2023

ESG Sustainability Report

PharmaEssentia Corporation

Authentic ◆ *Eternal Value Creating*

CONTENTS

Foreword

1. About This Report

This report is PharmaEssentia Corporation's (referred to as PharmaEssentia, we, or the Company) 5th edition of the sustainability report, disclosing PharmaEssentia's commitments and actions towards sustainable development, including corporate governance, environmental protection, social engagement, employee care and talent development, as well as market access efforts in addressing the United Nations Sustainable Development Goal #3: Good Health and Well-being.

Reporting Boundary GRI 2-2

The reporting boundary includes PharmaEssentia's Taiwan headquarter (Taipei office and Taichung factory), subsidiary Panco Healthcare (referred to as Panco), PharmaEssentia USA, and PharmaEssentia Japan, all of which are in the biotechnology industry. Due to the different development stages of each subsidiary, incomplete data are separately explained in relevant tables. Future inclusion of data from other subsidiaries such as PharmaEssentia Korea, PharmaEssentia Singapore, PharmaEssentia Beijing, PharmaEssentia Hong Kong, and the PharmaEssentia Innovation Research Center Corporation, PIRC ,in the United States will be considered based on the company's operational status.

Report Writing Principles and Information Compilation

This report is prepared in accordance with the Taiwan Stock Exchange's "Sustainability Reporting Guidelines for Listed and Over-the-Counter Companies" and follows the General Standard 2021 version of the Global Reporting Initiative (GRI) and references the Sustainability Accounting Standards Board (SASB) Biotechnology industry standardsas well as the Task Force on Climate-related Financial Disclosures (TCFD). Additionally, due to the nature of the biotechnology industry, the Company adopts the Access to Medicine Index (ATMI) to provide explanations regarding drug access and patient safety. The financial data cited in the report are verified by Ernst & Young LLP and are consistent with the disclosed financial reports.

External Assurance GRI GRI 2-5

The content of this report is collected and compiled by the Sustainability Development Center of PharmaEssentia, reviewed and approved by its various functional teams and the Company, and presented to the authorized executives for signature before being reported to the Board of Directors. The report undergoes a moderate assurance level verification by the third-party verification organization (AFNOR Asia Ltd) in accordance with AA1000 Type 1.

Data Restatement GRI 2-4

Part of the data in this report is restated to adjust the 2022 greenhouse gas (GHG) inventory data, which is synchronized with the data after third-party verification; correct the misplaced data of hydrogen chloride emissions in 2022 air pollution as well as the number of employees and median salary data.

Reporting Period, Frequency, and Contact GRI 2-3

The data mainly covers the period from January 1, 2023, to December 31, 2023. Some data are included for comparison with previous years. The Company issues a sustainability report annually, and this report was released in June 2024, with the next report scheduled in June 2025.

We welcome your suggestions and thoughts on this report. