Environmental Sustainability

05

Environmental Management

Environmental Development Progress

2020
- Implemented material flow cost accounting analysis project

2021
- Yunlin Tech Plant and Suzhou Plant constructed self-generated solar photovoltaic system for self-use

2022
- Implementation of ISO 14067 Verification for Two Products
- Installation of Self-Consumption Solar Photovoltaic System at Taoyuan Factory

2023
- Taoyuan Plant Obtained ISO 46001 Certification
- Longke and Suzhou Plants Obtained ISO 50001 Certification
- Yunke Polymer Plant Established a Self-Generated Solar Photovoltaic System

2024
- Taoyuan Plant passed the Cleaner Production Assessment System Compliance Determination.
- Yunlin Manufacturing Plant 1 received the LEED Silver Certification from the U.S. Green Building Council and the Gold-Level Green Building Label from the Taiwan Architecture & Building Center.
- Suzhou Plant was certified as a Class 3A Green Factory by the Suzhou Bureau of Industry and Information Technology.
- Yunlin Polymer Plant, Yunlin Manufacturing Plant 3, and Wuhu Plant obtained ISO 50001 certification.
- Yunlin Manufacturing Plant 1 installed a new self-use solar photovoltaic system.

Note: For the complete environmental development progress, please refer to the ESG website.

Environmental Management Goals

BenQ Materials has established a comprehensive environmental management framework covering energy and greenhouse gas management, water resource management, and waste management, with corresponding policies in place to actively manage resource use across multiple aspects. Specific environmental management targets have also been set.

In alignment with global environmental concerns and trends, BenQ Materials conducts annual internal audits and third-party verifications to ensure the effectiveness of its management systems. The company's major operational sites are certified under the ISO 14001 Environmental Management System. Additionally, the Taoyuan site is certified under the ISO 46001 Water Efficiency Management System.

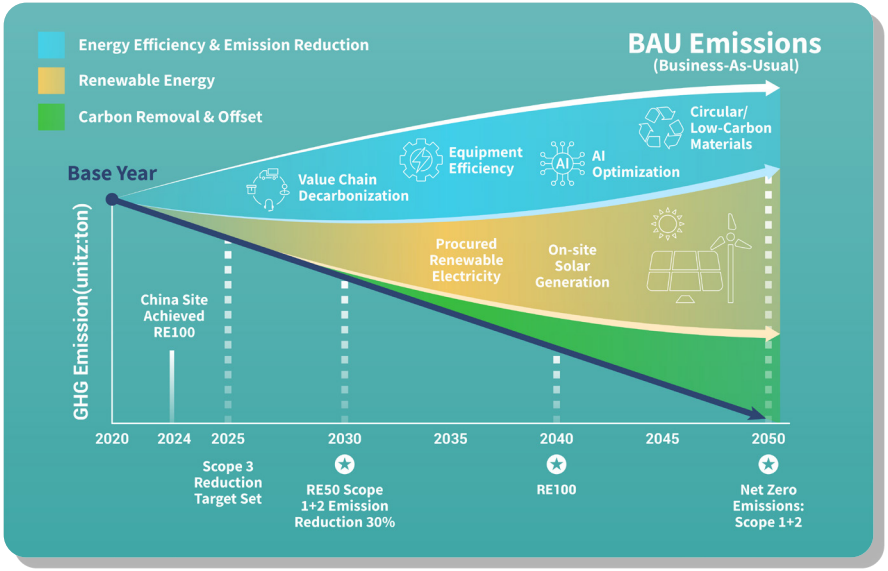
Furthermore, the Taoyuan, Longtan, Suzhou, Wuhu, Yunlin Polymer, and Yunlin Manufacturing Site III have obtained ISO 50001 Energy Management System certification. ISO 14067 Carbon Footprint verification has also been completed for products including polarizers, textile fabrics, and battery materials. For more information, please refer to Appendix 9-7: Overview of Management System Implementation.

Environmental Management Item	Environmental Management Goal
Climate Change Response	Reduce greenhouse gas emissions (Scope 1 and 2), using the baseline year 2020 as the reference.
	Increase the share of renewable energy usage.
Energy Management	Reduce non-renewable energy consumption intensity, using the baseline year 2020 as the reference.
	Promote company-wide energy-saving initiatives annually.
Water Resource Management	Reduce water withdrawal intensity (excluding reclaimed water), using 2020 as the baseline.
	Increase water reuse rate.
Zero Waste to Landfill (Reduction and Circularity)	Increase the waste resource recovery rate.

Environmental Investment Costs

Note: Environmental expenditures include costs for waste treatment, pollution control, and capital expenditures on equipment. In 2024, the primary investments were made in establishing new production processes at BMY with environmentally friendly pollution control considerations; replacing outdated boilers, regenerative thermal oxidizers (RTO), and blowers at the Taoyuan plant; as well as routine replacements of RTO heat exchange media, chemical dosing for the wastewater system, and maintenance of water treatment facilities. The total environmental expenditure amounted to NT$168.64 million, representing 0.91% of the annual revenue.

Climate Change Management



In 2021, BenQ Materials officially set its 2050 net-zero emissions target through the ESG Sustainability Committee. In alignment with the results of its greenhouse gas (GHG) inventory and the company's development trends, BenQ Materials has formulated short-, medium-, and long-term carbon reduction goals and strategies. To address climate change mitigation and adaptation, the company continues to implement the ISO 14001 Environmental Management System and ISO 50001 Energy Management System while carrying out various energy-saving, carbon-reduction, and resource efficiency improvement initiatives.

In recent years, the company has proactively invested in the application of artificial intelligence (AI) technology and new equipment to enhance production efficiency and achieve low-carbon transformation. Additionally, BenQ Materials has installed on-site solar power systems at its facilities to expand the use of renewable energy and is dedicated to developing low-carbon, green products. The company collaborates closely with sustainable supply chain partners, comprehensively advancing toward low-carbon, green, and sustainable corporate development.

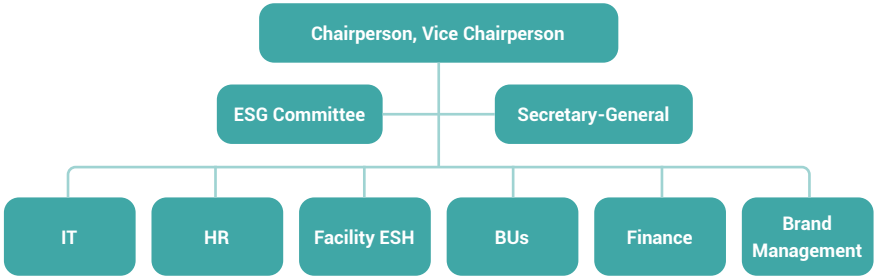
BenQ Materials supports the Paris Agreement and commits to limiting global warming to well below 2˚C and strives to pursue efforts to limit the temperature increase to 1.5˚C. Although the company has not yet obtained certification for the 1.5˚C target under the Science Based Targets initiative (SBTi), it has completed its carbon inventory and formulated carbon reduction pathways and targets. In the future, BenQ Materials will carefully assess the feasibility of applying for SBTi certification based on actual operating conditions and industry development trends.

Every year, BenQ Materials engages in regular dialogues with the Taiwan Panel & Optoelectronic Materials and Device Association (TPSA) and the Taiwan Climate Partnership (TCP), discussing sustainability topics related to climate change, including the application of carbon reduction technologies, renewable energy procurement strategies, and industry sustainability trends, as well as sharing practical experiences and challenges. Through ongoing collaboration and dialogue, the company ensures that its actions and those of its industry partners are aligned with the Paris Agreement goal of limiting global warming to 1.5˚C.

Moreover, the company regularly reviews the climate positions of its industry sectors and the trade associations it participates in to ensure alignment with its own climate commitments and the targets of the Paris Agreement. If any inconsistencies are identified, appropriate actions will be taken, including expressing its stance to the associations or re-evaluating its membership.

Climate Change Management Working Team

BenQ Materials has established the "Climate Change Management Task Force," with the CEO and General Manager serving as Chairman and Vice Chairman, respectively. The first-level supervisors from each unit serve as committee members, and the CFO/Risk Management Unit serves as the Secretary General. This task force is responsible for promoting activities related to climate change management.

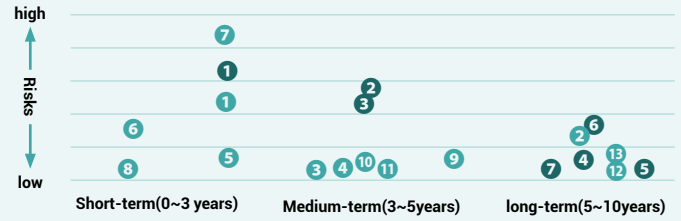


Climate Change Management Strategy and Actions

BenQ Materials manages climate-related risks and opportunities in alignment with the Task Force on Climate-related Financial Disclosures (TCFD) framework. The company identifies and evaluates five key climate-related risks and opportunities, taking into consideration potential financial impacts, urgency, co-benefits, economic viability, and technological feasibility. Based on this assessment, climate adaptation action plans are formulated and implemented.

