CH4 Eco-Friendly

4.1 Resource Management GRI 3-3, 301-1, 301-2, 301-3, 303-1, 303-2, 303-3, 303-4, 303-5

4.2 Climate Change and Energy Management GRI 2-23, 2-24, 3-3, 201-2, 302-1, 302-3, 302-4, 305-1, 305-2, 305-4, 305-5

4.3 Emissions Management GRI 3-3, 305-6, 305-7

4.4 Waste Management GRI 306-3, 306-4, 306-5

Performance Highlights

- Reduced electricity consumption by 1.58 % on average each year from 2015 to 2024, better than the regulatory requirement of 1%.
- GHG emissions in 2024 were 100,912 MT CO2e, by 13.9 % less that of the base year (2017).
- In 2024, the water reclamation rate was 97.50%.
- The 2024 Energy Saving and Carbon Reduction Program saved energy by 8,740 GJ and reduced carbon by 1,076 MT CO2e.
- The waste volume in 2024 decreased by 41.86%, compared to that of the previous year.

Material Topics

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

SDGs Correspondence

Certified Management System

ISO 14001 Environmental Management Systems (Left)
Validity Period: May 03, 2028

ISO 50001 Energy Management Systems (Right)
Validity Period: November 19, 2025

4.1 Resource Management

Raw Material Management

Material Topics: Raw Material Management; Corresponding Sustainability Principle: Sustainable Development GRI 2-25, 3-3

Management Approach and Components	Impact Management	Targets Execution and Performance of Management Approach	Evaluation of Management Approach
The Significance to Asia Polymer Quality control of raw materials and effective recycling for reuse can reduce production costs and lower environmental impact.	**Positive/Negative Impacts** · Continuation of 2023 Management Tracking · Positive Impact - Improve the efficiency of raw material usage, reduce costs, and decrease waste.	**2024 Goals** · Ethylene efficiency ≦ 1.009 · Equipment operation rate ≧ 96.6% · Flexible intermediate bulk container (FIBC) recovery rate ≧ 78% · Recycling and reuse of waste film rolls ≧ 60MT	**Effectiveness Assessment** · Include ethylene efficiency as a quality target to control achievement rates. · Include material recycling and reduction volumes in routine management.
Management Practice and Objectives Lower production costs, reduce waste rate monthly , and lower environmental impact through monitoring ethylene efficiency and controlling flexible intermediate bulk container recovery.	**Processes to Remediate and Prevent Negative Impacts** —	**2024 Performance** 1. Ethylene efficiency 0.9973 (✓) 2. Equipment operation rate 97.7% (✓) 3. Flexible intermediate bulk container (FIBC) recovery rate 79.5% (✓) 4. Recycling and reuse of waste film rolls 65.4MT (✓)	**Adjust Management Approach** · Periodically review ethylene efficiency at the weekly plant affairs meeting · The Finished Product Section produces statistics and follows up on the FIBC recovery.
Strategy · Raw materials use efficiency monitoring · Materials recycling and reuse		**Short-Term (< 3 years) Goals** · Ethylene efficiency ≦ 1.009 · Equipment operation rate ≧ 96.6% · Flexible intermediate bulk container (FIBC) recovery rate ≧ 78% · Recycling and reuse of waste film rolls ≧ 60MT **Medium- Long-Term (≧ 3 years) Goal Planning** · Increase dispatch flexibility of the material supply through the Kaohsiung ICT Phase II investment project to increase ethylene supply by about 19%/ per day.	

Materials Usage

The APC Linyuan Plant mainly produces low density polyethylene (LDPE) resins and ethylene vinyl acetate copolymer resin (EVA), with ethylene and vinyl acetate monomer (VAM) being the major materials and mineral spirit the secondary material. We do not use recycled materials for the major materials or recycle our products for reuse.

Usage of Major Raw Materials at the Linyuan Plant in the Past 3 Years

Materials Type	Unit	2022	2023	2024
Ethylene	MT	107,936	109,548	112,125
VAM	MT	24,270	25,163	20,964

Material Usage and Recycling GRI 301-1, 301-2

The Linyuan Plant packs products in bags or in containers. The former includes PE bags, flexible intermediate bulk containers (FIBC), container bags, top sheets, and shrinkable films. No recycled materials are used.

To minimize the environmental impact of product packaging, customers recycle and reuse packaging materials such as PE bags, container bags, Top Sheets, and shrinkable films. Flexible intermediate bulk containers (FIBC) are mostly being used for temporary packaging of customers' finished goods or debris and recovered by the Linyuan Plant for reuse. FIBCs are collected and returned during the delivery by the transport company and each FIBC is reused for about four times on average.

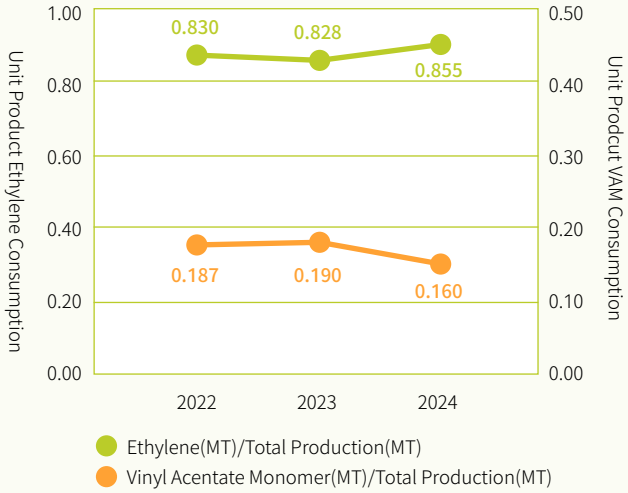
Reuse Volume and Recovery Rate of Packaging Materials in the Past 3 Years GRI 301-3

Packaging Material	Unit	2022		2023		2024	
		Usage	Recovery Rate	Usage	Recovery Rate	Usage	Recovery Rate
PE bags	MT	474	Customers recycle themselves.	458	Customers recycle themselves.	423	Customers recycle themselves.
Top Sheets and shrinkable films	MT	61	Customers recycle themselves.	55	Customers recycle themselves.	52	Customers recycle themselves.
Flexible intermediate bulk container	MT	146	78.2 %	136	78.3 %	206	79.5 %

Note: 1. Flexible intermediate bulk container (FIBC) recovery rate = (Number of FIBCs recovered / Number of FIBCs sold), using domestic sales as the basis for recovery calculation. 3. Customers have not specified container bag packaging for shipment for many years, so the statistics on container bag usage have been suspended.
2. The flexible intermediate bulk containers recovered by customers are sometimes partially damaged by customers or contaminated during transportation, which impedes the effective improvement of the recovery rate. We will communicate and coordinate with customers to ensure the recovered flexible intermediate bulk containers can be reused.

In 2024, due to the unfavorable market conditions for EVA products and a slight increase in LDPE product demand, the total production was 131,105 MT, a slight decrease of 0.86% compared to that of 2023. With adjustments in production and sales, the unit product VAM consumption decreased, while the unit product ethylene consumption increased. EVA will gradually develop towards high-value and high VA content products.

Product Consumption of Major Raw Materials at Linyuan Plant in Past 3 Years



Enforce Circular Economy

For the scraps generated during the production process, such as slag and dirty waste, as well as the waste film rolls produced during product quality testing (blown film inspection), these by-products are not recyclable for profit but can still be repurposed as valuable resources. In 2024, the Linyuan Plant generated 208.9 metric tons of production scraps and 65.4 metric tons of waste film rolls. These materials were provided to downstream businesses for reuse, helping to reduce environmental impact.

Water Resource Management

Material Topics: Water Resource Management; Corresponding Sustainability Principle: Sustainable Development GRI 2-25, 3-3

Management Approach and Components

The Significance to Asia Polymer

Global warming leading to extreme weather has caused a tight water situation in Southern Taiwan in recent years, resulting in government units, stakeholders, and corporations are emphasizing the importance of water resources management. Through water conservation measures and programs, precious water resources are recycled and resused.

Management Practice and Objectives

- Reduce pollution and emission through process and source improvement and then end-of-the-pipe treatment promote water resource recycling and reuse.
- Continue to implement water conservation and emission reduction, as well as water resource reclamation management.

Strategy

- Management and follow-up of water reclamation rates.
- Continuous follow-up and management of unit product water consumption.
- Continuous follow-up and management of process improvement projects related to water conservation.
- The data boundary of water resource management covers the Linyuan Plant, and data coverage is 100%.

Impact Management

Positive/Negative Impacts

- Negative Actual Impact - Insufficient reservoir water supply.

Processes to Remediate and Prevent Negative Impacts

- Implement three-stage water conservation approaches in coordination with the government's water rationing measure to save water by 10%.
- Continuous follow-up and management of water reclamation rates, unit product water consumption, and process improvement projects for water conservation.

Targets Execution and Performance of Management Approach

2024 Goals

- Water reclamation rate >95%
- Water consumption per unit product: <4.0 M^3/MT

2024 Performance

1. Water reclamation rate 97.5% (✓)
2. Water consumption per unit product: 3.70 M^3/MT (✓)

Short-Term (< 3 years) Goals

- Water reclamation rate >96%
- Water consumption per unit product: <3.9 M^3/MT

Medium- Long-Term (≧ 3 years) Goal Planning

- Water reclamation rate >97%
- Water consumption per unit product: <3.8 M^3/MT
- At least one water conservation-related process improvement project annually.

Evaluation of Management Approach

Effectiveness Assessment

- Water Conservation Statistics
- Water Bill
- Regular calibration of flow meters
- ISO 9001: Continuous follow-up and management of unit product water consumption.

Adjust Management Approach

- Periodically review ethylene efficiency at the weekly plant affairs meeting
- The Finished Product Section produces statistics and follows up on the FIBC recovery.

Water Source for the APC Linyuan Plant

Water Resource Risk Level: Low to Medium (10~20%)

Water source: Third-party water Type: Fresh water (≦ 1,000 mg/L TDS)
Tap water: Supplied by the Gaoping River Weir via the Fengshan Reservoir; Pure water: Supplied by the Taiwan VCM Corporation

1. Adopted the water risk assessment tool developed by the World Resources Institute (WRI).
2. The data boundary of water resource management covers the Linyuan Plant, and data coverage is 100%.
3. Our company defines regions with water stress exceeding 40% as areas of Water Stress, and uses this as a significant basis for water management and risk response.

Item	2023	2024	Increase/Decrease
Water consumption of the Linyuan Plant (thousand cubic meters)	489.730	485.689	Decrease by 0.8%
Water discharge of the Linyuan Plant (thousand cubic meters)	165.554	170.558	Increase by 5.9%
Total water consumption of the Linyuan Plant (thousand cubic meters)	324.176	315.131	Decrease by 4.3%
Water Reclamation Rate (%) (Reuse Rate, R2)	97.36	97.50	Increase by 0.14%
R2 = (Total recycled water volume + Total reclaimed water volume + Rainwater withdrawal + Condensate withdrawal - Circulation volume in cooling towers) / (Total water withdrawn + Total reclaimed water volume + Total recycled water volume - Circulation volume in cooling towers) X 100%			

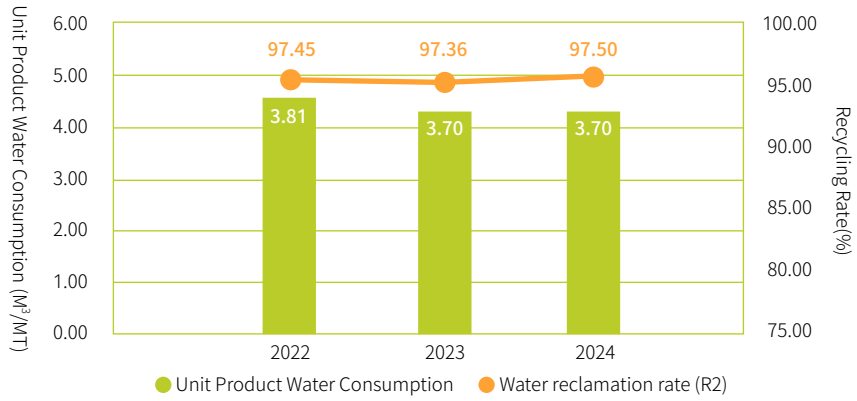
Note: Restatements of Information
1. After assurance by the third-party verification unit, the total water consumption will include the volume of purified water and emergency water truck loading for droughts.
2. The water reclamation rate is presented using the R2 calculation method.

