "Taiwan's 2050 Net-Zero Transition Key Strategic Action Plan for Natural Carbon Sinks",
- USI collaborated with the Experimental Forest Administration, College of Bioresources and Agriculture, National Taiwan University to promote the "Forestation Adoption Program," utilizing professional technical teams to assist in tree planting and tending, and profoundly recognizing the benefits of tree planting for soil and water absorption of CO₂ and the importance of environmental ecological protection through this project.
- In December 2021, a contract was signed to donate NT\$9 million in afforestation funding over five years, adopting a total of 7,500 trees covering an area of about 5 hectares, with a donation period of 20 years.
- USI's 2025 afforestation results: 0.57 hectares in Xitou with 750 Taiwan Red Cypress trees, and 4.7 hectares in Neimaopu with 7,000 seedlings including Taiwan Incense Cedar, Luanta Fir, and Taiwan Zelkova.
- The workers are all hired locally (indigenous people from Xinyi Township / residents of Lugu Township), totaling 10 people. The carbon sequestration capacity is approximately 10 tons of carbon dioxide per hectare.
- Completed the Donation for the fifth phase of the Forestation Adoption Program



Solar Power Generation

- By the end of 2025, the cumulative grid-connected capacity of invested solar power sites had reached 9MW, generating over 11.25 million kWh annually.
- The Kaohsiung Plant built 478.8 kW of solar power generation equipment for self-generation and self-consumption in 2025, and it was completed in January 2026. Follow-up construction is being planned successively.

Green Power Procurement

- Procured 3,703,000 kWh of green power in 2025 and completed applications for 3,704 Renewable Energy Certificates (RECs), transmitting a total of 3.703 million kWh of power.

Product Carbon Footprint

USI began promoting product carbon footprint standards in 2021, gradually conducting inventories for its main products.

Based on life cycle assessment data, taking into account the GHG emissions resulting from direct and indirect activities or accumulated in the product throughout the product's life cycle, from raw material acquisition or generation from natural resources to final disposal at the end of life, verification was completed in accordance with ISO 14064-3:2006 and complied with the ISO 14067:2018 Product Carbon Footprint standard. The target products verified are Ethylene Vinyl Acetate Copolymer resins, and the declared/functional unit is per kilogram (including packaging).

According to the FSC's Guidelines for the Recognition of Sustainable Economic Activities, the technical screening criterion for standard polyethylene in the petrochemical industry must be less than or equal to 1.0823 metric tons of carbon dioxide equivalent per metric ton. The company's polyethylene products are all below the standard at the manufacturing end, satisfying the recognition conditions for sustainable economic activities.



Life Cycle GHG Emissions

Verify the declared unit emission of the product in question (Unit: kilograms of CO ₂ e)				Emissions per Functional Unit (Unit: Kg of CO ₂ e)
Life Cycle Stage	Raw Material	Manufacturing	Total	
EVA® UE2828	2.270	0.689	2.96	2.96
EVA® UE649-04	2.128	0.689	2.82	2.82
EVA® UE659	2.223	0.689	2.91	2.91



Added product carbon footprint inventory and assurance for High Density Polyethylene LH5920 in 2025; the total carbon footprint is 2.0446 kgCO₂e/kg (including upstream raw materials).



4.6 Raw Material Management

To address resource consumption and reduce environmental impacts in the plastics industry, the company has integrated "improving resource use efficiency" and "building a green material cycle" into the core of its circular economy policy. Through the recycling of process raw materials and the introduction of eco-friendly materials, it promotes full life cycle sustainability management.

USI's production products include Low Density Polyethylene (LDPE), Ethylene Vinyl Acetate Copolymer (EVA), High Density Polyethylene (HDPE), and Linear Low Density Polyethylene (LLPDE), and its main raw materials are Ethylene, Vinyl Acetate (VAM), and Butene; Auxiliary materials are mainly Alkylate, Propylene, and Isopentane. Raw materials are strictly used by the Kaohsiung Plant, and the raw material data coverage rate is 100%.

In 2025, ethylene usage was approximately 168,000 metric tons, accounting for about 81.6% of all significant raw material usage, followed by VAM at about 17.2%. 96% of the ethylene was procured locally in Taiwan; for details, please refer to [3.3 Supply Chain Management](#). **GRI 301-1**

Packaging Material Management

Based on the weight of packaging bags for each product at the Kaohsiung Plant and estimated by sales volume, the packaging material usage for the 2024 reporting year was 898 metric tons, and increased by 121 metric tons in the 2025 reporting year.

High-sales-volume customers are transported via tank trucks, saving packaging material usage.

2025 Packaging Material Weight

Unit: kg

	Packaging Bag	Jumbo Bag	Paper Bag
Manufacturing Department I	588,445	84,437	0
Manufacturing Department II	175,911	122,529	43,768
Manufacturing Department III	3,169.6	640	0
Subtotal	767,526	207,606	43,768
Total Weight			1,018,900

Due to contamination concerns, packaging materials are not recycled for reuse; however, the direction for packaging material testing and reduction is to use plastic bags remade with mixed recycled materials and to change stretch film box packaging to bare packaging to save cardboard boxes.

Raw material recycling: The product manufacturing process is committed to improving raw material recovery efficiency, hoping to reduce the consumption of raw materials. Recovery methods include the improvement project of the high-pressure recovery system in Plant II, connecting new and old tanks, installing a condenser at the front end of the Ethylene Purification Tower (EPT), and adding a compressor leak gas recovery system, etc. In 2025, the raw material recovery rate was 13.9%, and approximately 28,400 metric tons of VAM, Butane-1, and Isopentane were recovered, saving NT\$697 million. **GRI 301-1**

Applied for ISO 14021 PIR (Pre-Consumer material) certification: Target (EVA/HDPE) waste materials generated during the factory production process. Through a recycling and reuse procedure, they become plastic raw materials. Passed ISO 14021 international recycling certification in 2025. For details, please visit the [official website](#).

Introduction of ISCC certification for bio-ethylene: Bio-ethylene is ethylene extracted from renewable resources. As a substitute for traditional petrochemical ethylene, it has advantages such as lowering carbon emissions, reducing carbon footprints, renewable sustainability, biodegradability, decreasing reliance on fossil fuels, supporting green economies, and utilizing renewable resources.

It is a recoverable and renewable green alternative material that helps reduce carbon dioxide emissions, promotes environmental protection, and bears significant meaning in promoting sustainable economic development. The project is currently ongoing.