BenQ Materials conducts internal management review meetings annually, and integrates climate risk management with its existing enterprise risk management framework. Climate strategies, targets, and action plans are reported to the Audit Committee and Board of Directors each year to ensure oversight and strategic guidance.

Aspect	BenQ Materials Strategy and Action Plan
Governance	1 The Board of Directors Regularly Reviews Climate-Related Risks and Opportunitie • Since 2022, BenQ Materials has reported annually to the Board of Directors and Audit Committee on the management of climate-related issues. The most recent report was completed on October 31, 2024. • The Climate Change Management Task Force organizational structure is shown above. Each year, the company identifies and assesses climate-related risks and opportunities. Based on a comprehensive evaluation of potential financial and other impacts, the task force formulates climate adaptation plans, which are reviewed in management review meetings chaired by the Chairperson/Vice Chairperson, ensuring alignment with corporate strategy and timely resource allocation.
Strategy	1 According to the climate-related risk and opportunity assessment methodology, internal definitions are as follows: • Time horizon for potential impacts: – Short-term: 0–3 years – Mid-term: 3–5 years – Long-term: 5–10 years • Impact severity is assessed based on: – Effects on assets and financials – Impacts on products and services – Impacts on personnel – Reputational impacts 2 Through the identification and assessment process, five key risks and opportunities have been prioritized: • Risks: – Extreme weather events (short-term) – Raw material shortages or increased costs (short-term) – Rising average temperatures (mid-term) – Changes in precipitation patterns (mid-term) – Stricter carbon disclosure requirements / carbon pricing mechanisms (short-term)



Transition Risks:

1. Strengthened carbon emission disclosure requirements/carbon pricing mechanisms
2. Requirements and regulations for existing products and services
3. Mandatory use of renewable energy
4. Insufficient training on new policies and regulations
5. Low-carbon alternative products and services
6. Stricter product regulations
7. Raw material shortages or cost increases
8. Labor market issues
9. Changes in consumer preferences
10. Increased stakeholder concerns
11. Poor performance in international initiative evaluations
12. Changes in consumer habits
13. Industry stigmatization

Physical Risks:

1. Extreme weather events
2. Average temperature rise
3. Changes in rainfall patterns
4. Wildfires
5. Food shortages
6. Increased likelihood of infectious diseases
7. Rising insurance premiums

• Opportunities:
– Research and innovation in new products and services (short-term)
– Renewable energy and energy-saving opportunities (short-term)
– Development and/or expansion of low-carbon products and services (short-term)
– Reduction of water usage and consumption (long-term)
– Recycling and reuse initiatives (short-term)

Aspect	BenQ Materials Strategy and Action Plan
Strategy	 **Opportunities:** 1. Adoption of more efficient production and distribution processes 2. Recycling and reuse 3. Transition to more efficient buildings 4. Reduction in water use and consumption 5. Work From Home (WFH) 6. Renewable energy and energy-saving initiatives 7. Development and innovation of new products and services 8. Development and/or increase of low-carbon products and services 9. Changes in consumer preferences 10. Use of new technologies 11. Entry into new markets 12. Sustainability-linked syndicated loans 3 Scenario Development Approach Includes: • Transition Scenario: Based on changes in regulations, policies, product demand, and green inflation-related transition assumptions. • Physical Scenario: Refers to SSP5-8.5 (very high emissions scenario) from the IPCC Sixth Assessment Report (AR6); due to limited external literature, China-based facilities refer to RCP8.5 from the IPCC Fifth Assessment Report (AR5).
Risk Management	1 Establishing a Climate Risk Identification Process Using the TCFD Framework: • Risks are identified and assessed following the TCFD framework, covering both transition risks (such as current and emerging regulations, legal, policy, technology, market, and reputational risks) and physical risks (both acute and chronic). • Identified risks are prioritized and analyzed based on the assessment results, and findings are reported to the Climate Change Management Task Force during its annual management review meetings to ensure effective implementation. 2 Integration of Climate-Related Issues into Enterprise Risk Management Processes: • High-risk climate issues are incorporated into executive-level management discussions. • Transition and physical risks are reviewed annually, and the corresponding adaptation action plans are adjusted dynamically. (Refer to Section 3-5 Risk Management in this report.)
Metrics and Targets	1 Climate Performance Management Indicators and Targets: • Greenhouse Gas Emissions: 30% reduction by 2030 compared to the baseline year 2020. • Renewable Energy Usage: 50% by 2030 and 100% by 2040. • Carbon Reduction for Existing Products: 55% reduction by 2030 compared to the baseline year. • Ultimate Goal: Achieve net-zero emissions by 2050. 2 Annual GHG Inventory and Strategy Review under ISO 14064-1:2018: • Conduct greenhouse gas inventory in accordance with ISO 14064-1:2018 and obtain third-party assurance statements. • Target a 30% reduction in emissions by 2030 compared to the 2020 baseline. • Strive for net-zero emissions by 2050 and achieve key climate-related goals in product design. • For detailed climate adaptation actions, please refer to the table below.

Climate Change Adaptation Action Plan

Climate-Related Risk/ Opportunity	Category	Time Horizon	Potential Impact	Potential Financial Impact	Management Strategy / Response	Response Cost
Physical Risk	Extreme Weather Events	Short term (0–3 years)	Power/water outage or factory flooding affecting production	Over 20M	• Strengthen factory power system resilience • Enhance factory water system resilience • Consider extreme weather risks in new facility design stage	Over 20M
	Changes in rainfall patterns and extreme weather	Mid term (3–5 years)	Labor shortage due to travel disruption, increased facility maintenance costs	5M-10M	• Identify low-lying roads near plants • Assess and introduce water-saving irrigation systems (Automation already implemented in plants)	1M-5M
Transition Risk	Policies & regulations, including carbon pricing and renewable energy mandates	Short to Mid term (0–5 years)	Carbon fees, higher product costs, potential penalties due to unmet green electricity requirements	10M-15M	• Install solar PV systems • Promote energy-saving and carbon-reduction measures • Participate in Taiwan green power market, integrate renewable energy	Over 20M
	Market: raw material cost increase or shortage	Mid to Long term (3–10 years)	Unstable raw material supply, cost increase	Over 20M	• Develop substitute material programs • Assist suppliers in energy-saving and carbon-reduction	Over 20M
	Technology: investment/ R&D failure in low-carbon alternatives	Short term (0–3 years)	Inability to meet customer expectations, potential revenue loss	Revenue-related, may affect financial forecasts	• Develop low-carbon products • Reduce production waste and promote circular reuse • Reduce packaging	Over 20M
	Consumer behavior change	Short term (0–3 years)	Order decline	Revenue-related, may affect financial forecasts	• Adjust product portfolio, expand other application fields	5M-10M
Opportunity	Develop or expand low-carbon goods and services	Short to Mid term (0–5 years)	Cost reduction, meet customer expectations, increase revenue	Revenue-related, may affect financial forecasts	• Introduce low-carbon materials • Green manufacturing • Reduce raw material usage • Equipment optimization	Over 20M
	R&D and innovation of new products and services	Long term (5–10 years)	New products contribute to increased revenue	Revenue-related, may affect financial forecasts	• Apply innovative technologies, develop alternative materials	1M-5M
	Use of more efficient production and distribution processes	Short term (0–3 years)	Reduce direct costs	1M-5M	• Process optimization	1M-5M
	Recycling and reuse	Short term (0–3 years)	Reduce indirect costs, increase revenue	15M-20M	• Packaging recycling • Rework of consumables • Regeneration and reuse	1M-5M

Currency: NTD

Greenhouse Gas Management

GHG inventory

BenQ Materials has established a comprehensive greenhouse gas (GHG) inventory mechanism in accordance with ISO 14064-1:2018 and the Greenhouse Gas Protocol issued by the World Resources Institute (WRI). Since 2008, the company has progressively built complete GHG emissions inventories for each manufacturing site and conducts annual GHG inventories.

Beginning in 2023, subsidiaries such as Cenefom Corp. and Jenjet Biotech Co., Ltd. initiated the implementation of self-inventoried GHG emission systems.

BenQ Materials' GHG emissions primarily originate from two major sources:

1 Scope 2-Indirect emissions from purchased electricity used in operations.

2 Scope 1-Direct emissions from internal activities involving the combustion of fuels such as natural gas and gasoline.

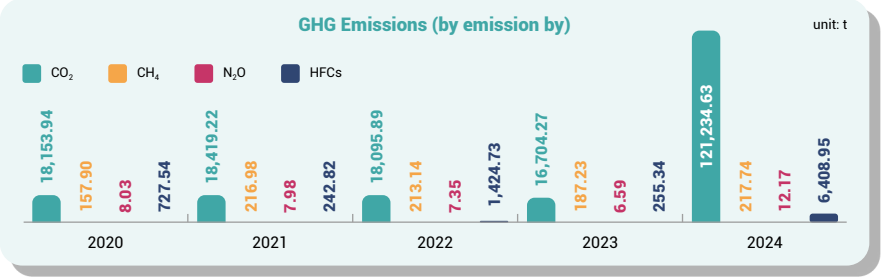
In 2023, the company re-identified and assessed Scope 3 categories, prioritizing based on the accessibility of activity data and emission factors. Selected Scope 3 categories included upstream transportation and distribution, business travel, employee commuting, purchased goods and services, capital goods, and waste generated in operations.