GRI 2-4, 303-1, 303-3, 303-4, 303-5 SASB RT-CH-140a.1

Water consumption per unit product in 2024 is 3.7 M^3/MT, the same as the unit water consumption last year and still below the goal of 4.0 M^3/MT.

The APC Linyuan Plant reclaims condensate and recycles water of the cooling water tower for reuse. In accordance with the "Directions for Review of Water Consumption Plan" promulgated by the Ministry of Economic Affairs, the water reclamation rate in 2024 was 97.50%, which was the same as that of 2023. The graph below shows the unit product water consumption and unit product water reclamation rate of the Linyuan Plant in the past three years. Moreover, the Company attaches great importance to the impact of global warming and climate change. In response to the water crisis in the Kaohsiung region in recent years, we will continue to propose water solution policies to senior management in 2025.

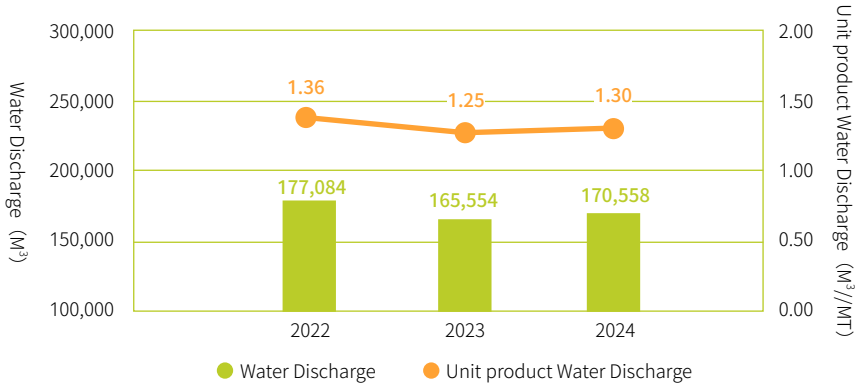
Unit product water consumption and water reclamation rate of the Linyuan Plant in the past three years



Effluent Management GRI 303-2

In the Linyuan Plant, solid polyethylene products are produced via gas compression. After equipment cooling, dicing and cooling, and rinsing product storage tanks, tap water is collected in the equalization basin. Hence, effluents can be discharged free from contamination with a quality better than the legal requirements. It is transported to the dedicated sewerage system via underground pipelines and discharged to the wastewater treatment plant of the Linyuan Industrial Park for treatment.

The 2024 effluent volume increased by 3.0% over 2023 to 170,558 M^3; the volume of unit product effluent was 1.30 M^3/MT. Due to new product development testing and quality adjustments, the required ice water replacement volume increased, resulting in a higher volume of unit product effluent compared to that of 2023.



The major effluent testing items in the Linyuan Plant include **suspended solids (SS), chemical oxygen demand (COD), and pH**. The periodic report data is lower than the sewerage water quality limits.

The table below shows the results of major water quality test items of the Linyuan Plant in the past three years:

Unit: mg/L

Test Item	2022	2023	2024	Emission Standard
Suspended Solids	9.18	5.51	11.29	**≦ 25**
Chemical Oxygen Demand	40.72	32.77	38.57	**≦ 90**
pH	7.52	7.46	7.39	**6~9**

All items of discharge water quality control tests in 2024 were within the qualified range, with no violations of discharge permission incidents.

GRI 303-2 SASB RT-CH-140a.2

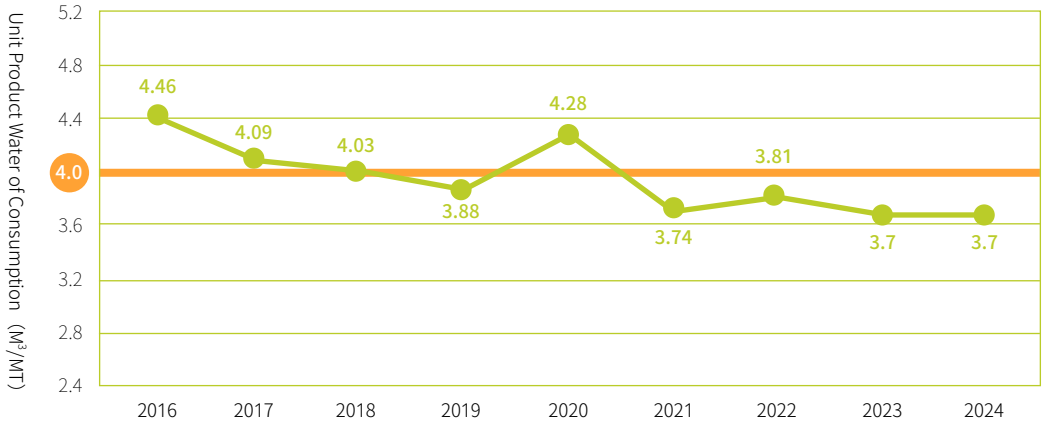
Water Conservation Measures

The enthalpy of vaporization of heat removal equipment and cooling water towers is the main source of water consumption at APC. Over the years we have implemented various water conservation programs, such as replacing the absorption chiller with the electric chiller, waste heat recovery, dicing soft water management, and increasing the concentration factor of cooling water. In 2024, by maintaining the efficiency of heat exchangers and improving leak-prone equipment, the unit product water consumption remained at the same level as that of the previous year.

Due to global warming and climate change, the situation of industrial water supply in Taiwan has been worsening in recent years. Apart from adopting progressive water rationing, the government also actively combined the wastewater discharged from various processing zones and industrial parks and further planned and built wastewater recycling plants in response to water shortages. After evaluating the construction and operational costs of in-house wastewater recycling system, we have temporarily postponed the establishment of a small-scale wastewater recycling system and planned to cooperate with government policy on wastewater recycling, and partially use the regenerated water from government-constructed wastewater reclamation plants for internal use, to achieve a win-win advantage for both the government and businesses.

SASB RT-CH-140a.3

Water Conservation Measures



Note: The target value of unit product water consumption in 2024 is 4.0 M^3/MT

The APC Linyuan Plant stage response to the government's water rationing measures:

Stage 1

- Promote water conservation to employees.
- Reclaim dicing water and cooling water for low-level water use.
- Reclaim office rinsing water for plant irrigation.

Stage 2

- Increase the concentration factor of cooling water tower water (from 5.5 times to 7.5 times).
- Reduce dicing water replenishment of production lines.
- Temporarily suspend unnecessary cleaning of product storage tanks and floor.

Stage 3

- Reduce the frequency of fire water testing andpostpone fire drills.
- Temporarily suspend supplying the employee bathroom for washing.
- Activate distillation and purification only when the liquid in the reclamation tank is at the high liquid level.

The three-stage measures can save about 10% of water, and purchase ground-water to supplement with water trucks when necessary.

2024 Water Conservation Program

Type	Energy Saving Management Program	Implementation Benefits		
		Annual Savings in Pure Water Consumption (M^3)	Annual Savings in Pure Water Expenditure (unit: NT$ ten thousand)	Engineering Expenses (unit: NT$ ten thousand)
Process Improvement	Line 3 V-1327/V-1328 Condensate Recovery	11,626	46.54	42

4.2 Climate Change and Energy Management

Material Topics: Climate Change and Energy Management; Corresponding Sustainability Principle: Sustainable Development GRI 2-25, 3-3

Management Approach and Components

The Significance to Asia Polymer

Extreme climate impacts human lives and properties, which is an inevitable global issue. In response to the EU policy, companies need to prepare in advance for impact response.

It is necessary for businesses to take immediate action to enhance energy efficiency and reduce GHG emissions.

Management Practice and Objectives

Establish the ISO 50001 Energy Management System, improve energy performance indicators through energy-saving measures, enhance energy use efficiency, and voluntarily monitor GHG emissions to fulfill the commitment of voluntary GHG reduction and legal compliance. We analyze the risks and opportunities of climate change to reduce the financial loss caused by extreme weather conditions in production operations.

Strategy

- Establishing Energy Conservation and Carbon Reduction Commitment.
- Enhance Energy Efficiency
- Legal Compliance
- Climate Change Risk Response

Impact Management

Positive/Negative Impacts

- Negative Actual Impact- Rising Energy Costs
- Negative Actual Impact - Insufficient Electricity Supply
- Negative Potential Impact - Carbon Fee Collection

Processes to Remediate and Prevent Negative Impacts

- Review in-house energy conservation and carbon reduction programs annually, in coordination with the Group Energy Management Department.
- Plan and build generation sets to ensure electricity redundancy during power supply disruption.
- Plan and implement green power strategies within the group: APC will use green power (solar PV) of about 2.5 GWh in 2025 by law.

Targets Execution and Performance of Management Approach

2024 Goals

- GHG emissions <0.803 MT CO_2e/MT
- Unit product energy consumption < 0.69 GJ/MT
- Completed the GHG inventory and verification for the consolidated subsidiary companies of APC.

2024 Performance

1. GHG emissions: 0.770 MT CO_2e/MT (✓)
2. The GHG emissions have been reduced by 13.9% compared to the base year. (✓)
3. Unit product energy consumption 5.94 GJ/MT (✓)
4. Completed the GHG inventory and verification for the consolidated subsidiary companies of APC in April and May 2024. (✓)

Short-Term (< 3 years) Goals

- GHG emissions <0.730 MT CO_2e/MT
- The 2025 Energy Saving and Carbon Reduction Program aims to reduce carbon by 1,685 MT CO_2e.
- It is anticipated that approximately 2.5 million kWh of solar green electricity, representing 10% of the contracted capacity, will be used in 2025.
- A self-consumption solar PV power plant (494 kW) will be installed in 2025.
- Unit product energy consumption <5.76 GJ/MT

Medium- Long-Term (≧ 3 years) Goal Planning

- GHG emissions <0.721 MT CO_2e/MT
- Goals for 2030 emissions: 0.634 MT CO_2e/MT
- Achieve a 27% reduction in carbon emissions by 2030 compared to the baseline year, and reach carbon neutrality by 2050.
- Unit product energy consumption <5.51 GJ/MT

Evaluation of Management Approach

Effectiveness Assessment

- Included energy conservation and carbon reduction programs in the energy management system for progress control.
- Monitor, measure, and control Energy Key Performance Index and review the differences monthly.
- "Energy Conservation Audit System Report of Energy Users" of the Energy Administration.
- "Regulations of GHG Inventory Registration Management" of the Environmental Protection Administration, voluntarily undertake the GHG inventory.

Grievance Mechanism

- "Contact Us" email section on the APC website.
- Survey on issues that concern stakeholders.

