2.3 Waste Management

Material Topic

GRI 3-3

Management Policy

Internal Policies

- Environmental Safety and Health Policy
- Hazardous Waste Management Procedures and Waste Management Procedures

External Guidelines

- Central regulations and standards for environmental protection
- Local environmental authorities' public announcements

Management Commitment

- Complying with environmental regulations and requiring manufacturers to jointly implement waste management and control, and realizing our commitment to environmentally-friendly measures to protect the environment

Targets

Short-term Targets for 2023

- Continuously monitor the output of waste chemicals (including toxic substances) and subsequent processes to comply with environmental regulations.
- Continuously disclose information on waste production and resource recovery over the years in accordance with legal requirements.
- Track environmental protection regulations, evaluate the company's operating risks, and respond to regulatory requirements in a timely manner by controlling or revising waste management procedures and implementation measures.
- Introduce the ISO 14001:2015 Environmental Management System.
- Take the lead in obtaining relevant information on the Taipei GHG Inventories.

Medium-term Targets for 2024-2026

- Take on greater responsibility for in-house environmental management and incorporate environmental sustainability concepts.
- Through LCA and PDCA management, evaluate the downstream destination of waste, prioritize the implementation of recycling and reusing goals to reduce environmental impact.
- Strengthen audits and evaluations of vendors, and have “compliance with regulations and prioritizing the reuse of materials” as a criteria for selecting vendors in the future.
- Have PharmaEssentia Headquarters learn from Taichung Plant in executing the ISO 14001:2015 Environmental Management System.

Long-term Targets (2026 and beyond)

- Continuously maintain the ISO 14001:2015 Environmental Management System, use environmental impact assessment methods to reduce risks to the environment, seek relevant opportunities, and achieve sustainable environmental goals.

Input Resource

- The 2022 cost of business waste removal and treatment was approximately NT$1.091 million, an increase of 79% from last year.
- The waste output of the company is entrusted to the competent authority for approval of the removal and treatment by the waste treatment company responsible.
- Conduct inspections of temporary waste storage areas and annual audits of waste removal and treatment companies.
- Review the characteristics, sources, and weight of waste production, submit applications for changes to the business waste cleaning plan in a timely manner, and seek more suitable contractors.

Accountable Units

- ECCS - Environmental Friendliness Taskforce
- The Environment and Safety Group is responsible for formulating, planning, and promoting waste management goals, together with each output unit, to jointly implement the responsibility for environmental protection

Evaluation of Management Policy

Management Evaluation Mechanism

- Internal auditing: Conduct periodic audits of waste management vendors, and review internal waste sorting and storage processes. Regularly evaluate the intensity of waste generation by units.
- External auditing: Implement legal compliance checks for routine items according to environmental regulatory agencies.

2022 Evaluation Results

- External auditing: Implement legal compliance checks for routine items according to environmental regulatory agencies.
- Conform to the specifications of the waste management procedure manual, and periodically review and amend the company’s waste processing plan to comply with legal requirements.
- In 2022, due to the inability of the processing plant to accept waste chemicals (including toxic substances) produced by the Taichung Plant, waste disposal was postponed to 2023 (the Environmental Protection Administration also agreed due to the type and weight of the hazardous waste).
- In 2022, four deficiencies in compliance with regulations by the environmental regulatory agencies (the Environmental Protection Bureau of Taichung City Government and Central Taiwan Science Park Administration) were rectified.

The types of waste generated by our company are mostly general waste produced during operations, as well as waste chemicals generated during production processes. To effectively manage our waste, we have implemented a systematic waste management policy to avoid any legal issues or environmental risks that may arise from improper disposal. At the same time, we actively monitor various environmental regulations to ensure that we stay up to date with the latest trends and changes in the industry. By promoting source reduction, adjusting process design, and improving material utilization, we can effectively address changes in regulations while also achieving environmentally friendly practices. Starting in 2020, the waste production intensity of our products has decreased continuously for three years, and in 2022, the waste production intensity has decreased by 53.5% compared to 2021. Details on the company's environmental expenses can be found in our annual report.