- In 2023, the Scope 3 boundary expanded to include employee commuting and downstream transportation and distribution.
- In 2024, additional Scope 3 items were inventoried, including purchased goods and services and upstream transportation and distribution.

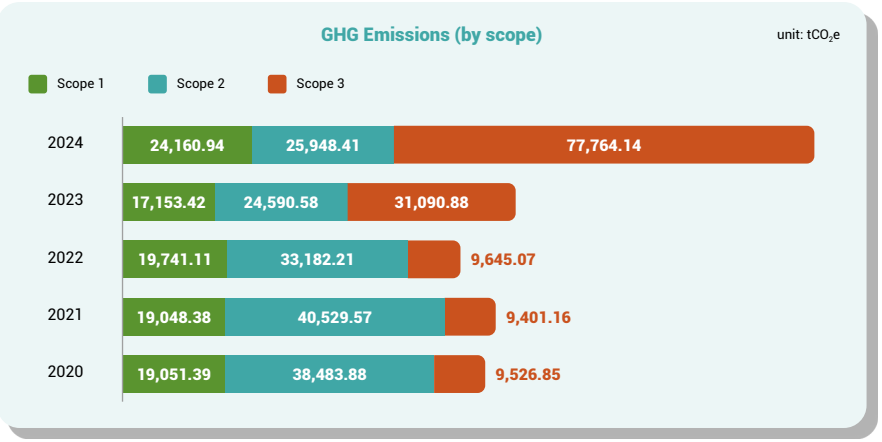
In 2024, combined Scope 1 and Scope 2 emissions totaled 50,109.36 metric tons of CO_2e, representing a 20.04% increase from 2023, mainly due to emissions from newly established production lines. However, this also reflects a 12.91% reduction compared to the 2020 baseline.

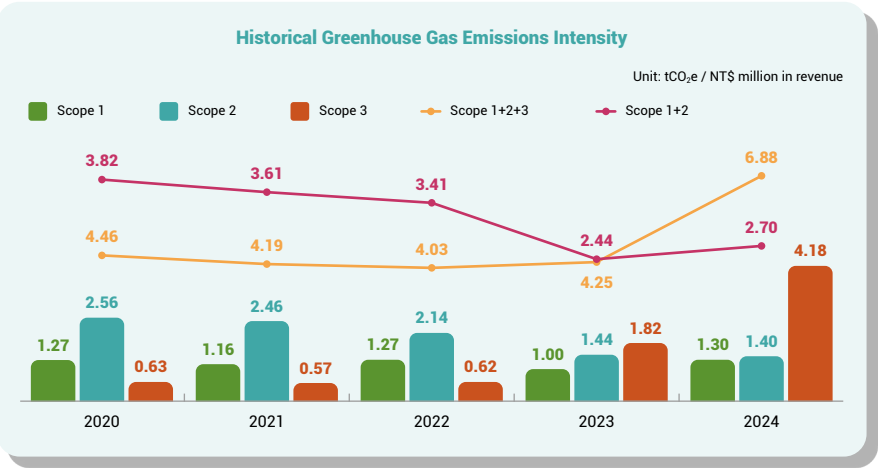
GHG emissions intensity (Scope 1 + 2) has steadily decreased since 2017. In 2024, emissions intensity reached 2.70 metric tons CO_2e per NT$ million revenue, reflecting a 10.60% increase from 2023 but a 29.49% reduction compared to 2020, driven by the adoption of renewable energy and carbon reduction investment projects.

Scope 3 emissions in 2024 totaled 77,764.14 metric tons of CO_2e, marking a 150.12% increase from 2023 and a 716.26% increase from 2020. The rise is primarily due to the expanded Scope 3 boundaries based on facility-specific characteristics and improved accessibility of emission factors, particularly in categories such as purchased goods and services and upstream transportation and distribution.



Note: BenQ Materials does not emit greenhouse gases such as perfluorocarbons (PFCs) or sulfur hexafluoride (SF_6), nor does it generate any biogenic GHG emissions.





Note 1: The operational sites verified by a third-party include: BenQ Materials Headquarters, Taoyuan Plant, Lungke Plant, Yunkang Plant, Suzhou Plant, Wuhu Plant, Lienhwa Medical, Hailu Plant, BMC (No. 28), BMM, and DTB. Scope 3 emissions have been accounted for at headquarters and Taiwan sites since 2019, and for overseas sites starting in 2022. Subsidiaries including Web-Pro, Cenefom, and GENE JET Biotech have only completed internal inventories; data from these sites are not yet disclosed in the current scope but are expected to be included after third-party verification in 2025.

Note 2: The GHG inventory is conducted based on ISO 14064-1:2018. As of 2023, all sites have completed third-party verification.

Note 3: The electricity emission factor for Taiwan sites is based on the 2023 emission factor published in 2024 by the Bureau of Energy: 0.494 tCO_2e/MWh.

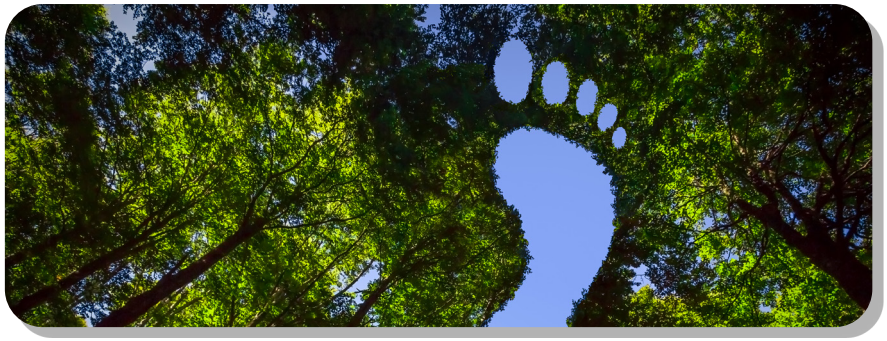
Note 4: The electricity emission factor for China sites is based on the 2022 national average carbon emission factor published by the Ministry of Ecology and Environment of China: 0.5366 tCO_2e/MWh.

Note 5: The organizational boundary for BenQ Materials Headquarters, Taoyuan Plant, Lungke Plant, Yunkang Plant, Suzhou Plant, Wuhu Plant, Lienhwa Medical, Hailu Plant, BMC (No. 28), BMM, and DTB is set using the Operational Control approach.

Note 6: GWP values used for emissions calculations:

For BenQ Materials Headquarters, Taoyuan Plant, Lungke Plant, Yunkang Plant, Lienhwa Medical, Hailu Plant, and BMC (No. 28): IPCC Fifth Assessment Report (AR5).

For Suzhou Plant, Wuhu Plant, BMM, and DTB: IPCC Sixth Assessment Report (AR6).

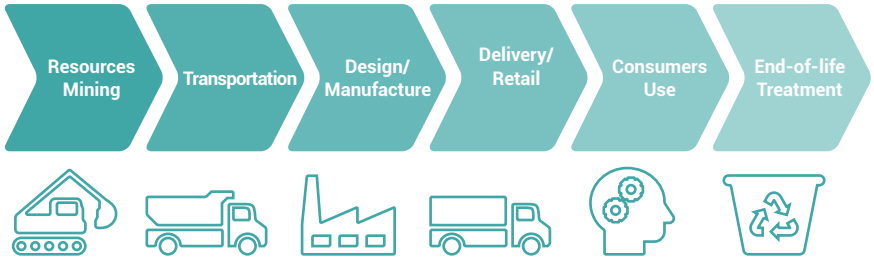


Product carbon footprint verification

BenQ Materials initiated product carbon footprint assessments starting in 2022.

To date, carbon footprint inventories have been completed for three product categories: waterproof breathable functional fabrics, polarizers for display materials, and advanced battery separator films.

All products have obtained carbon footprint statements based on a cradle-to-gate boundary.



Completed carbon footprint inventory and the proportion of carbon emissions at each stage for each product

Product Type	Raw Material Stage	Transportation Stage	Manufacturing Stage
Waterproof and Breathable Functional Fabric	92.68%	1.87%	5.45%
Display Material (Polarizer) Products	55.49%	0.48%	44.03%
Advanced Battery Separator Membrane Products	26.92%	0.17%	72.91%

Internal Carbon Pricing and Carbon Fee

BenQ Materials has long aligned with national greenhouse gas reduction policies and actively invests in energy-saving and carbon-reduction initiatives. Since 2021, the company has implemented an internal carbon pricing mechanism to proactively manage future carbon emission risks and enhance internal awareness of carbon management. Each year, reduction targets and performance reviews are governed through the ESG Committee oversight platform.