Adjust Management Approach

- USIG Technology Exchange Meeting
- Energy Management System Management Review Meeting

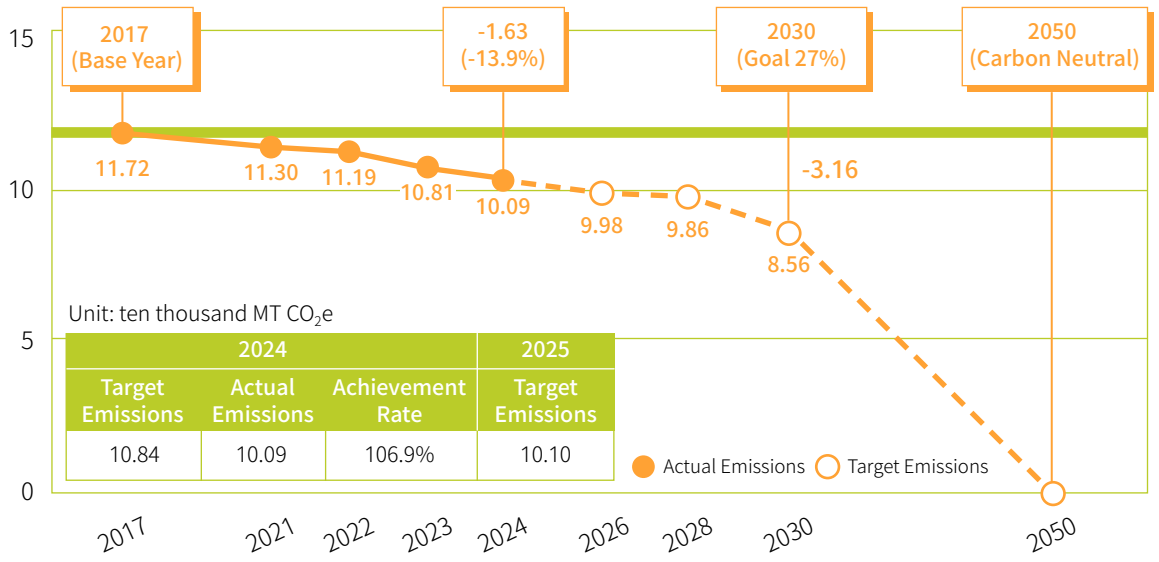
Climate Change Risk Management GRI 2-23, 2-24

Climate change is a universal challenge. To keep up with the world and match the demand for sustainable development, Taiwan announced the amendment of the "Greenhouse Gas Reduction and Management Act" to the "Climate Change Response Act" on February 15, 2023. Facing the impact of climate change, carbon reduction has become a global goal. To enhance carbon reduction, **USIG set the 2030 carbon reduction target which is "carbon reduction by over 27%, to that of compared to 2017, by 2030" in early 2022 and set "Carbon neutrality by 2050" in 2023 as the Long-term Goals of the Corporation**.

In order to achieve the corporate sustainability vision, USIG has actively implemented corresponding response strategies and management mechanisms with practical actions. The group comprehensively implements ISO 14064-1 GHG Inventory and Assurance, as well as plans and implements carbon reduction programs. The group also actively develops external renewable energy sites. By the end of 2024, the accumulative on-grid capacity of solar PV sites has reached 8.6 MW, which can generate about 10.73 million kWh of green power annually.

APC plans its carbon reduction pathway according to the Group's 2030 carbon reduction goals. **The GHG emissions in 2024 have been reduced by 13.9% compared to that of the base year (2017),** with the 2025 target emission levels achieved in advance. We will continue to strive for even lower emission targets and will implement the energy-saving carbon reduction program more actively in the future. **The Medium-term Carbon Reduction Strategy** will proceed towards the transition to low-carbon energy, enhancement of energy efficiency, intelligent monitoring, and the setup and use of renewable energy. **The long-term carbon reduction strategy** will continuously focus on low-carbon fuels, carbon capture, reuse technology, and negative carbon emissions technology, to implement the carbon neutrality goals and promote sustainable development.

Descriptions
1. We set 2017 as the base year for total Greenhouse Gas Emissions.
2. Based on the results of the ISO 14064-1 external verification in 2022, we revised the carbon emissions in base year 2017 to 117,228 MT CO_2e (formerly 110,863 MT CO_2e).



Unit: ten thousand MT CO_2e

2024			2025
Target Emissions	Actual Emissions	Achievement Rate	Target Emissions
10.84	10.09	106.9%	10.10

Carbon Reduction Planning and Action

Short-term - Implement energy saving and carbon reduction programs, replace energy-saving equipment, use green electricity.

Medium-term - Transition to low-carbon energy, Enhance energy efficiency through intelligent measures, Build green power (solar PV) installations.

Long-term - Carbon capture technology, Negative carbon emission technology, Use of low-carbon fuels.

APC utilizes the framework provided by the Task Force on Climate-related Financial Disclosures (TCFD) to identify climate-related risks and opportunities, assess risks and opportunities from different departments, evaluate financial impacts, and establish response plans. GRI 201-2

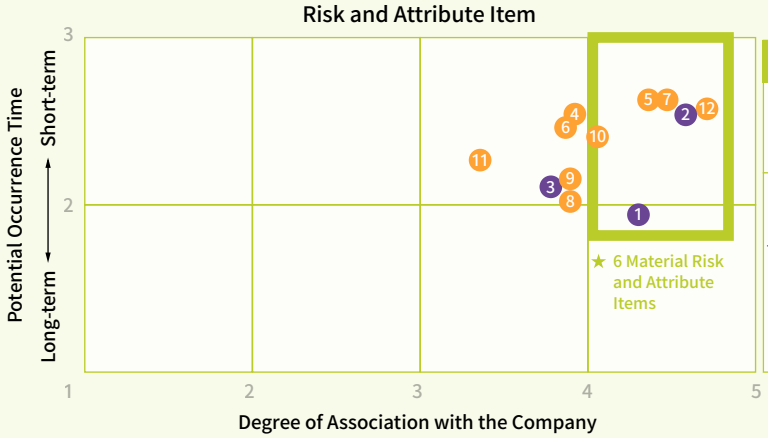
Climate Change Management Structure

Type		Management strategy and action
Governance	ESG Committee	As the highest governance body of climate change management chaired by independent directors, it reports climate change planning, implementation and performance to the Board of Directors every year
	Operations Management Meeting	Chaired by the Board chairman, it plans and implements materiality policies for energy saving and carbon reduction and reports the results from time to time.
	Group Environmental Quarterly Meeting	As the highest governance body of the USIG's energy management, it reports the planning and progress to the Group's chairman each quarter and makes decisions on energy management
	Group Green Power Team	As the USIG's responsible unit for green power promotion, it reports the status of and future plans for green power development to the Chairman every month
Strategy	Scenario analysis	Assess the physical risk based in the different climate scenarios
	Identification of Risks and Opportunities	Based on the level of association with risk factors and the likelihood of occurrence, conduct materiality risk and opportunity assessments for operational feasibility and development potential of opportunity projects
	Assessment of Potential Financial Impact	Assess the potential financial impacts of identified material risks and opportunities
Risk Management	Implementation of TCFD	Identify risks and opportunities based on the TCFD framework, communicate with all responsible units, and confirm by senior management
	Report of identification results	Include them in the annual risk assessment. The head of the Sales & Marketing Division reports the control measures and management performance to the Audit Committee and the Board of Directors every year
Indicators and Targets	Group Energy Management Targets	Set energy management targets within the group's carbon reduction initiative, with 2017 as the baseline year, aiming for a 27% reduction by 2030, and achieving carbon neutrality by 2050
	Climate-Related Response Strategy	The Short-term (<3 years) initiatives include replacing old equipment, enhancing energy efficiency, installing solar power generation facilities, implementing green procurement practices, and developing measures for water and drought response to mitigate the impact of carbon levies. The Medium-term (3~5 years) carbon reduction Strategy is heading towards the Transition to low-carbon energy, energy efficiency enhancement, intelligent monitoring, and installation and use of renewables. The Long-term (>5 years) carbon reduction strategies focus on exploring low-carbon fuels, carbon capture and reuse technologies, and negative emissions technologies.
	GHG emissions disclosure	Disclose the data of Scopes 1, 2, and 3 GHG emissions in the ESG report yearly and review the causes for changes periodically

Identification of Risks and Opportunities Due to the Impact of Climate Change GRI 201-2

In response to intensifying global climate change, APC continues to utilize the TCFD framework to deepen the understanding of potential risk items that may be faced under extreme climate conditions, and acquire new business opportunities. Referencing the Taiwan Climate Change Projection Information and Adaptation Knowledge Platform (TCCIP) and the National Science and Technology Center for Disaster Reduction, analyzed projected changes in temperature, rainfall, flooding, and drought from 2016 to 2035 under the RCP 8.5 scenario and identified three physical risk issues. In addition, identified nine transition risks and 12 opportunity issues, totaling 24 potential risk and opportunity issues, based on the group's strategy, industry characteristics, Intended Nationally Determined Contribution (INDC), and TCFD indicators. Through a survey conducted with the ESG Committee and senior unit managers, we assessed the relevance of each risk to company operations and the duration of potential impacts, as well as the development and viability of each opportunity. A total of 9 questionnaires were collected. After statistical analysis by the group, 10 materiality climate issues were identified (2 items of physical risk, 4 items of transition risk, and 4 items of opportunity). APC evaluates potential financial impacts from 10 materiality risk and opportunity items, devises corresponding strategies, and establishes management mechanisms. The aim is to understand the potential effects of climate change across various aspects, reduce operational disruptions caused by extreme weather events and foster a resilient climate change culture.

According to the duration of impact, climate-related risk items are divided into 3 intervals: short-term (< 3 years), medium-term (3-5 years), and long-term (> 5 years). Climate-related opportunity items are categorized into 5 levels based on the impact on the company's developmental potential and the technical feasibility. The corresponding details are shown in the table below:



Category	Item	Duration
Physical Risk	Flooding	Short-term (<3 years)
	Drought	Short-term (<3 years)
Transition Risk	Carbon Fee	Short-term (<3 years)
	Renewable Energy Regulations - Risk of Energy-heavy Industries Clause	Short-term (<3 years)
	Transition of Low-carbon Technology	Medium-term (<3-5 years)
	Increase in the Price of Raw Materials	Short-term (<3 years)

Physical Risk
- ★ 1 Flooding
- ★ 2 Drought
- 3 High-temperature

Transition Risk
- 4 Government Regulation or Oversight
- ★ 5 Carbon Tax/Fee
- 6 Product Efficiency Regulations and Standards
- ★ 7 Renewable Energy Regulations
- 8 Changes in Customer Preferences
- 9 Credit Risk
- ★ 10 Transition of Low-carbon Technology
- 11 Uncertainty of Market Information
- ★ 12 Changes in the Price of Raw Materials

Descriptions: Development Potential for Company Operations (from low to high: 1 to 5 points); Feasibility for Company Operations (from low to high: 1 to 5 points)
Material Opportunity Threshold (Development Potential for Company Operations 4.6 points or above, and Feasibility for Company Operations 3.8 points or above)

Category	Item	Developmental	Technical easibility
Opportunity	High-efficiency Production	Progressive and aligned with the existing policies of the company.	Expanding development
	Reduce water usage and water consumption		In development
	Use low-carbon energy		Expanding development
	R&D and Innovation of New Products and Services - Research and development of low-carbon and energy-saving products.		Expanding development

Opportunity
- 1 Adopt more Efficient Transportation Methods
- ★ 2 Use more efficient production and distribution processes.
- 3 Recycling and Reuse
- 4 Adopt more efficient buildings.
- ★ 5 Reduce water usage and water consumption
- ★ 6 Use low-carbon energy
- 7 Use new technology
- 8 Participation in the Carbon Trading Market
- 9 Development and/or increase of Low Carbon Goods and Services
- ★ 10 R&D and Innovation of New Products and Services
- 11 Enter new markets
- 12 Utilize public sector incentive measures

