

Preface

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Appendix

Carbon Reduction Measures

Process Decarbonization

Boilers which used on Very Low Sulfur Fuel Oil (VLSFO) as their main fuel source were the main energy consuming facilities of the Company in the past. With a view to reducing carbon emissions, a replacement and conversion program was launched in the third quarter of 2020 with the goal of replacing oil-fired boilers with gas-fired boilers, using Liquefied Petroleum Gas (LPG) as the fuel source . This program was completed in February 2021. Calculations based on IPCC carbon emission coefficients clearly indicate that this program has generated significant improvements in the field of GHG emissions, while still achieving equivalent heating values.

During the second quarter of 2023, the Longtan Plant replaced a 60RT water-cooled chiller that was in use for more than 20 years. It is estimated that the annual power consumption of the Longtan Plant can be reduced by 6.8%, and the carbon emissions by 51.046 tCO2e. In addition, to further improve energy efficiency, the factory conducted equipment inventory and energy review during the fourth quarter of 2024. The review found equipment that consumed high amounts of electricity and for which electricity saving measures were feasible. Four pieces of equipment had independent monitoring meters installed in order to establish an energy baseline and performance indicators, which are annual ISO 14001 management goals.

Product Decarbonization

Herbaceous plants, which represent our main raw materials, generate fewer GHG emissions and environmental impacts than chemicals used for production processes.

In order to reduce the carbon emission during transportation, we gradually changed the packaged beverages from glass bottles to aluminum bags. As such as the product, 4-in-1 Supplement, if calculated per the same unit of sales, the weight of the glass bottle is about 490 kg, and the weight of the aluminum bag is about 1.5 kg, and the carbon reduction rate is 99.7%.

Emission factor at equivalent calorific value (kgCO ₂ e /GJ)	CO ₂	CH ₄	N ₂ O	CO ₂ e
VLSFO	77.4	0.082	0.164	77.65
LPG	63.1	0.136	0.027	63.26
Estimated benefits of the conversion program	18%	-66%	84%	19%

Note: VLSFO is based on Residual Fuel Oil as defined in IPCC 2006 Guidelines for National GHG Inventories (Volume 2, Chapter 2).

Office carbon reduction

To balance operational efficiency and the goals of energy savings and carbon reduction, Microbio regularly reviews its office space and resource allocation annually. By optimizing resource use efficiency, it not only enhances management performance but also effectively reduces energy consumption and operating costs. In addition, the Company prioritizes the procurement of environmentally friendly or energy-saving labeled products for the office area, in order to implement and support sustainable operations through actual actions.

In 2024, the two servers (HPE ProLiant DL380 Gen10) purchased for the operation headquarters' new information server room have received the U.S. ENERGY STAR certification. According to the official data of Energy Star, such servers are able to reduce energy consumption by approximately 30% compared to traditional models, and each unit can save over 650 kWh of electricity annually with the power management function activated, thereby effectively reducing carbon emissions.

To further strengthen the use of renewable energies, the Group also plans to increase its annual green electricity purchase ratio for its operating offices starting in 2025. The goal is to achieve 75% green electricity with respect to the total electricity consumption of the operation center and offices.

• Energy Management Plan

In response to corporate governance evaluation and international sustainability disclosure trends, Microbio Group has launched an energy management plan and is gradually establishing the core elements in compliance with the ISO 50001 energy management system, which covers the aspects of energy audits, energy-saving actions, performance evaluations, and employee participation, in order to improve energy efficiency and to reduce greenhouse gas emissions. The Group's energy management plan covers the following key contents, which are classified and explained according to the energy management system, strategy development, and action plan:

(1) Energy review and audits:

- Since 2022, the Group has commissioned professional teams to conduct energy consumption analysis on the air conditioning, cold chain, and lighting equipment of its manufacturing and retail locations, including the Longtan Plant, Cotton Field Organic Qidu Logistics Center, and the Roosevelt retail store.
- The recommended measures include chiller replacement, cooling system defrost optimization, installing variable-frequency drives (VFDs) on air compressors and chilled-water pumps, and a proposal for the introduction of the Energy Management System (EMS) to enhance monitoring.
- Some of these items have been introduced based on technology maturity and cost-effectiveness. The remainder are listed in the medium- to long-term plans for further implementation depending upon operating conditions.