To accelerate its company-wide net-zero transition and promote decarbonization across operations, BenQ Materials launched an internal carbon fee system in 2023. Under this mechanism, a uniform carbon fee is applied to each business unit based on actual monthly energy-related emissions. A fee of NTD 900 per metric ton of CO_2e was initially adopted, with revenues collected into a centralized decarbonization fund, designated for investments in in-house energy efficiency upgrades and procurement of renewable energy.

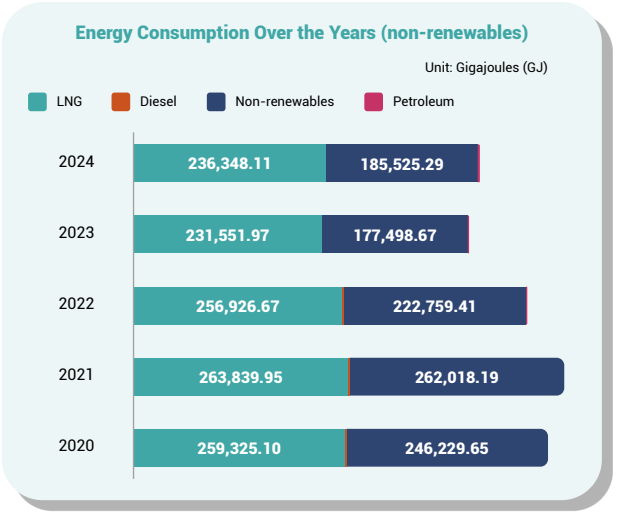
In 2024, the internal carbon price was increased to NTD 1,100 per metric ton (approximately USD 33.8).

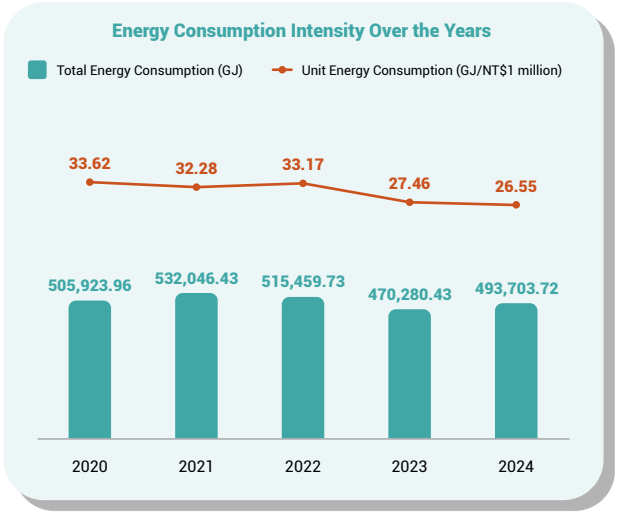
Energy Management

Energy Usage Data

In 2024, the main sources of energy used by BenQ Materials were natural gas and purchased non-renewable electricity, followed by diesel. The total energy consumption in 2024 included 6.2735 million cubic meters of natural gas, 68.8586 million kWh of electricity (including both non-renewable and renewable electricity), 10.9 thousand liters of gasoline, and 5.8 thousand liters of diesel. This equates to a total energy consumption of 497,266.58 GJ, representing an increase of 26,986.14 GJ or 5.74% compared to 2023.

Using revenue as the denominator, the 2024 energy intensity (defined as energy consumption per NT$1 million in revenue) was 26.74 GJ/million NT$, reflecting a decrease of 0.71 GJ/million NT$ or 2.60% compared to 2023.





Note 1: The 2024 disclosure scope for energy management includes the following operational sites: BenQ Materials Headquarters, Taoyuan Plant, Lungke Plant, Yungkang Plant, Suzhou Plant, Wuhu Plant, Hailu Plant, BMC (No. 28), BMM, and DTB.

Note 2: Energy consumption data from 2021 to 2024 has been updated. Data for subsidiaries (Web-Pro, Cenefom, and GENE.JET Biotech) is not included in the current disclosure and is expected to be incorporated in 2025 upon completion of third-party verification.

Emission Reduction Actions and Outcomes

To mitigate global warming and reduce operational risks associated with climate change, BenQ Materials continuously promotes green manufacturing by implementing energy-saving, emission-reduction, and resource-circulation initiatives aimed at minimizing resource use and consumption.

In 2024, a total of 21 electricity-saving projects were implemented, resulting in an annual electricity savings of 1.2623 million kWh and a corresponding reduction of 635.66 metric tons of CO_2e emissions. Additionally, six natural gas-saving projects were carried out, achieving an estimated annual reduction of 310.2 thousand cubic meters of natural gas and cutting carbon emissions by 588.49 metric tons of CO_2e.

Item	Main Energy-Saving Measures Implemented in 2024
1	Energy-Efficient Operation of Nitrogen Generators Upgraded operational controls to improve the energy efficiency of nitrogen generation systems.
2	Replacement of Lighting Fixtures with High-Efficiency Models Phased replacement of traditional lighting with energy-saving LED or high-efficiency fixtures across facilities.
3	Installation of Heat Pumps in MAU Systems at Yunlin Plant II Enhanced energy performance of Make-Up Air Units (MAUs) by adding heat pump systems.
4	Replacement of FFU AC Units with DC Motors / RCU with EC Fans Upgraded from alternating current (AC) motors to direct current (DC) and electronically commutated (EC) fans to increase ventilation energy efficiency.
5	Replacement of Aging Motors with High-Efficiency Permanent Magnet Motors Improved operational efficiency by replacing obsolete motors with energy-efficient permanent magnet types.
6	Installation of High-Efficiency Boilers at Taoyuan Plant Replaced outdated boilers with newly installed high-efficiency energy-saving boilers to enhance thermal efficiency.

Year	Electricity conservation effectiveness (kWh)	Emissions reduction effectiveness (tCO_2e)
2020	707,809	355.32
2021	779,358	391.24
2022	2,405,830	1,264.99
2023	1,413,562	732.75
2024	1,262,304	635.66

Note:All reduction measures fall under Scope 2.

Year	Natural gas conservation effectiveness (m3)	Emissions reduction effectiveness (tCO_2e)
2020	341,808	646.02
2021	505,615	950.05
2022	293,972	552.37
2023	87,777	178.40
2024	310,197	588.49

Note:All reduction measures fall under Scope 1.

Energy Transition – Use of Renewable Energy

In 2023, BenQ Materials, following the renewable energy strategic goals of the Qisda Group, advanced its original RE100 target timeline from 2050 to 2040 and established a concrete strategic roadmap for achieving RE100. In addition to continuing investments in self-built solar power generation systems for on-site use, the company has actively collaborated with renewable energy electricity providers to gradually expand its procurement of renewable energy, thereby fulfilling its commitments to energy transition and net-zero carbon emissions.

As of 2024, BenQ Materials' total annual renewable energy consumption reached 16,336.3 MWh (equivalent to 16.3363 million kWh), comprising:

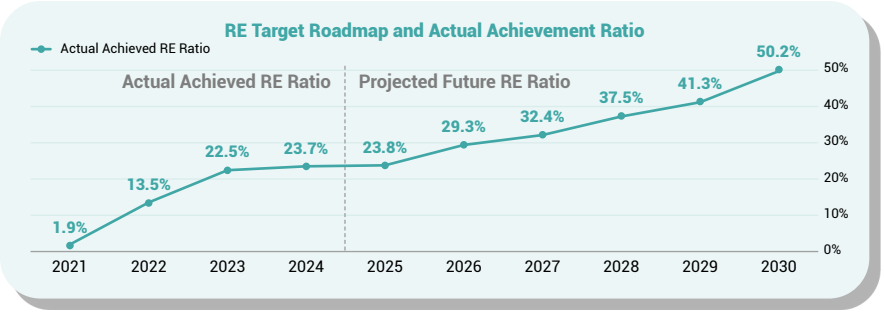
- Electricity generation from self-built solar power systems totaling 3,384.3 MWh (338.43 million kWh).
- Procurement of externally purchased renewable energy totaling 2,451.0 MWh (245.10 million kWh).
- Purchase of China-issued GEC/I-REC renewable energy certificates for the China facilities, totaling 10,501.0 MWh (1,050.10 million kWh).

The above renewable energy usage has been utilized to offset the carbon emissions associated with externally purchased electricity across all sites during 2024, as part of the company's voluntary carbon reduction initiatives.

Looking ahead to 2025, the company will continue to increase investments in self-built solar power generation systems for on-site use and further expand external procurement of renewable energy, moving steadily toward achieving the RE100 targets set by the Group and the ESG Sustainability Committee.

Among these efforts, BenQ Materials' textile production facility located in Yunlin (hereinafter referred to as the "Yunlin Textile Plant") completed the installation of its solar power generation system in 2024. The system operates under a "self-generation and self-consumption" model, supplying electricity required for the plant's operations. According to statistics, the total electricity consumption of the Yunlin Textile Plant in 2024 amounted to 287,862 kWh, all of which was supplied by the self-installed solar power system, thereby achieving the goal of 100% renewable energy usage for the plant's annual electricity needs.