Descriptions: Development Potential for Company Operations (from low to high: 1 to 5 points); Feasibility for Company Operations (from low to high: 1 to 5 points)
Material Opportunity Threshold (Development Potential for Company Operations 4.6 points or above, and Feasibility for Company Operations 3.8 points or above)

Financial Implications and other Risks and Opportunities due to Climate Change and Countermeasures GRI 201-2

Climate Change Topic	Topic Type (Impact Occurrence Time)	Description of Risk and Opportunity Items	Potential Financial Impact	Countermeasures
Flooding	Physical risk/ chronic (Short-term, <3 years)	According to the Water Resources Agency, if 500mm of rain falls within 24 hours, the plant area is estimated to experience flooding of 0 to 0.5 meters for 1 day. Due to the impact of the aforementioned heavy rainfall/flood inundation, the plant shutdown caused by flooding resulted in a decrease in revenue.	**Increase in capital expenditure and decrease in revenue** The maintenance of drainage systems and detention basins, along with irregular personnel inspections and cleaning of ditches, increases financial expenditure by NT$ 1.8 million per year.	1. Enhance the foundation of key equipment 2. Increase flood prevention and drainage measures. 3. Regularly inspect the drainage systems in the plant to ensure they are unobstructed.
Drought	Physical risk/ chronic (Short-term, <3 years)	Due to climate change leading to global warming, climate patterns are no longer as regular as they used to be. Especially in the southern region of Taiwan, there have been prolonged periods without rainfall in recent years. It is essential to be mindful of water usage to avoid production line shutdowns.	**Increase in operating costs** If there is a water shortage, external water truck purchases will be necessary, and in severe cases, production capacity will decrease or lead to a complete shutdown. The estimated cost of purchasing water is expected to increase by more than NT$ 40 thousand per day.	1. The APC Linyuan Plant stage response to the government's water rationing measures: Stage 1 (1) Promote water conservation to employees. (2) Reclaim office rinsing water for plant irrigation. (3) Reclaim dicing water and cooling water drainage for low-level water use. Stage 2 (1) Increase the concentration factor of cooling water tower water (from 5.5 times to 7.5 times). (2) Reduce dicing water replenishment of production lines. (3) Temporary suspend unnecessary cleaning operations. Stage 3 (1) Reduce the frequency of fire water testing, postpone fire drills. (2) Activate the distillation column only when the liquid in the reclamation tank is at the high liquid level. (3) Temporarily suspend supplying the employee bathroom for washing. 2. Promote water conservation improvement projects to gradually reduce water consumption annually.
Carbon Fee	Transition risk/ Policies and Legal (Short-term, <3 years)	The Environmental Ministry will issue the "Carbon Fee Collection Measures and 3 Sub-laws" in August 2024, which will impose a carbon fee on major carbon emitters with emissions exceeding 25,000 MT. (The rate will be announced to take effect on January 1, 2025, and the Carbon Fee for the whole year's emissions in 2025 must be paid by May 2026)	**Upfront costs were high, while later carbon emissions were low and operating costs were reduced.** Based on the APC Linyuan Plant's carbon emissions of 102,500 MT CO2e in 2024, with a carbon fee of NT$ 300 per tonne, and after deducting a free allowance of 25,000 tonnes, the estimated carbon fee is NT$ 23.25 million, accounting for about 0.4% of the entity's Kaohsiung City Revenue.	1. APC evaluates the use of internal carbon pricing as a shadow price, incorporating carbon costs into investment assessments to increase the opportunity for the implementation of carbon reduction items. 2. Implement energy saving and carbon reduction programs, replace energy-saving equipment, and increase green procurement expenditure. 3. A self-consumption solar PV power plant (494 kW) will be installed in third quarter of 2025. 4. Optimization of process operations, implement Energy monitoring.

Climate Change Topic	Topic Type (Impact Occurrence Time)	Description of Risk and Opportunity Items	Potential Financial Impact	Countermeasures
Renewable Energy Regulations - Risk of Energy-heavy Industries Clause	Transition risk/ Policies and Legal (Short-term, <3 years)	1. The Ministry of Economic Affairs' "Regulations on Renewable Energy Generation Equipment for Power Users with a Certain Contracted Capacity" requires large electricity users with a contracted capacity greater than 5,000 kW to install renewable energy equipment accounting for 10% of their contracted capacity by 2025. 2. In 2025, the Ministry of Economic Affairs announced the energy-saving Goals for large electricity users for each company from 2025 to 2028. For users with a contracted electricity capacity of 801 to 10,000 kW, the average annual electricity saving rate goal is maintained at 1%. For those exceeding 10,000 kW, it is increased to 1.5%.	**Increase in capital expenditure and increase in operating costs** 1. APC will install a self-consumption solar PV power plant (494 kW) in Q3 2025, with a capital expenditure of NT$ 35.86 million. 2. Procurement of 10.167 million kWh of solar green power from 2025 to 2030, with a capital expenditure of NT$ 50.74 million. (Including an additional purchase of 2.515 million kWh of green power in 2025) + 1.913 million kWh of green power over 4 years = 10.167 million kWh	1. APC already has a solar PV power plant with an installed capacity of 496 kW and plans to install a second self-generation and self-consumption solar PV power plant with a capacity of 494 kW in the third quarter of 2025. 2. APC procured 1.913 million kWh of solar green power from USI Green Energy in 2024 and officially started using the green power on January 1, 2025. 3. The total annual electricity generation of the above three exceeds 2.5 million kWh, meeting the regulatory requirement of using green power equivalent to 10% of the contracted capacity. 4. APC plans to procure 10.167 million kWh of solar green power from 2025 to 2030. 5. Starting in 2025, the APC Linyuan Plant's power-saving management goal has been increased from the original 1% to 1.5%, continuously moving toward the group's 2030 carbon reduction goals.
Transition of low-carbon technology	Transition risk/Energy, Technology (Medium-term, 3-5 years)	Investing in energy transition, efficiency improvement, fuel substitution, and other low-carbon technology developments for carbon reduction increases the technical costs for enterprises.	**Increase in capital expenditure and decrease in operating costs.** 1. Waste heat recovery improvement project, saving 2,656 MT of steam annually, can save NT$ 4 million per year. 2. APC has implemented five energy saving and carbon reduction programs in 2024, with an investment amount of NT$ 16.13 million.	1. APC's Low-Carbon Transition Program: A natural gas-fired fluid gas oxidation furnace will replace the existing fuel oil steam boiler equipment, with construction expected to be completed in June 2025. 2. Continue implementing the current year's energy saving and carbon reduction programs, undergo equipment replacement, prioritize the procurement of energy-saving equipment without compromising performance; and propose the energy-saving plan for the next year, along with the expected investment amount and anticipated benefits.
Increase in the price of raw materials	Transition risk/ Market (Short-term, <3 years)	1. Considering the future imposition of carbon fees, raw materials will inevitably include carbon emission costs, leading to increased price of raw materials. 2. Extreme weather causes uncertainty in the transportation costs and delivery times of raw materials .	**Increase in operating costs** The cost of purchasing raw materials and product transportation have increased.	1. Began promoting the Development and Certification of Recycled Plastic Products (LDPE) in 2024, and in February 2025, passed the SGS International Certification to successfully obtain the ISO 14021 Product Recycled Content certificate. 2. Continue implementing material recovery to reduce environmental impact, with a flexible intermediate bulk container recovery rate of 79.5% in 2024. 3. Diverse Suppliers.
High-efficiency production	Opportunity/ Resource efficiency (Medium-term, 3-5 years)	By leveraging AI intelligent production, industrial motors, automated packaging, and other production tools, enhance overall production efficiency and reduce energy consumption.	**Decrease in capital expenditure and operaring costs.** An investment of NT$ 10 million is planned to integrate the data of reactors and cooling towers into the DCS+ platform, executing online data analysis and monitoring.	1. With the implementation of the AI project, the 2024 execution of the [DCS+ Platform Construction Project] and the [Line 4 Reactor and Cooling Tower Data Integration Project] progress is at 80%. 2. The execution of the [L4 Reactor PdM Predictive Analysis Project] and the [MI Prediction Project] is planned for 2025.

Climate Change Topic	Topic Type (Impact Occurrence Time)	Description of Risk and Opportunity Items	Potential Financial Impact	Countermeasures
Reduce water usage and water consumption	Opportunity/ Resource efficiency (Medium-term, 3-5 years)	Water resources are an irreplaceable component of the manufacturing process. Reducing factory water leakage and increasing the proportion of water recycling and reuse can save on operating cost expenditure and enhance factory resilience.	Decrease in operating costs. 1. Include water consumption in the monthly Key Performance Indicator monitoring, perform statistical analysis and comparison of water usage, and if any anomalies are found, immediately investigate the cause and implement improvements. 2. Equipment cost investment, benefits.	1. Process equipment and operational improvements to reduce steam consumption. 2. Manually adjust the steam boiler to avoid excess steam pressure and prevent discharge waste. 3. Continuously evaluate water conservation programs annually. 4. Water intensity in 2024: 3.7 M^3/MT; Water reclamation rate of 97.5%, meeting management goals.
Use low-carbon energy	Opportunity/ Resilience, Energy Source (Long-term, >5 years)	Promote coal-to-gas transition, increase the percentage of renewable energy usage, reduce carbon costs, and lower product carbon footprint.	Increase in operating costs **and** decrease in Carbon Fee. Carbon reduction quantity, cost, and benefits of the project investment.	1. Develop self-built solar PV power plants, and focus on and participate in the renewable electricity market. 2. Purchased steam supply prioritizes natural gas as the source of supply. 3. A total of five energy saving and carbon reduction programs has been implemented in the 2024 Year, with an investment of NT$ 16.13 million, saving 2,018,000 kWh of electricity and 512 MT of steam, and reducing carbon by a total of 1,076 MT CO_2e.
R&D and innovation of new products and services - Research and development of low-carbon and energy-saving products.	Opportunity/ Product and Services (Long-term, >5 years)	R&D low-carbon products from the perspective of a complete product and service life cycle toward developing products in circular economy, low carbon, and energy-saving.	Increase in revenue 1. The Innovative Development and Certification of Recycled Plastic Products, passed international certification, and obtained the ISO 14021 certification. 2. Photovoltaic Grade EVA products, used for PV module packaging, contribute to efforts in carbon reduction globally.	1. From 2024, the Linyuan Plant promoted the Development and Certification of Recycled Plastic Products (LDPE), and in February 2025, passed SGS international certification to successfully obtain the ISO 14021 Product Recycled Content certificate. 2. Photovoltaic Grade EVA products will continue to be produced and supplied through the Gulei Petrochemical Plant and the Kaohsiung Linyuan Plant.

Promote Group Internal Carbon Pricing GRI 2-23, 2-24

On August 29, 2024, our country announced the implementation of three subsidiary laws regarding the Carbon Fee, and on October 21, the Carbon Fee rates were announced. Starting from 2025, emissions will be formally included in the Carbon Fee Collection calculation, marking the beginning of the era where carbon carries a cost. In order to respond to government policies in advance and effectively cope with climate change and reduce carbon risk, USIG has introduced an internal carbon pricing system in 2024. The price will be based on the domestic carbon fee pricing foundation, initially set at NT$ 300 per ton of carbon, and will be reviewed and gradually increased in stages. This system primarily integrates carbon costs into the Company's decision-making and investment evaluation processes, assessing the impact of carbon emissions on business operations, accelerating the implementation of carbon reduction measures, and driving low-carbon investments.