(2) Energy-saving targets:

- Establishment of 2025 energy-saving goals for the Longtan Plant: reduce annual electricity consumption by 3% in comparison to electricity consumption in the base year, 2021;
- The Group has also set the long-term goal of annual carbon reduction of 2% with the base year of 2024 and increase of the use of renewable energies, covering both the parent company and subsidiaries indicated in the consolidated financial statements.
- Although a complete energy baseline has not yet been established, we will continue to promote a comprehensive assessment of the electricity consumption structure and to further refine our goals.

(3) Energy-saving actions and performance evaluation:

- In 2023, old and obsolete 60RT servers exceeding 20 years of use at the Longtan Plant were replaced. This is estimated to reduce annual electricity consumption by approximately 6.8%, offsetting carbon emissions by 51.046 metric tons of CO₂e;
- In 2024, the Longtan Plant has also installed electricity monitoring meters on four systems selected based on their high electricity consumption and energy-saving potential, to be used as the basis for subsequent energy management system planning and tracking of energy-saving performance;
- From January to February 2025, the logistics center of Cotton Field Organic optimized the cooling defrost settings by extending the defrost frequency from 4 hours to 8 hours and reducing the defrost time from 40 minutes to 20 minutes. This results in an annual electricity consumption reduction of approximately 2,000 kWh. Subsequent performance will be monitored during the

summer to evaluate the effectiveness of these changes;

- The Company evaluates the effectiveness of energy-saving equipment annually by assessing the Taiwan Power Company's electricity bills and the actual usage curves, and gradually establishes key system monitoring data, in order to be used as the basis for making adjustments to the action plan.
- The Group has also set long-term goals for renewable energy use: With 2024 set to be the base year, the scope covers the parent company and subsidiaries included in the consolidated financial statements, and we expect to reduce carbon emissions by at least 2% annually starting in 2025. As part of our climate strategies and greenhouse gas reduction actions, we will also increase the proportion of renewable energy consumption.

(4) Innovation and R&D investment:

- Considering budget and scale limitations, the Group has not yet adopted large-scale energy-saving technologies. Currently, the focus is mainly on low-capital improvements and optimization of cooling defrost parameters and replacement of servers. Subsequently, the Group will continue to assess potential items and adjust the implementation strategy based on operating conditions and cost-benefit analysis.

(5) Energy efficiency training:

- Longtan Plant regularly organizes energy-saving and environmental training courses, and also emphasizes proper equipment operation and electricity-saving behaviors;
- Retail stores organize cold chain equipment operation training based on internal SOPs, covering the aspects of defrosting, temperature control, and access control management, in order to enhance the energy-saving awareness of entry-level staff.

(6) Introduction of green energy:

- Presently, green energy is still under the feasibility evaluation stage. In 2025, the Group will consider the purchase of renewable energy to supply electricity for the operation center and office area first, and also plans to install rooftop solar panels at the office and production plant of the subsidiary Microbio (Shanghai). According to the current assessment data, solar power generation in the plant area can reach 23–24% (weekdays) and 29% (weekends) of the total electricity consumption. The total installed capacity is 344.4 kW, distributed across three buildings. Detailed design and implementation will be subsequently conducted based on building structure, sunlight conditions and regulatory requirements.

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• Energy Consumption Analysis

The main energy consumed by Microbio and its subsidiaries is electricity, accounting for 88.49% of total energy consumption. We didn't use any renewable energy sources or sell energy to external parties in the reporting year. Detailed information on energy consumption at each site can be found in Appendix 5.

Energy Usage Trends of Microbio and Its Subsidiaries Over the Years

Energy Categories	2021	2022	2023	2024
1. Total Non-Renewable Energy (MWh)	3,099.365	12,818.570	13,572.386	14,301.420
-1.1. Microbio (MWh)	3,099.365	2,847.499	2,797.004	3,296.399
-1.2. Cotton Field Organic (MWh)	-	7,720.890	8,334.271	8,789.391
-1.3. Microbio (Shanghai) (MWh)	-	2,250.181	2,441.111	2,215.630
2. Total Renewable Energy (MWh)	0	0	0	0
Data Coverage (calculated based on the paid-in capital according to consolidated financial statements)	66.76%	100.00%	100.00%	100.00%

Note: Since 2022, subsidiaries Cotton Field Organic and Microbio (Shanghai) have conducted greenhouse gas inventories and energy analyses. Energy usage data for Cotton Field Organic from 2022 to 2023 also include Microsoy International.



Energy assessment for Microbio and Subsidiaries