To enhance transparency and ensure credibility in external disclosures, the Yunlin Textile Plant has also applied for and obtained a total of 804 "Self-Use Renewable Energy Certificates" from the Taiwan Renewable Energy Certificate Center (T-REC), corresponding to its actual renewable electricity generation for the year. The certificates fully cover the facility's total annual electricity consumption.



Self-Generated Renewable Energy

Since 2021, solar power systems have been progressively installed at various plants to supply electricity for internal use, thereby reducing purchased electricity and carbon emissions. In 2024, a new solar power installation project was completed and commissioned at the YCT Manufacturing Plant 1. The total electricity generated across all plants in 2024 reached 3.3843 million kWh. In 2025, the scale of solar power generation systems will continue to expand at YCT Manufacturing Plant 1 and Plant 2. It is estimated that the total electricity generation across all plants will reach 5 million kWh in 2025.

Year	Generation capacity (kWh)
2021	1,379,200
2022	2,530,591
2023	2,796,485
2024	3,384,296

Green Building Certification

In 2024, the YCT Manufacturing Plant 1 obtained the LEED BD+C Silver certification from the U.S. Green Building Council, and in 2025, it received the Golden Level Green Building Label from the Taiwan Architecture & Building Center. The facility is designed as a central air-conditioning-type plant using top-tier energy-efficient chilled water systems. The three-story steel-frame building features an energy-saving envelope and high-reflective Low-E glass windows to reduce external heat transfer and increase natural lighting for energy conservation. The plant is equipped with high-efficiency LED lighting, including LED panel lights in office areas. Rooftop solar panels provide green electricity and serve as thermal insulation to reduce air-conditioning energy consumption. During construction, recyclable building materials were reused to minimize construction waste. For water conservation, water-saving certified fixtures were installed, and both air conditioning condensate and rainwater are reused for cooling towers and landscape irrigation.

Promotion of Green Factory Certification

In response to global climate change and environmental protection trends, and upholding the spirit of corporate sustainable development, BenQ Materials actively promotes the attainment of green factory certifications for its facilities in both Taiwan and overseas, striving to create environmentally friendly, energy-efficient, and high-performance manufacturing environments.

The company is committed to reducing resource waste at the source, improving energy efficiency, and adopting low-carbon, low-pollution production technologies. It has implemented ISO 14001 environmental management systems and energy management systems, while strengthening waste sorting, recycling, and reuse mechanisms to realize green supply chain management. Employees are encouraged to participate in green initiatives and environmental education to enhance overall environmental awareness.

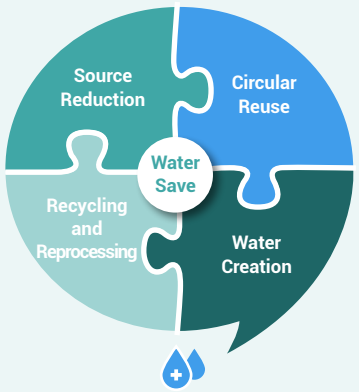
In 2024, the Suzhou plant obtained the 3A-level Green Factory Certification from the Suzhou Municipal Bureau of Industry and Information Technology. Establishing green factories not only reduces operational risks and costs but also reflects the company's commitment to corporate social responsibility. BenQ Materials will continue taking concrete actions to implement green principles and move toward a low-carbon, sustainable future.

Water Resource Management

Starting from the sustainable use of water resources, BenQ Materials follows three main principles: water inventory, water-saving measures, and recycling and reuse. These principles extend to four strategic stages: wastewater reduction, wastewater recycling, development of new water sources, and zero wastewater discharge. Wastewater reduction and recycling are approached from four main water usage areas: domestic, process, air conditioning systems, and boiler water. The company aims to gradually improve water use efficiency and strategies. In 2023, the Taoyuan Plant introduced the ISO 46001 Water Efficiency Management System and passed the verification.

Starting from Sustainable Water Resource Utilization, Implementing Four Major Water Usage Directions to Enhance Water Reuse Rate

- Using water-saving facilities, such as water-saving toilets and faucet aerators
- Improving the water production rate of the pure water system
- Utilizing rinsing in the production line to replace high water-consuming membranes to reduce water usage

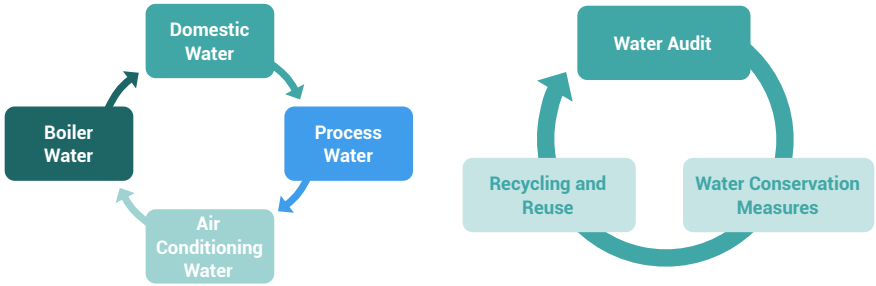


- Recycling steam condensate
- Filtering and circulating water in production line tanks
- Circulating water usage in cooling towers

- Classifying and recycling wastewater from production processes
- Recycling and reusing pure water system wastewater
- Recycling and reusing domestic wastewater

- Recycling and using air conditioning condensate
- Storing and using rainwater/reclaimed water for toilet flushing and irrigation

Water Principles and Directions



Water Consumption Overview

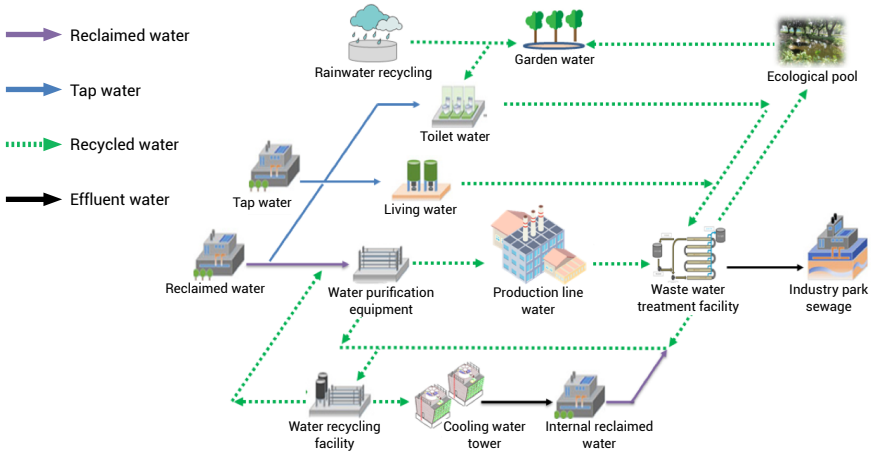
BenQ Materials' main water uses at each plant can be divided into process water, fire-fighting water, and domestic water. The water sources and supply units are specified according to their respective locations.

Business Location	Withdrawal Source	Usage			Supply Unit
		Process	Firefighting	Living	
Taoyuan Plant	Shihmen Reservoir, and some from groundwater	●	●	●	Taiwan Water Company
Longtan Tech Plant	Shihmen Reservoir	●	●	●	Taiwan Water Company
Yunlin Tech Plant	Hushan Reservoir and Jiji Weir	●	●	●	Taiwan Water Company
Suzhou Plant	Yangcheng Lake Area (Yangtze River water consumption scope)	▲	●	●	Suzhou Qingyuan Water Resource Ltd.
Wuhu Plant	Yangtze River	●	●	●	Wuhu Huayen Water Resource Ltd.

Note: The scope of water resource disclosure for 2024 includes: BenQ Materials Headquarters, Taoyuan Plant, Longtan Plant, Yuntech Plant, Suzhou Plant, Wuhu Plant, Lianhe Medical Materials, Hailu Plant, BMC (No. 28), BMM, and DTB.

Currently, all plants in Taiwan are equipped with on-site wastewater recycling and treatment facilities. 100% of the discharged wastewater is directed to the industrial park wastewater treatment plants for further processing. Each industrial park treatment plant has established influent standards that must be met for discharge. At the Suzhou plant, domestic wastewater is discharged into the municipal sewage system and treated by the municipal wastewater treatment center. At the Wuhu plant, process wastewater from coating roller cleaning undergoes coagulation, sedimentation, and filtration, then is combined with domestic sewage, treated via a septic tank, and finally discharged into the sewage pipeline. In 2024, no water quality abnormalities were reported at any plant.