Held two educational training sessions in July 2024 to help relevant units understand the concept and application of internal carbon pricing, assisting each plant in swift implementation. Additionally, a general course on carbon-related topics was organized in September of the same year, where colleagues were invited to participate. These initiatives successfully enhanced employees' awareness and professional capabilities in carbon reduction, contributing to the achievement of the company's carbon reduction goals.

Response to IFRS Sustainability Disclosure Standards

In response to the "Roadmap for Promoting the Adoption of IFRS Sustainability Disclosure Standards in Taiwan" released in August 2023, listed companies in Taiwan will be required to adopt IFRS Sustainability Disclosure Standards in three phases starting from 2026. In 2024, the USIG established a cross-functional IFRS project team, with quarterly implementation progress reported to the Board of Directors of USI for oversight. The project team is led by the Group Chief Financial Officer and comprises the "Operational Impact Task Force" and the "Financial Impact Task Force" to jointly assess the potential financial implications and impacts of material risks and opportunities. APC serves as a member of the Operational Impact Task Force. In 2024, the establishment of the project team, gap analysis with IFRS standards, and formulation of an implementation plan were completed.

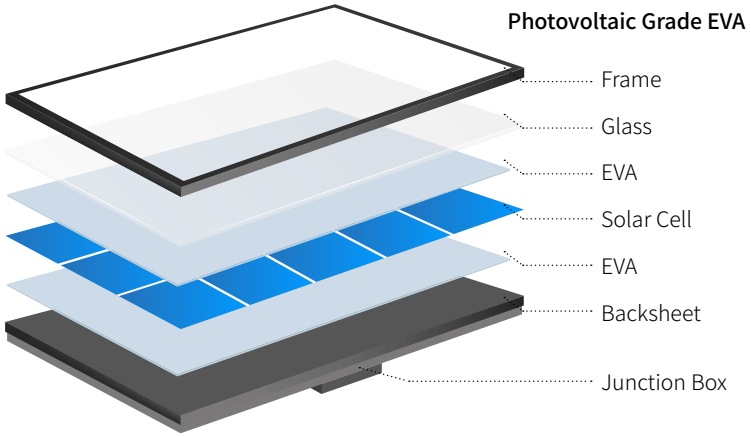
Implementation Work Plan

Stage Tasks	Stage 1 Analysis and Planning	Stage 2 Design and Execution			Stage 3 Implementation	Stage 4 Adjustment and Improvement
Schedule	2024 Q4	2025 Q2	2025 Q3	2025 Q4	2026 Q3 ~ Q4	2027 Q1
Summary of Implementation Tasks	· Establishment of a cross-functional project team for the adoption of IFRS Sustainability Disclosure Standards. · Preliminary identification of key differences and impacts between existing sustainability information and IFRS Sustainability Disclosure Standards. · Preliminary identification of the reporting entity. · Formulation of an implementation plan.	· Identification of sustainability-related risk and opportunity topics. · Assessment of the potential impacts of sustainability-related risks and opportunities on current and anticipated financial positions. · Evaluation of whether sustainability-related information constitutes material financial information, incorporating disclosure areas such as metrics and targets, risk management, and strategy.	· Inventory of sustainability-related data required within the company's reporting boundary and across the value chain. · Establishing linkages between sustainability-related data and information used in financial reporting (e.g., input values and parameters.)	· Adjustment of corporate processes including financial and non-financial reporting procedures, information systems, supply chain management processes, internal controls, and daily operations across departments.	· Pilot preparation of the sustainability section in the annual report. · Continuous updates to internal control manuals related to IFRS sustainability information and provision of relevant training.	· Disclosure of sustainability information in accordance with IFRS Sustainability Disclosure Standards in the 2026 annual report, to be announced and filed simultaneously with the 2026 financial statements.

Climate Adaptation Actions

In response to the impact of climate change, USIG is not only continuously leveraging technology and R&D capabilities to invest in the development of innovative materials and products in terms of climate adaptation, but also actively participating in environmental sustainability initiatives held by the Group to mitigate the impact of climate change.

Solar Encapsulation Material - Photovoltaic Grade EVA



In recent years, in response to climate change issues, the demand for green power products has been increasing. APC has actively developed optoelectronic industry application products with high added value, specifically "Photovoltaic Grade EVA," which is used for PV module packaging film production to meet the demand for PV module packaging materials and explore new markets.

In recent years, the rapid establishment of solar energy in China has driven the boom in the photovoltaic grade EVA market. In 2024, due to the continuous increase in PE capacity in Mainland China, every enterprise has started producing photovoltaic grade EVA, disrupting the solar photovoltaic grade EVA market. Mainland China's solar manufacturers have primarily shifted to procuring local domestic materials for production and sales needs. Consequently, the sales proportion of photovoltaic grade EVA is reduced, shifting focus to the coating-grade EVA market. Therefore, the sales volume of Photovoltaic Grade EVA products in 2024 is expected to decrease by about 69% compared to that of 2023.

Circular Economy - "Development and Certification (ISO 14021) of Recycled Plastic Products (LDPE)"

APC aims to address the rising global awareness of net-zero carbon emissions and resource recycling by seeking circular solutions for plastics from production to disposal, in order to lower production costs, reduce environmental impact, and enforce circular economy. From 2024, under the guidance of Dr. Tung from the Group's Innovation Department, the Linyuan Plant, led by Plant Manager Hsieh, Wing-Quan, along with a team of senior plant supervisors and certification engineers, will fully cooperate to develop a total of 9 recycled plastic products. They will utilize three different MI range virgin materials as substrates, blending them with process transition waste materials at ratios of 30%, 50%, and 80%.

The factory finally passed the SGS international certification in February 2025, successfully obtaining the ISO 14021 Pre-Consumer Recycled ESG Material certification. To ensure that recycled materials are sourced from verifiable origins, the accuracy of manufacturers' declarations on recycled material usage is verified through raw material tracking and production data comparison. Certificates and the SGS Green Label are obtained to reflect the plant's commitment to source reduction.

Taskforce On Nature-related Financial Disclosures (TNFD)

APC profoundly recognizes the importance of biodiversity protection for maintaining global ecosystem stability and sustainable human well-being. Therefore, the Company actively promotes various actions to reduce the impact of its operations on the ecological environment.

APC regularly utilizes Biodiversity Risk Assessment tools to examine the dependence and impact of company operations on the natural environment. Through the evaluation using the WWF Biodiversity Risk Analysis tool, it was found that APC's operational activities fall under high risk in the "Pollution" item. Therefore, APC prioritizes "avoidance" and "minimization" measures based on the TNFD Mitigation Hierarchy method. All manufacturing sites are located within industrial parks to "avoid" proximity to global or national biodiversity important areas, reducing the risk of ecosystem disturbance. "Minimize" pollutant emissions, and enhance emission control as well as monitoring mechanisms. In addition, APC values transparency of environmental information and communication strategies, and enhances climate disaster risk management and response measures.

Regarding pollution control, APC strictly implements air pollution control measures, regularly conducts equipment and component leakage tour inspection, enhances inspection frequency, and continuously updates and maintains equipment to effectively reduce environmental impact. In addition, APC has established a waste management system, where all waste generated within the plant is handled by qualified contractors. The contractors' disposal performance is regularly audited to ensure proper disposal of waste and to avoid any negative impacts on the environment.

In addition, APC also values transparency of environmental information, strengthens communication with various stakeholders, and enhances climate-related risk management and response measures. Actively participated in local environmental protection actions by adopting the air quality purification zone at Wang Gung Elementary School in Linyuan District, Kaohsiung City. Through practical actions, the goal is to improve the local ecological environment and promote sustainable development in the community.

Equipment and Component Leakage Tour Inspection

Proper Waste Treatment

Energy Management

USIG voluntarily set energy management targets in 2016 and began to make dynamic target reviews in accordance with the country's energy development policies, and by keeping track on the international trends and domestic laws and regulations. After measuring the internal and external factors, we set the 2030 carbon reduction target in early 2022, which is "carbon reduction by over 27% compared to 2017 by 2030". The 9 USIG core businesses began to implement the ISO 50001 energy management system and obtained the certificate in 2018 to effectively manage energy performance and continuously improve energy saving and carbon reduction, hoping to demonstrate USIG's influence and so to lower environmental impact.

Every year, USIG holds the "Plant Technology Exchange Meeting" and several "Northern/Southern Plants Resource Integration Meetings" for plants to share resources and improve performance in energy conservation and carbon reduction through exchange technology experience. The 2024 Group Plant Technology Exchange Meeting was held in November, featuring case presentations in a competitive format with "industrial safety and environmental protection," "equipment preventive maintenance," and "energy saving and carbon reduction" as the core themes. After plant technology case submissions and a documentary review, 7 cases made it to the final presentation. The top three outstanding cases were selected through joint voting by senior group management and representatives from each presenting plant. The group's chairman awarded certificates and bonuses. Through awards, exchange, and learning from others, the Group aims to jointly enhance its technological level.

In 2024, APC, led by Plant Director Hsieh, along with Vice Manager Hsueh, Sheng-Jen, Supervisor Lin, Jun-Hsu, and Engineer Chiu, Ming-Huan from the manufacturing department, presented with the theme of "Installation of E-1206B for Replacement of Waste Heat Recovery Function in the EVA Process", received an excellent evaluation from the group's senior management, showing outstanding performance.

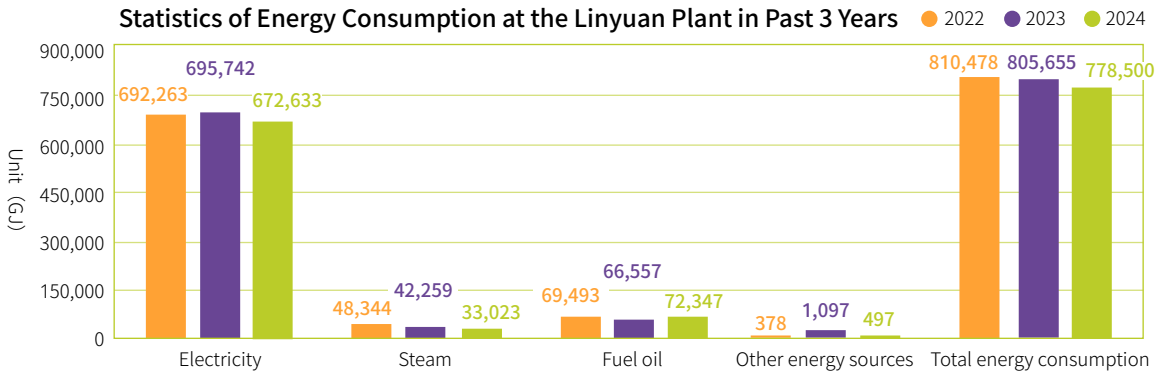
Electricity Conservation Rate List of the APC Linyuan Plant in the Past 3 Years:

Year	2022	2023	2024
Electricity Conservation Rate	0.68	1.13	1.6

Descriptions:
1. The electricity conservation rate in 2024 was 1.6%, and the average power conservation from 2015 to 2024 was 1.58%, which meets the requirement of the "Energy Administration's regulatory requirement of 1%".
2. Electricity Conservation (including Taiwan Power Company's demand bidding, with an energy conservation volume of 824,854 kWh from demand bidding)

Energy Use GRI 302-1, 302-3

The data boundary of energy management in 2024 covers the Linyuan Plant, and data coverage is 100%. The graph below shows the internal energy consumption of the Linyuan Plant by electricity, steam, fuel oil, and other energy sources in the past three years and the unit product energy consumption:



Note: 1. Conversion factor of heat value per unit GRI 2-4
The Energy Administration, Ministry of Economic Affairs announced: Electricity 860 Kcal/degree; Fuel Oil 9,600 Kcal/L; Unit conversion: 1 Kcal= 4.187 KJ
Steam supplier provides (Kcal/kg): Steam 679.22 (2024); 679.47 (2023); 679.51 (2022)
2. (Electricity/Steam/Fuel Oil) energy consumption = (Electricity/Steam/Fuel Oil) consumption x conversion factor of heat value per unit x 4.187x10-6(GJ/KJ)
3. Sources of electricity, steam, and fuel oil consumption and production data: Monthly production statistics, with bills as proof.
4. The energy used by the Company is non-renewable.
5. After fuel oil is verified by a third-party, gasoline + diesel + liquefied petroleum gas + natural gas will be included in the data disclosure for the past three years.