Decreased continuously for 3 years

Decreased by 53.5%

Waste Generation and Disposal

GRI 306-1~2

The R&D and production processes of PharmaEssentia are precise and generate a low amount of total waste. However, we continue to strengthen the management of waste impact due to the presence of hazardous waste. We examine the details of the waste generation, removal, treatment, and recycling at different stages from the perspective of the product life cycle. We record the input of materials and the output of waste in detail, classify and dispose of different types of waste after impact assessment, and collaborate with third-party vendors to monitor and audit their practices to ensure that waste impact is properly managed.

Investment and Output

Input Characteristics

Production and quality control testing and analyses, as well as laboratory research and development, require raw materials that are classified as hazardous substances under the Environmental Protection Administration's regulations. According to the regulations for the biopharmaceutical industry, the resulting waste is considered hazardous waste and must be disposed of by authorized waste disposal companies. Some of the hazardous waste generated is classified as infectious waste, which is first subjected to high-temperature sterilization in the factory and laboratory. After sterilization, it can be considered general waste, but it is still treated as infectious waste to ensure proper control measures.

Activity Record

The usage and inventory of toxic chemicals are recorded in detail, and the amount of waste generated is calculated. In 2022, the total amount of waste generated was 24.911 tons, and the waste intensity per unit of product has been decreasing year by year.

Impact Assessment

Production and quality control testing and analyses, as well as laboratory research and development, are all carried out according to the regulations for the biopharmaceutical industry, and the raw materials cannot be arbitrarily substituted (including toxic substances). At the same time, the Good Manufacturing Practice regulations must be followed to avoid the reuse of pollutants that may affect the quality of subsequent drugs. The only option is to try to recycle the disposed-of waste to reduce the impact on the environment.

Disposal and Monitoring

Classification and Disposal

The disposal of hazardous waste, infectious waste related to biomedicine, liquid hazardous waste and non-hazardous waste are handled separately.

Multiple Monitoring

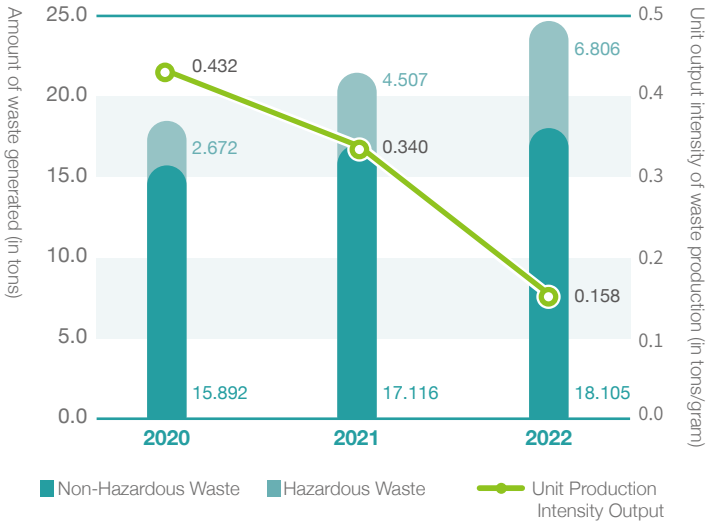
- The waste disposal vendor contracted by the company are all legally-registered Class A waste clearance/disposal companies. The operation is carried out through a three-party joint-declaration process, which requires the completion of signatures from PharmaEssentia, the waste disposal vendor and the final disposal vendor, and the completion of the process is reported on the Environmental Protection Administration's website to control and manage the final destination of the waste.
- Waste disposal companies are audited (clearance/disposal process) and regularly checked every year to ensure proper waste disposal. No violations of the law were found during past audits.

Amount of Waste Generated

GRI 306-3~5

As the global layout of PharmaEssentia continues to improve, and production capacity and efficiency continue to increase, the intensity of waste production per unit product has been decreasing for three consecutive years. In 2022, the intensity of waste production decreased by 53.5% compared to 2021. We continue to focus on waste reduction and improving unit production efficiency with the goal of reducing the intensity of waste production per unit. We follow short, medium, and long-term goals as well as action plans to improve our management practices and implement management measures.

PharmaEssentia and Panco Healthcare Waste Production and Unit Output Intensity Statistics in the Past 3 Years



Note: The waste data includes both PharmaEssentia and Panco Healthcare, but Panco Healthcare did not produce any hazardous waste, only generating municipal solid waste, with a monthly amount lower than the minimum quantity specified by the waste disposal company of 0.5 tons. The waste has been entrusted to a qualified vendor for transportation and incineration.