Plant Water Consumption Process



Wastewater discharge standard and inspection items

Business Location	Wastewater Discharge Standard	Inspection Item
Taoyuan Plant	Sewage Water Quality Standard of Guishan Industrial Zone Service Center Sewage Treatment Plant	Water temperature, pH, BOD, COD, SS, boron, fluoride salts, copper, zinc, nickel
Longtan Tech Plant	Longtan Park Sewage Usage Fee Calculation Standard of Hsinchu Science Park Bureau, Ministry of Science and Technology	Water temperature, hydrogen ion concentration index (pH), biochemical oxygen demand (BOD), chemical oxygen demand (COD), SS, boron, fluoride salt, copper, zinc, nickel, anionic surfactant, ammonia nitrogen, nitrate nitrogen, cyanide, cadmium, total chromium, hexavalent chromium, total mercury, arsenic, lead, indium, gallium, molybdenum, true color
Yunlin Tech Plant	Sewage Water Quality Standard of Yunlin Technology Park	Water temperature, pH, COD, SS, ammonia nitrogen
Suzhou Plant	"Sewage Comprehensive Discharge Standard" GB8978-1996, "Sewage Water Quality Standard for Discharging Sewage into Cities and Towns" GB/T31962-2015	Animal and vegetable oils, pH, COD, SS, ammonia nitrogen, total phosphorus (TP)
Wuhu Plant	"Sewage Comprehensive Discharge Standard" GB8978-1996 Level 3 standard	Animal and vegetable oils, pH, BOD, COD, SS, ammonia nitrogen

In 2024, BenQ Materials (excluding subsidiaries) recorded a total water withdrawal of 357.25 million liters (ML) across all facilities, representing an increase of 14.80 ML compared to 2023. The total wastewater discharge amounted to 276.48 ML, which was directed to industrial park wastewater treatment plants—an increase of 7.24 ML compared to 2023. The water consumption was 80.77 ML, mainly due to evaporation losses from cooling towers in the chilled water system.

In 2024, the discharge rate (wastewater discharge / total water withdrawal) for BenQ Materials was 76.03%. Considering internal water reuse, including process water recovery, scrubber water recovery, reclaimed process water treatment, ROR circulation reuse, wastewater treatment reuse, and HVAC water reuse, the R2 (reuse rate) reached 86.73%. Including water reused from cooling towers, the R1 (total plant reuse rate) reached 97.39%.

Statistics of Water Withdrawal Over the Years

Unit: Megaliters (ML)

Withdrawal Source	Type	2020	2021	2022	2023	2024
Groundwater	Freshwater	0.16	9.17	0.07	0.10	0.4
Water from third party	Freshwater	442.36	439.02	425.85	342.35	356.85

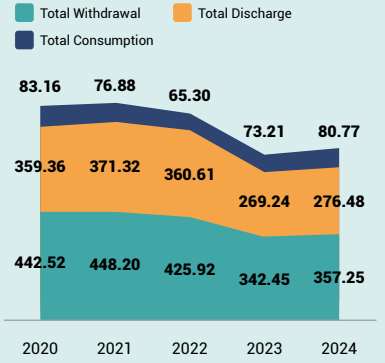
Statistics of Historical Water Discharge Amount

Unit: Megaliters (ML)

Withdrawal Source	Type	2020	2021	2022	2023	2024
Discharge amount according to destination	Water from third party	359.36	371.32	360.61	269.24	276.48
Discharge amount according to water quality	Freshwater	359.36	371.32	360.61	269.24	276.48
Discharge by level of water quality treatment	Primary treatment	68.39	77.54	75.96	61.85	63.67
	Secondary treatment	204.66	203.75	207.89	136.69	136.29
	Tertiary treatment	86.32	90.02	76.76	70.70	76.53

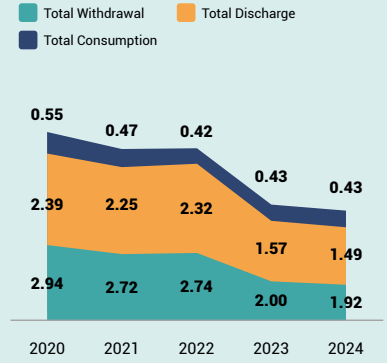
Annual water resource utilization intensity

Unit: million cubic meters per hundred million dollars



Annual water resource utilization overview

Unit: hundred cubic meters



Note 1: BenQ Materials uses the WRI Aqueduct water risk assessment tool to analyze the geographical locations of its operating sites. In the short term, only the Suzhou facility in mainland China is identified as a high water stress risk area, accounting for approximately 11.93% of total water withdrawal.

Note 2: The scope of 2024 water resource disclosures includes the following operational sites: BenQ Materials Headquarters, Taoyuan Plant, Longtan Plant, Yungke Plant, Suzhou Plant, Wuhu Plant, Lianhe Medical Materials, Hailu Plant, BMC (Plant 28), BMM, and DTB.

Note 3: Water resource data for the years 2021–2024 have been updated. The disclosed figures do not include subsidiaries (Web-Pro, Cenefom, and GENE.JET Biotech). Third-party verification is expected to be completed in 2025, after which these subsidiaries will be included in the disclosure scope.

Water risk management

According to the Global Risks Report 2023 by the World Economic Forum (WEF), the fourth most severe global risk over the next decade is natural resource crises, which includes water scarcity. Referencing data from the AQUEDUCT Water Risk Atlas by the World Resources Institute (WRI), BenQ Materials has assessed the water-related risks of its operational sites.

The assessment results show that in the short term, only the Suzhou facility in mainland China faces a high water stress risk. Other sites are considered to be at low water risk levels.

However, taking long-term climate change impacts into account, the Yungke site in Taiwan is projected to experience increased water stress and a shift to medium-level water risk. Accordingly, response strategies must be developed to enhance water risk resilience at this location.

Analysis of Significance of Water Impact

Business Location	Supplier	Supply Volume1 (Ml/day)	Consumption Volume2 (Ml/day)	Significance of Impact3
Taoyuan Plant	Danna Purification Plant	38.25	0.03	0.09%
Longtan Tech Plant	Longtan Purification Plant	13.76	0.04	0.28%
Yunlin Tech Plant	Yunlin Tech Purification Plant	1.6	0.002	0.14%
Suzhou Plant	Suzhou Qingyuan Water Resource Ltd.	45	0.008	0.02%
Wuhu Plant	Wuhu Huayen Water Resource Ltd.	87	0.002	0.002%

Note 1: Water supply data source: Official data published by the local government.
Note 2: Water consumption data source: Average water volume statistics from the plant.
Note 3: Usage impact = (Water consumption ÷ Regional water supply) × 100%

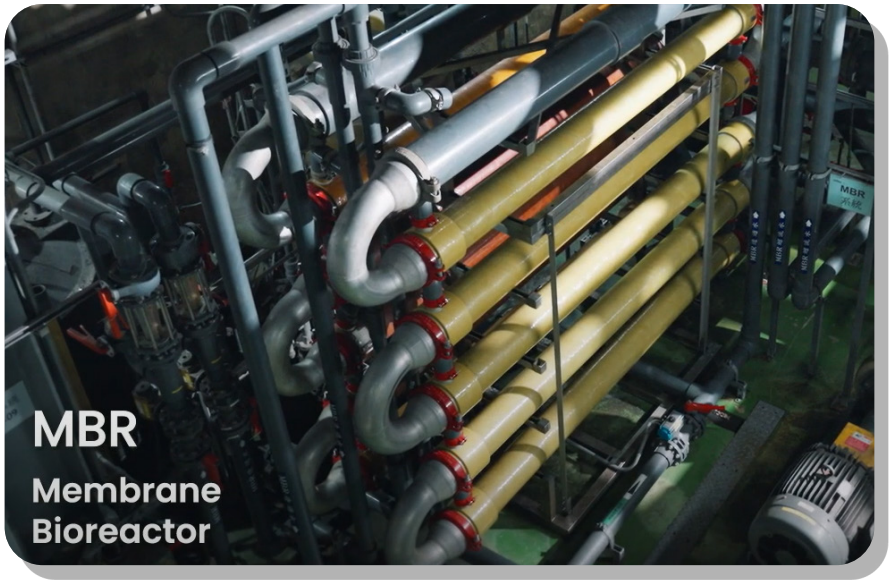
Water is one of the key global resources. Additionally, the risk and importance of water availability and use matter our operational activities and supply for the supply chain. In response to business disruption resulting from the potential risk of water suspensions and droughts due to climate change, we have established three major risk response strategies: external water information reporting system, internal water management system, and emergency response mechanism to enhance overall water risk resilience.

Water risk management approaches

- Establish a plant-wide water conservation management program and implementation plan and set up a task force.
- Analyze, inventory, and calculate plant water consumption, establish feasible solutions, and implement water conservation plans.
- Take the water conservation awareness education courses and training organized by the government and professional organizations.
- Enhance awareness and enrich professional knowledge of water conservation through awareness education and internal training.
- Each department sends seed personnel to implement water conservation work.
- Establish the water incoming and suspension information management report system to enhance the warning and response capabilities of water risks.
- Establish the drought response mechanism according to the government's water condition indicator.