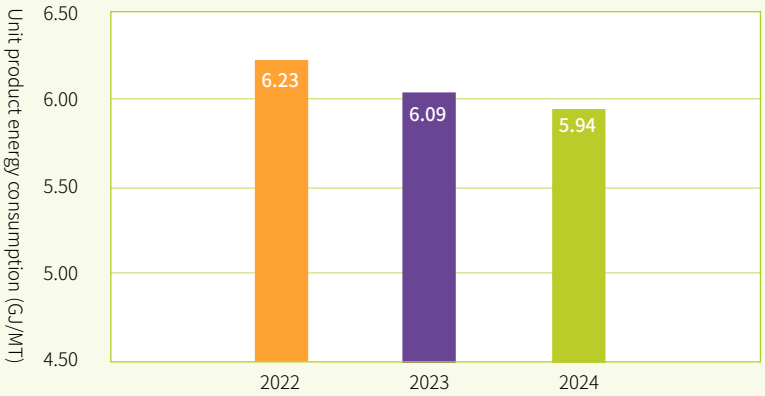
Total 2024 Energy Use 778,500 GJ decreased by 3.4%
The production process is running smoothly, reducing the number of equipment cleanings and implementing energy-saving and carbon-reduction programs to lower the usage of steam; increasing the recovery rate of the VA

Electricity energy usage 672,633 GJ, accounting for 86.4%

Percentage renewable **0%**

Self-Generated Energy (Solar PV) 2,005 GJ, Total Capacity of Self-consumption 0 GJ
All APC's solar-generated electricity in 2024 was sold to the Taiwan Power Company.
SASB RT-CH-130a.1

Unit Product Energy Consumption of the Linyuan Plant in the Past 3 Years



Note:
1. Unit product energy consumption (or energy intensity) = Total consumption (GJ) / Total production (MT)
2. Source: "Energy Conservation Audit System Report of Energy Users" of the Energy Administration

The unit product energy consumption (or energy intensity) in 2024 was 5.94 GJ/MT, which was about 2.5% lower compared to that of 2023. The main reasons were the smooth plant process, fewer equipment cleanings, the implementation of energy saving and carbon reduction programs, and the reduction in steam usage. Moreover, increasing the recovery volume of the VA system and reducing the output of fuel oil (VA waste liquid) also contributed to the decrease in unit product energy consumption.

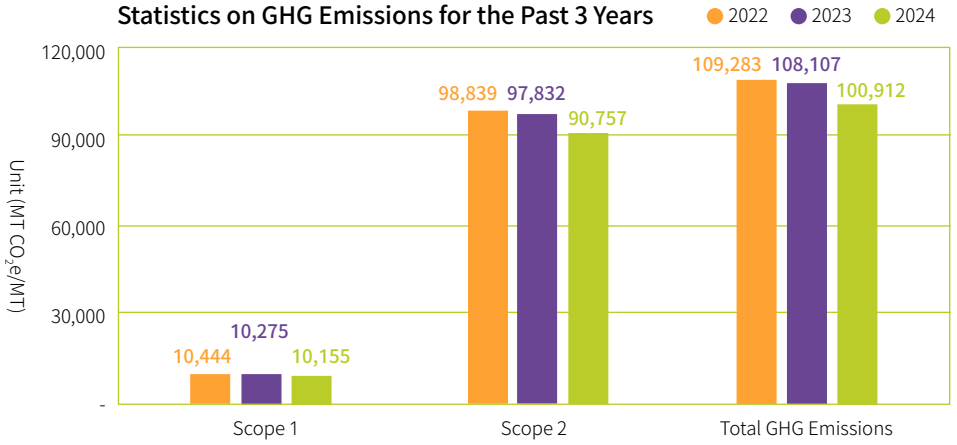
In addition, in response to changes in market demand, the production mix was adjusted, resulting in a 36% increase in low density polyethylene (LDPE) capacity compared to that of 2023, while the capacity of ethylene vinyl acetate copolymer (EVA) decreased by 13%.

Due to the higher average unit product energy consumption of EVA compared to LDPE, the reduction in EVA capacity, the increase in LDPE capacity, and the decrease in the number of yearly equipment failures are all key factors leading to the reduction in total energy consumption.

GHG Management

The Ministry of Environment announced a revision on August 8, 2022, "Businesses should inventory and register GHG emissions sources." APC's Linyuan Plant is part of the second newly added batch required to inventory and register GHG emissions. It completed the verification of the GHG inventory by a verification agency in accordance with ISO 14064-1 in the third quarter of 2022 and registered on the website designated by the Ministry of Environment. According to regulatory requirements, the APC consolidated financial statement company must complete the greenhouse gas inventory by 2025 and achieve assurance by 2027. APC has already completed the consolidated financial statement company's greenhouse gas inventory and assurance in the second quarter of 2024. The operational boundary of the Linyuan Plant includes direct, indirect, and other indirect GHG emissions. The main GHG emissions are five categories, including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), and sulfur hexafluoride (SF_6). Ultimately, carbon emissions are presented as CO_2e by converting through the Global Warming Potential (GWP) in IPCC's sixth assessment report. In addition, in response to the "Carbon Fee Collection," the Environmental Ministry announced the Carbon Fee Collection Measures and three sub-laws on April 29, 2024. APC will submit a "Voluntary Reduction Plan" application to implement energy-saving and carbon reduction performance, set greenhouse gas reduction goals for 2030, and plan an annually reviewed carbon reduction pathway, aiming to obtain approval and favorable schemes from the central competent authorities.

GHG emissions by scope and intensity of unit product of the APC Linyuan Plant in past 3 years are as follows: GRI 305-1, 305-2, 305-4



Note 1: Electricity emission factor: 0.474 kg CO_2e/kWh (for 2024). Purchased steam emission factor: 0.1786689260 tons CO_2e/ton (for 2024).

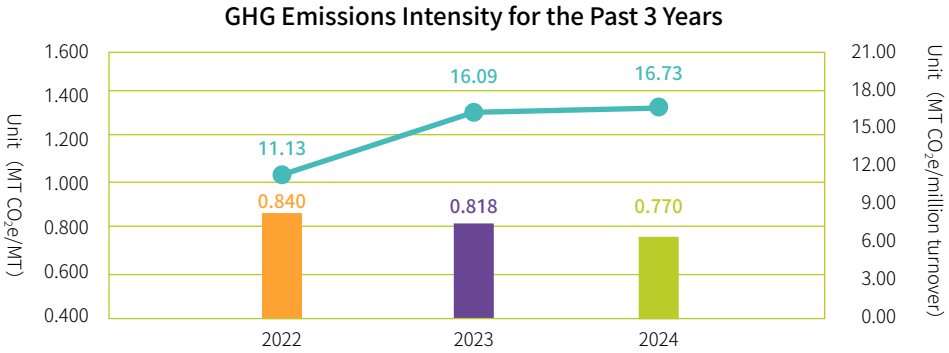
Note 2: Greenhouse Gas Emissions: Scope 1 refers to direct emissions from processes or facilities. Scope 2 refers to energy indirect emissions, such as purchased electricity (supplied by Taiwan Power Company) and purchased steam (supplied by Formosa Plastics Linyuan Plant).

Note 3: GHG Emissions = (Energy Fuel Usage) x (Emission factor announced by the Environmental Protection Administration) x (IPCC GWP value required by the Environmental Protection Administration)

Note 4: GHG emission intensity = total GHG emissions (metric tons CO_2e) / total production (metric tons) (or total GHG emissions (metric tons CO_2e) / million turnover).

Note 5: According to the GHG emission coefficient version 6.0.4 announced by the Ministry of Environment and the GWP value of the IPCC 2013 Fifth Assessment Report, the value is converted into dioxide carbon emission equivalent.

Note 6: Data boundary: 2022 is for individual companies (Taipei headquarters + Asia Poly Linyuan Plant); 2023 is for consolidated financial statements of parent and subsidiary companies (Taipei headquarters + Asia Poly Linyuan Plant + Juhua (Shanghai) + USI International Corporation); 2024 is for Asia Poly Linyuan Plant」



Direct GHG Emissions (Scope 1) **10,157** MT CO_2e, Proportion **10.1%**

Data boundary: Consolidated Financial Statements of Parent and Subsidiaries

GRI 305-1 SASB RT-CH-110a.1 Confirmation Report

Energy Indirect GHG Emissions (Scope 2), **90,815** MT CO_2e, Proportion **89.9%**

Data boundary: Consolidated Financial Statements of Parent and Subsidiaries

GRI 305-2

The total GHG emissions of the APC Linyuan Plant in 2024 were 100,912 MT CO_2e, a reduction of 6.66% compared to that of 2023. The intensity of emissions is 0.77 MT CO_2e/MT, a reduction of 5.9% compared to 2023, primarily due to adjustments in the product mix based on market demand changes, process pressure adjustments, and a decrease in equipment failure rates, leading to a reduction in unit product energy consumption. Another measure of emission intensity is 16.73 MT CO_2e per million in revenue, which represents an increase of 3.96% from the previous year, mainly due to a decrease in product prices and a reduction in annual revenue.

According to ISO 14064-1, categories 3-6 indirect GHG emissions were identified and assessed in accordance with the indicators in Appendix H of ISO 14064-1:2018. Among them, four items are Category 3 (including: upstream freight transportation, domestic product transportation inventory, employee commuting, and business travel) and eight items are Category 4 (purchased goods), which belong to Scope 3, with GHG emissions of 307,945 MT CO_2e, and have obtained third-party assurance.

APC 2024 Scope 3 Greenhouse Gas Emissions

Item	Emissions (MT CO_2e)
Category 3.1 - Transportation of upstream freight - Vinyl Acetate Monomer (VAM)	381.4654
Category 3.1 - Transportation of upstream freight - Other 5 items (domestic procurement)	115.7685
Category 3.1 - Transportation of upstream freight - Other 5 items (external procurement)	24.6525
Category 3.2 - Inventory of domestic product transportation (domestic sales)	779.5563
Category 3.2 - Inventory of domestic product transportation (export sales)	6,692.9267
Category 3.3 - Employee commuting (bus, car, motorcycle)	202.3887
Category 3.5 - Employee business trips (high-speed rail, train, taxi, car, motorcycle)	0.4681
Subtotal	**8,197.2262**
Category 4.1 - Purchased Goods (Raw Materials) - Ethylene	210,896.1590
Category 4.1 - Purchased Goods (Raw Materials) - Vinyl Acetate Monomer (VAM)	70,086.8006
Category 4.1 - Purchased Goods (Raw Materials) - Other Electricity	18,175.6462
Category 4.1 - Purchased Goods (Raw Materials) - Tap Water	107.0074
Category 4.1 - Purchased Goods (Raw Materials) - Sulfuric Acid	13.6148
Category 4.1 - Purchased Goods (Raw Materials) - Lubricating Oil	439.0956
Category 4.4 - Disposal of Solid Waste (Removal Category D + Category R)	4.3246
Category 4.4 - Disposal of Solid Waste (Incineration)	24.6888
Subtotal	**299,747.3370**
Total	**307,944.5632**

Other indirect GHG emissions (Scope 3) **307,945** MT CO_2e GRI 305-3
Data boundary: Individual company
Confirmation Report

Energy Saving Actions and Benefits GRI 302-4

A total of five energy saving and carbon reduction management programs have been implemented in 2024, as shown in the figure:

Process Improvement
1. Line 3 condensate recovery energy-saving.
2. Line 3 VA transport system energy-saving
3. Line 2 Recycle Line cooling energy-saving.

Save
Electricity 99,311 kWh
512 MT of steam
Reduce carbon 128 MT CO_2e.

Equipment Improvement
4. Line 3 initiator pump energy-saving
5. Electricity system improvement for energy conservation

Save
1,918,261 kWh of Electricity
Reduced 948 MT CO_2e of carbon

Electricity conservation by 2,017,572 kWh, steam 512 MT, and reduced carbon by 1,076 MT CO_2e in total. The table below shows the energy saved and carbon reduced by process improvement and by equipment improvement:

Type		Process Improvement	Equipment Improvement	Total
Energy Saved	Electricity (GJ)	358	6,907	7,265
	Steam (GJ)	1,475	---	1,475
Reduced carbon (MT CO_2e)		128	948	1,076

Note: 1. The calculation method for energy saving and carbon reduction program have been presented in terms of annual equivalent values.
2. The Energy Administration, Ministry of Economic Affairs announced: Electricity 860 Kcal/kWH; supplied by the steam supply plant: Steam 679 Kcal/kg, unit conversion factor 4.187×10^{-6}(GJ/KJ)

All reduced GHG emissions were Scope 2 Reduced indirect energy emissions. GRI 305-5

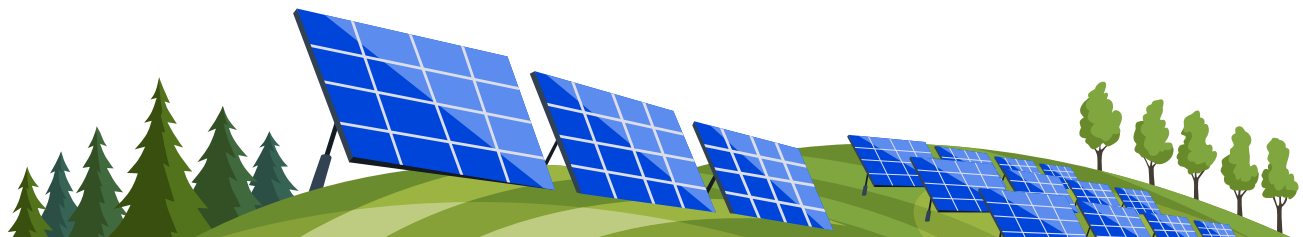
The APC Linyuan Plant establishes energy saving and carbon reduction programs and targets in response to the government's energy saving policy and in accordance with the group's energy management targets. Every month we produce statistics on the results of implementation of the energy saving and carbon reduction programs for the reference of progress control. Through the group's "Resource Integration Meetings" and "Technology Exchange Meetings", we also share resources and exchange experiences with other USIG businesses to learn from one another so as to implement practical and effective energy saving and carbon reduction programs.

Energy Saving and Carbon Reduction Programs in 2025

It is planned to implement six energy saving and carbon reduction measures, which are expected to save electricity by 3,160,903 kWh, steam by 810 MT, and reduce carbon by 1,685 MT CO_2e in total.

Investment amount for the 2025 energy-saving and carbon reduction program is NT$ 77.66 million.

Type	Energy Saving Management Program	Program Target Value	Total Energy Saved in the Program	2025 Goals for Carbon Reduction
Process Improvement	1. E-1115 Steam Saved 2. E-1111/E-1211 Energy Improvement 3. Line 4 Transport system pressure reduction energy-saving project	Electricity 1,754,917 kWh 522 MT of steam	Electricity 3,160,903 kWh 810 MT of steam	1,685 MT CO_2e
Equipment Improvement	1. Line 3 chiller replacement. 2. Expand the installation of solar PV power equipment. 3. Replacement of the packaging machine.	1,405,986 kWh of Electricity		



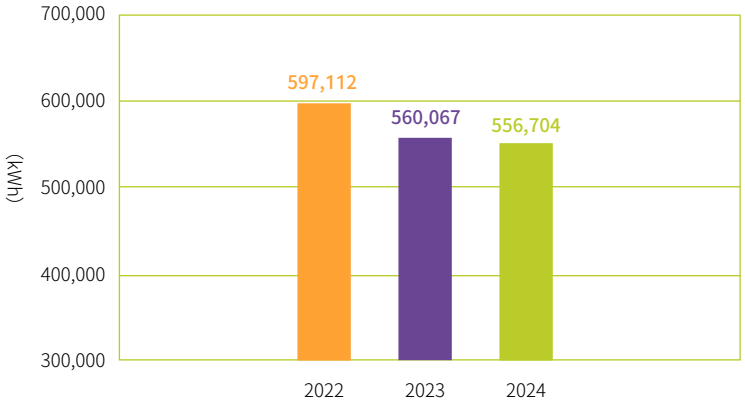
Renewable Energy

The APC Linyuan Plant completed the installation of solar PV power equipment in June 2011, with an installed capacity of 496.08 kW. All APC's solar-generated electricity in 2024 amounted to 556,704 kWh, all of which was sold to the Taiwan Power Company, bringing the cumulative generation to about 7.95 million kWh by the end of 2024, reducing carbon dioxide emissions by approximately 4,131 MT.

The USI Group is currently coordinating and leading each company towards meeting the green power requirements within five years. The Group will establish unified solar power plants, and any shortfall will be supplemented by procuring green power.

APC procured 1.913 million kWh of solar green power from USI Green Energy in 2024, with an investment of approximately NT$9.565 million, and officially started using the green power on January 1, 2025. The Linyuan Plant will follow relevant regulations of the new law and cooperate with the Group's overall planning to achieve the Group's goal of carbon neutrality by 2050. The Linyuan Plant is expected to additionally install a self-consumption solar PV system with a capacity of 494 kW in 2025.

Solar Power Generation of the Linyuan Plant in the Past 3 Years



4.3 Emissions Management

Material Topics: Air pollution Control; Corresponding Sustainability Principle: Sustainable Development GRI 2-25, 3-3

Management Approach and Components	Impact Management	Targets Execution and Performance of Management Approach	Evaluation of Management Approach
The Significance to Asia Polymer Air quality in the petrochemical industry remains a significant topic for the general public. The emission of air pollutants not only impacts compliance with environmental regulations, but also has affect environmental air quality and public health.	**Positive/Negative Impacts** · Negative Actual Impact - Air pollution control has not been implemented.	**2024 Goals** · Regular walk-through inspections of equipment components, with 420 inspection points monthly. · Process Air Pollution Reduction Program · Unit product air pollutant emissions (kg/MT), target control values: NOx：<0.0418；SOx：<0.0458；VOCs：<0.2214	**Effectiveness Assessment** Authorized testing companies that approved by the National Environmental Research Institute to regularly measure the volume of air pollutant emissions annually.
Management Practice and Objectives The APC Linyuan Plant monitors and improves air pollutant emission quality through VOCs leakage detection of equipment components and air pollutant emission reduction improvements of equipment, to meet the requirements of government air pollution regulations and improve the surrounding air quality of the plant.	**Processes to Remediate and Prevent Negative Impacts** · Enhance the frequency of regular component inspections, from 280 inspection points per month to 420 inspection points per month. · Install a liquid gas oxidizer paired with air pollution control equipment to effectively reduce emissions of particulate matter, nitrogen oxides, and volatile organic compounds. · Reduce equipment failure rate through monthly periodic maintenance.	**2024 Performance** 1. Regular walk-through inspections of equipment components, with 770 inspection points monthly (✓) 2. Air pollutant emissions (kg/MT): 3. Nitrogen Oxides (NOx): 0.0393 (✓) 4. Sulfur Oxides (SOx): 0.0325 (✓) 5. Volatile Organic Compounds (VOCs): 0.1676 (✓)	**Grievance Mechanism** Environmental Impact grievance channels.
Strategy · Equipment and component leakage tour inspection · Reduction of air pollutant emissions · Legal compliance		**Short-Term (< 3 years) Goals** · Regular walk-through inspections of equipment components, with 450 inspection points monthly. · Install a gas oxidizer paired with air pollution control equipment to replace the old steam boiler, reducing NOx emissions to below 30ppm and particulate matter emissions to below 10mg/Nm^3. · Unit product air pollutant emissions (kg/MT), target control values: NOx：<0.0418；SOx：<0.0458；VOCs：<0.2214	**Adjust Management Approach** Exchange of environmental pollution prevention technology and experience at the Group technology exchange meeting.
		Medium- Long-Term (≧ 3 years) Goal Planning · Monthly tour inspection of the 600 pieces of VOCs equipment and components by the environmental protection section. · Unit product air pollutant emissions (kg/MT) are 1% lower than the target control values. NOx：<0.0376；SOx：<0.0412；VOCs：<0.1993	

Air Pollution Control GRI 305-6

The major air pollutants emitted by the APC Linyuan Plant include nitrogen oxides (NOx), sulfur oxides (SOx), volatile organic compounds (VOCs), and hazardous air pollutants (HAPs). NOx and SOx are mainly produced by the plant's combustion facilities (e.g., regenerative thermal oxidizer (RTO), steam boiler, thermal oil boiler). The Plant does not generate ozone-depleting substances (ODS). VOCs mainly come from the emissions and leakage of the RTO, flare, storage tanks, equipment cleaning solvents, and components. HAPs mainly originate from the raw material Vinyl Acetate Monomer (VAM). In addition to regularly testing and reporting air pollutants, we have planned the following reduction programs to effectively reduce air pollutants:

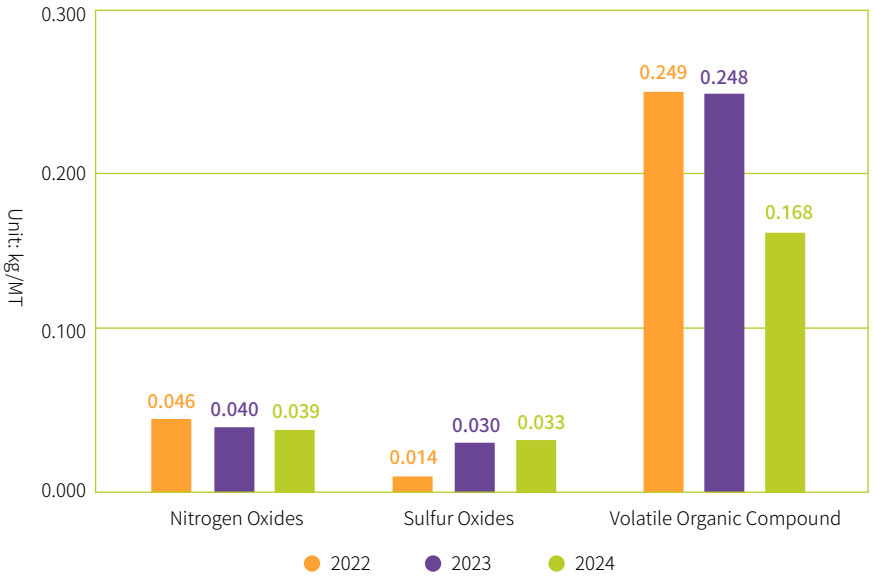
Reduce VOC emissions	We commission EPA-accredited institutions to check all equipment and components in the plant each quarter, enhance the self-imposed tour inspection of equipment and component (about 15,000 spots each month), and replace one old catalyst pump (one replaced). The environmental protection section has purchased two FID detectors (TVA-2020) to perform average up to 420 spot checks each month, the number has increase compared to previous years.
Ethylene Recovery Process	The ethylene is recycled among different production lines when the production process halts.
Off-site Underground Ethylene Pipelines Ethylene Emptying Recovery	When there is an operation issue that needs to empty the off-site underground ethylene pipelines for maintenance, we recover ethylene to each production line through the in-house ethylene recovery pipelines to reduce air pollution
Process Waste Reduction and Improvement SASB RT-CH-110a.2	· In 2019, the emission pipeline of the first-section outlet separator of the fourth production line's flash compression machine was modified to return to the inlet separator of the compressor · In 2021, the discharge pipeline of the first-section outlet separator of the boosting compressor in the third production line was modified to return to the inlet separator of the compressor. · In 2022, the steam boilers were planned on being replaced. · In 2025, it is planned to add a liquid gas oxidizer with catalytic ceramic filter tubes, which will handle process emissions and process exhaust gases, reducing emissions of particulate matter (TSP), nitrogen oxides (NOx), and volatile organic compounds (VOCs).