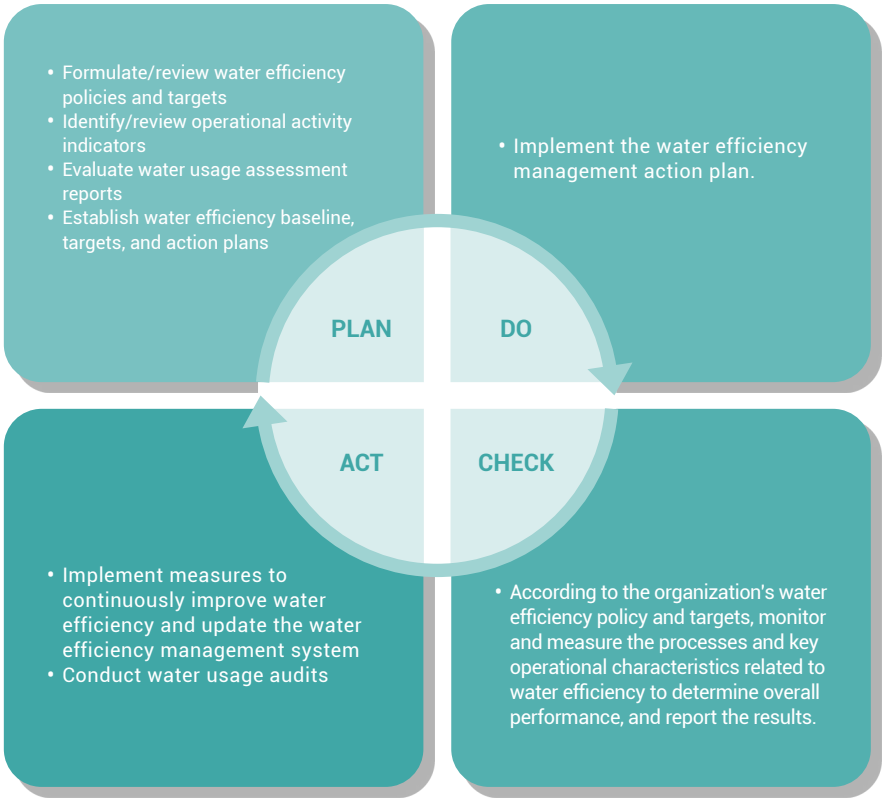
Drought Response Mechanism

	Rationing Stage	Government Policy	BenQ Materials' Response Plan
Condition Blue Normal Water Conditions	NA	Water supply stabilization	Normal withdrawal for production use
Condition Green Slightly Tight Water Conditions	NA	Recommendation for fallowing	Trial operation of the well water system every two weeks Notification of water tank contractors
Condition Yellow First Stage Water Restrictions Nighttime Reduced Pressure Supply	Stage 1 rationing	Supply with reduced pressure at off-peak hours and specific periods	Trial operation of the well water system every week Notification of water tank contractors
Condition Orange Second Stage Water Restrictions Reduced Supply of Non-Essential Water	Stage 2 rationing	1,000MT/month for industrial users Supply reduction by 5-20%	Initiation of the well system at Taoyuan Plant Notification of water tank contractors
Condition Red Third or Fourth Stage Water Restrictions Rotational Water Supply	Stage 3 rationing	Supply by region or time-based water suspension	Initiation of the well system at Taoyuan Plant Activation of water tank supply



Establishment of the water efficiency management system

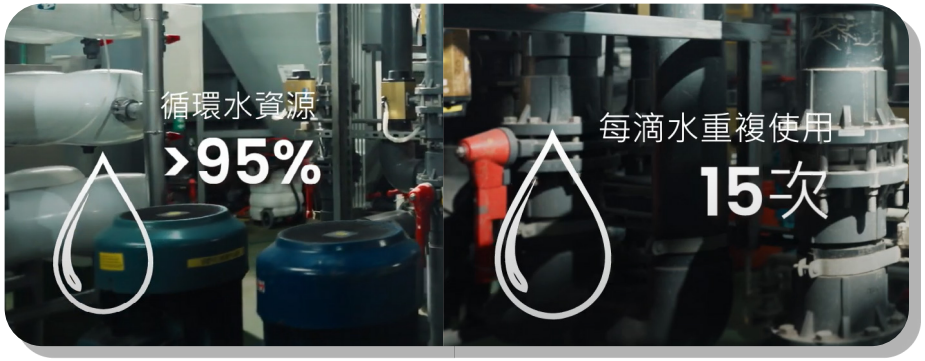
In 2023, the Taoyuan Plant began establishing the operational system for the ISO 46001 Water Efficiency Management System. By the end of 2023, the plant completed the verification and introduced a water use baseline. Daily audits of water use rationality were conducted to enhance the company's water resource management level and achieve environmental sustainability goals.



Water Conservation Solutions

In 2024, BenQ Materials continued to implement water-saving initiatives, including ongoing collaboration with production lines to recover regenerated ultrapure water, enhance the efficiency of wastewater recovery systems, improve process wastewater recycling, and recover condensate water—consistently reducing water resource consumption in manufacturing processes.

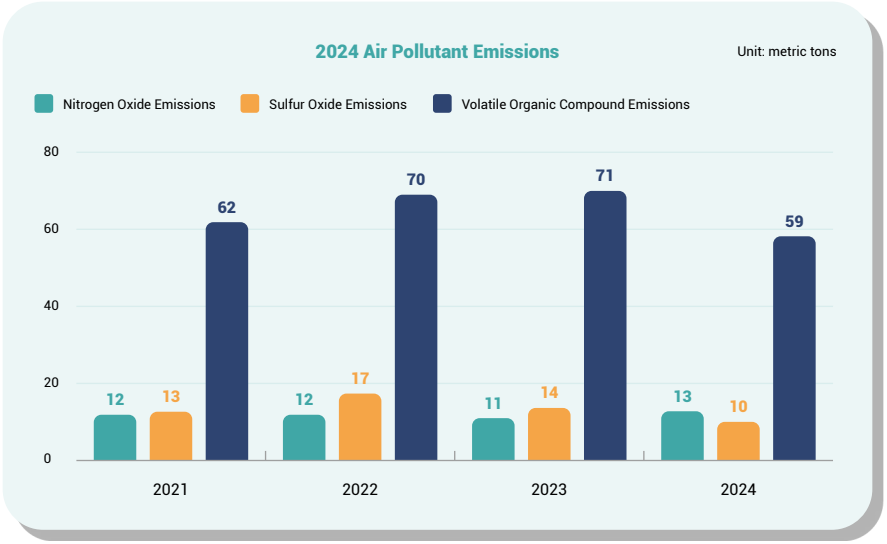
Year	Effectiveness (m3)
2020	14,290
2021	49,439
2022	12,562
2023	12,879
2024	**7,238**



Air Population Control

BenQ Materials monitors air pollutant emissions through its ISO 14001 environmental management system and has installed pollution control equipment such as regenerative thermal oxidizers (RTO), scrubbers, and baghouse dust collectors to treat process exhaust gases and minimize air pollution impacts. All pollution control facilities are operated and maintained by dedicated personnel, and monitoring is strengthened through centralized control systems and inspection mechanisms, with a focus on controlling volatile organic compounds (VOCs).

From 2021 to 2024, VOC emissions showed a decreasing trend. In 2024, the total VOC emissions amounted to 59 metric tons, representing a reduction of approximately 16.9% compared to 2023. This data covers the Taoyuan, Lungke, and Yungkang sites, which are the only sites with VOC emissions, achieving 100% coverage. VOC treatment efficiency has remained stable at over 98%, surpassing the regulatory requirement of 92%, and all emissions data have been subject to unannounced inspections and audits by environmental authorities.



Note 1: Air pollutant emissions at BenQ Materials mainly include nitrogen oxides (NO), sulfur oxides (SO), and volatile organic compounds (VOCs). Emissions data cover the Taoyuan, Lungke, and Yungkang sites. These sites do not emit persistent organic pollutants (POPs), hazardous air pollutants (HAPs), or particulate matter (PM). The Suzhou and Wuhu sites, as well as subsidiaries Cenefom, GENE.JET Biotech, and Web-Pro, do not generate air pollutant emissions.

Note 2: Air pollutant emissions are estimated based on emission factors from the "Air Pollution Control Fee Collection Regulations."

Circular Economy

Waste Management

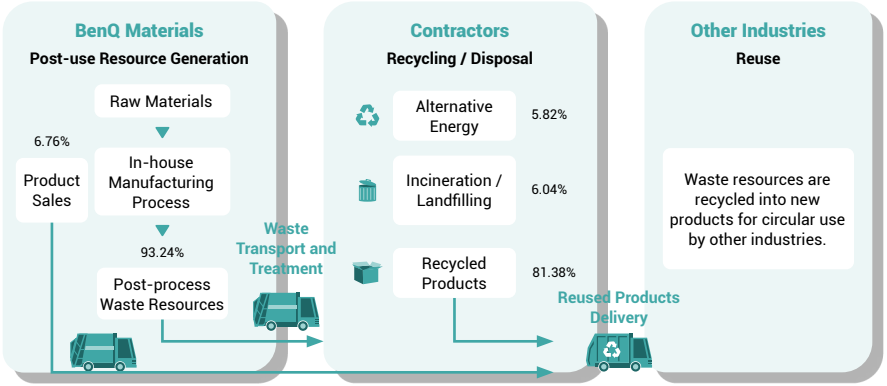
The waste generated during business operations must be properly managed, as improper disposal can cause severe environmental pollution and negatively impact the quality of life of local communities. BenQ Materials is committed to minimizing the environmental impact of its products throughout their life cycle—from raw material selection, manufacturing, storage, transportation, and use to disposal. The company actively promotes responsible production and pursues a "zero production waste" goal through reduction and circular management strategies.