Air Pollutant Emissions of the Linyuan Plant in Past 3 Years: GRI 305-7 SASB RT-CH-120a.1 Unit: MT

Year	NOx	SOx	VOCs	HAPs
2022	6.025	1.813	32.400	0.742
2023	5.261	3.930	32.754	0.583
2024	5.147	4.261	21.977	1.523

Descriptions: The unit product SOx emissions in 2024 increased compared to 2023, primarily because the Environmental Protection Bureau adjusted the calculation method for SOx emissions from RTO equipment, leading to an increase in SOx emissions. VOCs emissions decreased significantly, mainly due to a reduction of 10 MT in the use of xylene cleaning equipment compared to that of 2023. In addition, the hazardous air pollutants (HAPs) related to the process at the Linyuan Plant are Vinyl Acetate Monomer (VAM), for which there are no control values, with emissions amounting to 1.523 MT.

Unit Product Air Pollutant Emissions of the Linyuan Plant in Past 3 Years



The emissions test results of the Linyuan Plant over the years have all been lower than the Emission Standards announced by the Environmental Ministry. The table below shows the 2024 emissions test results of APC's pipelines:

Pollutants	Unit	Thermal Oil Boiler	Steam Boiler	Emission Standard
Nitrogen Oxides (NOx)	ppm	75	69	100
Sulfur Oxides (SOx)	ppm	ND (< 2)	4	50
Particulate Matter (TSP)	mg/Nm^3	1	3	30

Regenerative Thermal Oxidizer (RTO)	Emission Standard
2	150
4	100
8	100

Note: Total Suspended Particulate, abbreviated as TSP

4.4 Waste Management

Material Topics: Waste Management; Corresponding Sustainability Principle: Sustainable Development GRI 2-25, 3-3

Management Approach and Components

The Significance to Asia Polymer

APC values corporate image and market competitiveness. Good waste management not only reduces raw material waste, enhances production efficiency, and lowers processing costs, but also demonstrates compliance with laws and regulations and corporate social responsibility.

Management Practice and Objectives

The APC Linyuan Plant implements classification management for Types of Waste through education and supervision, and entrusts qualified cleaning companies approved by the Ministry of Environment to adopt appropriate treatment methods for the removal of different types of waste.

Continuously reduce generation of industrial waste through process adjustments and personnel monitoring, enforce circular economy by transforming plastic waste into recycled plastic to develop green products, and lower environmental impact.

Strategy

- Waste Classification Management
- Compliant Waste Treatment
- Recycling for Reuse of Waste
- Application for the ISO Certification of Recycled Products

Impact Management

Positive/Negative Impacts

- Negative Actual Impact - Improper Waste Treatment

Processes to Remediate and Prevent Negative Impacts

- Implement waste classification within the plant through education or performance evaluation methods.
- Handled by contractors approved by the Ministry of Environment.
- Contractors treat waste according to Types of Waste using compliant Waste Treatment methods such as incineration, pyrolysis, landfilling, and physical treatment.
- Transfer waste eligible for recycling and reuse to licensed waste recovery contractors for disposal.
- Handled by contractors approved by the Ministry of Environment, with annual regular statistics on the volume of waste pollutant disposal, and data are reported on the Environmental Protection Administration's website.

Targets Execution and Performance of Management Approach

2024 Goals

- Proper Waste Treatment Rate: 100%
- Waste Intensity (MT/MT): ≦ 0.0030

2024 Performance

1. Proper Waste Treatment Rate: 100% (✓)
2. Waste Intensity (MT/MT): 0.0025
3. Reduced by 41.86% compared to the previous year (✓)

Short-Term (< 3 years) Goals

- Proper Waste Treatment Rate 100%
- Waste Intensity (MT/MT): ≦ 0.0030

Medium- Long-Term (≧ 3 years) Goal Planning

- Proper Waste Treatment Rate 100%
- Waste Intensity (MT/MT): ≦ 0.0020

Evaluation of Management Approach

Effectiveness Assessment

Handled by contractors approved by the Ministry of Environment, with annual regular statistics on the volume of waste pollutant disposal.

Grievance Mechanism

Environmental Impact grievance channels.

Adjust Management Approach

Exchange of environmental pollution prevention technology and experience at the group technology exchange meeting.

Waste Management GRI 306-3, 306-4, 306-5

Industrial waste generated by the APC Linyuan Plant includes general industrial waste and hazardous industrial waste. We sign contracts with EPA-accredited domestic contractors to remove and dispose of waste in accordance with the "Waste Disposal Act". It is required to file a waste delivery manifest on the Environmental Protection Administration's website according to the Act. After leaving the plant, we then track the waste disposal contractors to ensure compliance with the statutory period and also request contractors to provide proof of proper disposal, with on-site inspections of waste disposal facilities annually.

General industrial waste is disposed by type through intermediate waste treatment including incineration, pyrolysis, and physical disposal operations. Contractors will direct waste to landfills, production into recycled oil products, or fuel oil as final treatment according to the approved methods in their licenses.

In response to the Zero Waste through Resource Circulation Policy by Resource Circulation Administration, we have actively sought ways for recycling for reuse of waste in recent years. Waste wood, waste plastic, and waste bricks are treated via recycling for reuse and can ultimately be used as renewable fuel and construction-grade materials; while waste iron is transported to licensed waste disposal contractors for recycling purposes.

The table below shows the methods and weight of waste disposal reported by the Linyuan Plant in the past three years, according to the waste delivery manifest statistics on the Environmental Protection Administration's website:

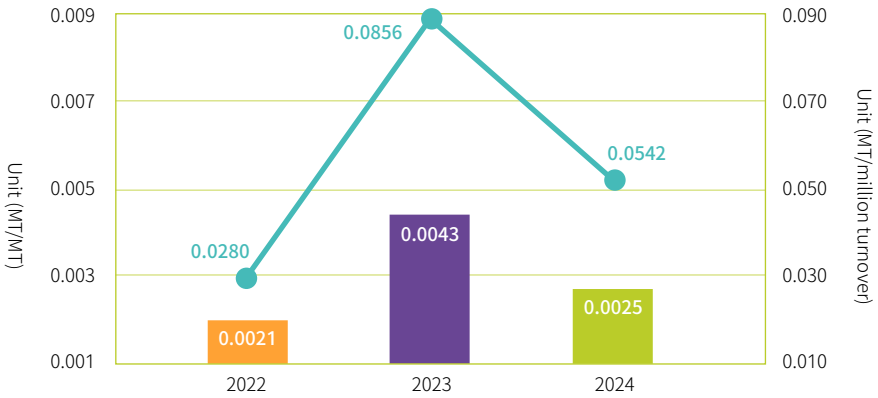
Method and Weight of Waste Disposal of the Linyuan Plant in Past 3 Years

Unit: MT

Treatment	Types of Waste	2022	2023	2024
Incineration	General Household Waste, Waste Plastic, and Waste Wood Mixture	43.70	51.53	40.81
Physical Treatment, Thermal Decomposition, Incineration Treatment	Waste Oil Mixture	145.50	219.79	157.3
Physical Treatment	Waste Lubricating Oil	68.81	48.65	36.72
Physical Treatment	General Waste Chemical Substances Mixture	16.43	17.53	16.36
Landfill Disposal	Mixture of Civil or Construction Waste	---	2.9	---
Reuse Treatment	Waste Wood, Waste Plastics, Waste Bricks	---	49.3	24.38
	Waste Iron	---	185.34	46.41
Total Weight of Non-hazardous Waste		**274.44**	**575.04**	**321.98**
Waste Recycling Rate (%)		---	40.8	21.99
Hazardous Industrial Waste				
Overseas Processing	Including Cadmium Battery	---	---	4.60
Recycling Treatment	Including Cadmium Battery	---	---	0.0
Total Weight of Hazardous Waste		---	---	4.60
Waste Recycling Rate (%)		---	---	0.0

In 2024, the plant returned to the annual routine of one full-plant shutdown for maintenance (one less shutdown than in 2023), resulting in a reduction in waste volume. Due to the slowdown in product market demand, adjustments in production and sales to align with the demand led to a reduction in capacity, resulting in a decrease in the amount of waste oil mixtures. Some inferior quality waste lubricating oil was still classified as waste oil mixtures. Changes in waste intensity over the past three years are detailed in the chart on the right.

Waste intensity over the past 3 years



In 2024, the Linyuan Plant generated 4.6 MT of hazardous industrial waste.

SASB RT-CH-150a.1

Due to the replacement of emergency backup power batteries in the plant's substation, the resulting batteries including cadmium were properly cleared through Overseas processing by qualified domestic removal companies approved by the Ministry of Environment.

Additionally, there was no spill of oils, fuels, or chemical substances was reported at the Linyuan Plant in 2024.

The proper waste treatment rate at the Linyuan Plant in 2024 was 100%.

Environmental Impact Grievance Channels

The APC Linyuan Plant has established the "Procedures for Implementation of Communication and Consultation" to establish, implement and maintain channels and procedures for the communication, engagement, and consultation of environment-related topics for internal (employees, enterprise union, Occupational Health and Safety committee meetings, etc.) and external (customers, competent authorities, community residents, and environmental groups, etc.).

The procedure for addressing internal grievances, employees proposes environment, health and safety-related issues through meetings such as the “Enterprise Labor Union Board Meetings”, “Occupational Health and Safety Committee Meeting”. If publicity or response is required, the responsible departments will review the responses, which then will be communicated within the company through meetings, educational training, or announcements after the approval by the environmental and Occupational Health and Safety management representative.

The procedure for addressing external grievances is refer to after any unit of the Linyuan Plant receives an environment, safety, and health-related grievance from outside the company via phone, orally, or in writing, the responsible unit will verify the contents of the grievance and register it in the "Occupational Safety and Health and Environmental Information Registration Form", then take necessary actions and appropriate responses, if the grievance becomes a case study.

The statistics of external grievances about Occupational health and safety and environmental from the APCLinyuan Plant in the past three years:

Item	2022	2023	2024
Number of Grievances (cases)	3	0	0
Number of Valid Cases (cases)	3	0	0

The Linyuan Plant Environmental Impact Grievance Channels Schematic Diagram