All major operational sites are certified under the ISO 14001 Environmental Management System, ensuring that environmental issues are systematically managed, effectively controlled, and continuously improved. Each year, BenQ Materials sets concrete environmental improvement targets and implements waste reduction and resource optimization strategies to lower environmental impact and reduce waste generated during production.

At the source, BenQ Materials actively evaluates strategies to minimize resource consumption (Reduce), optimizes material usage parameters and process technologies, and collaborates with supply chain partners to enhance material utilization efficiency—reducing waste generation at its root.

In alignment with circular economy principles, BenQ Materials prioritizes material recycling and energy recovery through meticulous resource sorting and classification. Waste materials that can no longer be used in-house are handled by qualified waste processors for proper reuse, with incineration or landfill reserved only as a last resort when recycling is not feasible. This ensures minimal environmental impact.

Through these initiatives, BenQ Materials not only reinforces its environmental responsibility but also advances toward a more sustainable production model—achieving a balance between environmental protection and economic development.

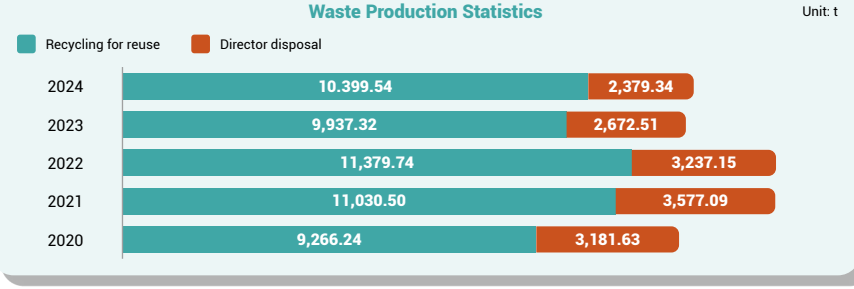


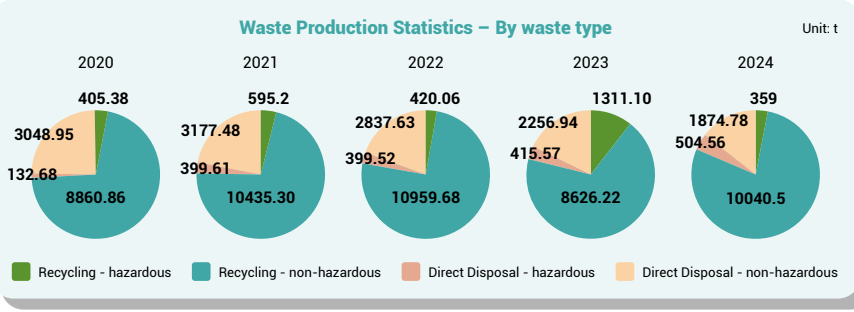
Waste Production Volume

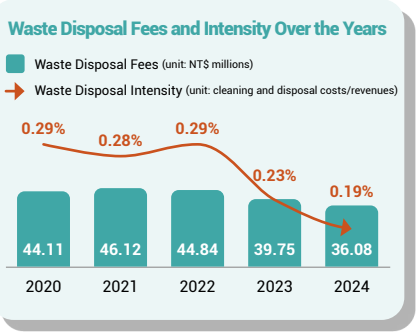
The types of waste generated at each BenQ Materials facility can be classified into seven categories: general industrial waste, potassium iodide, membrane waste, waste liquids and adhesives, recyclable waste liquids, solid waste, and recyclable resources.

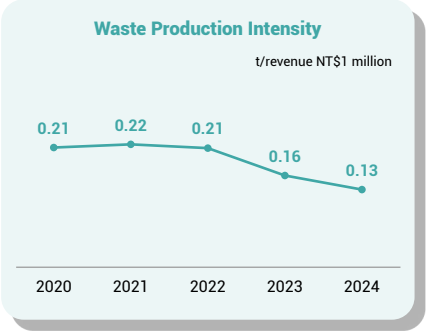
In 2024, the total waste generated was 12,778.87 metric tons, representing an increase of 169 metric tons compared to the previous year. The waste recycling and reuse rate in 2024 was 81.38%, an increase of 2.57% from the previous year. The waste removal and disposal cost in 2024 was approximately NT$36.08 million, accounting for 0.19% of revenue.

In 2024, the waste direct disposal intensity (direct disposal waste weight per NT$ million in revenue, excluding recycling) was 0.13









Waste Resource Recycling and Circular Reuse

BenQ Materials conducts monthly reviews of its waste recycling targets to ensure that all action plans are effectively implemented. To increase the recycling ratio of resource waste, the company has established formal waste management procedures and recovery goals. These are reviewed quarterly by the ESG Sustainability Committee to ensure long-term monitoring and performance tracking.

The company continuously explores reuse methods for various types of waste—either by developing new products or enabling circular reuse. Current efforts focus on distilled ethyl acetate (EAC), which is reused internally at production sites to reduce raw material consumption and waste generation. Additionally, BenQ Materials collaborates with external industries to use distilled EAC as their raw material.

The company is also seeking partners to reuse non-iodine white film waste as feedstock for other industries and continues to evaluate alternatives to auxiliary fuel as a disposal method.

BenQ Materials' main revenue-generating product is polarizers, whose primary material is base film. Due to current technological limitations, recycled materials from polarizers or other electronics cannot be reprocessed into base film suitable for polarizer production. Therefore, the company does not implement product take-back programs or e-waste recovery but instead handles waste through internal recycling or authorized external reuse channels.

In 2023, three circular reuse projects were launched and are still ongoing. The company continues to refine internal practices to enhance resource efficiency and promote environmental sustainability.

Distilled EAC (Ethyl Acetate) On-site Circular Reuse

Management Approach:
1. Conduct distillation treatment of waste solvent.
2. Perform quality verification on the recovered EAC.
3. Reintroduce distilled EAC into the production process for reuse.

Reduction Performance:
- Monthly replacement of virgin raw materials by approx. 5,295 kg of reused EAC.
- Circular reuse rate: 60%

Reusing Waste White Film as Raw Material for Other Industries

Management Approach:
1. Collect, sort, and recover waste film at production line.
2. Ensure that the recovered material meets downstream customer specifications.
3. Inspect edge cut and winding quality of film before shipment.

Reduction Performance:
- Waste film is reused as feedstock in other industries.
- Monthly waste volume reduced by 28 metric tons, simultaneously reducing treatment cost.

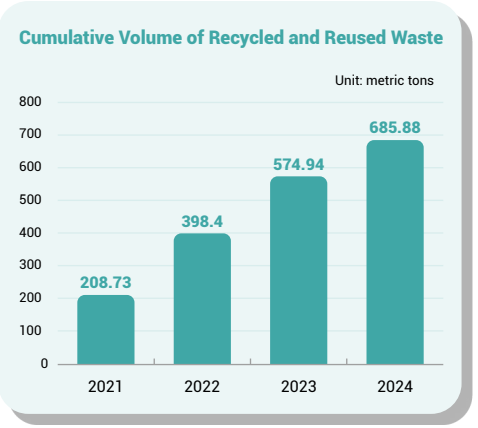
100% Reuse of Potassium Iodide (KI)

Management Approach:
1. Modify pipeline to collect discharged KI solution for reuse.
2. Use low-temperature circulation filtration to purify the solution.
3. Concentrate the diluted solution after replacement for reuse.

Reduction Performance:
- Annual reduction in KI consumption: 3,093 kg
- Waste chemical solution discharge reduced by 1,050 metric tons

Recycling and Circular Resource Utilization Data

In 2024, the recycling and reuse rate of waste reached 81.38%, showing a 2.57% improvement compared to 2023. The efficiency of PSA adhesive distillation units was further optimized, enhancing the distillation quality and characteristics. The recovered material was fully reintegrated into the production process, achieving 100% substitution of virgin materials, which effectively reduced raw material procurement and created economic value.



Since 2021, a cumulative total of 685.88 metric tons of reclaimed material has been reused on-site. The company continues to seek qualified downstream recyclers and industrial partners to upcycle waste as secondary raw materials or remanufactured products for factory reuse.

For detailed waste data, please refer to Appendix 9-1-1 Environmental Performance Data.

To advance toward a circular economy, BenQ Materials is exploring innovative production technologies, alternative raw materials, waste reduction measures, green supply chain initiatives, and "zero-discharge" solutions. In 2024, the company already introduce Solid Recovered Fuel (SRF) manufacturing units to convert in-plant waste into SRF, which can be reused as fuel for industrial boilers, replacing part of coal consumption.

In addition to SRF initiatives, the company is also exploring waste-to-product applications. Currently under testing, one project aims to repurpose residual film waste into construction bricks, extending the life cycle of materials and giving waste a "second life," thus embodying the circular economy concept.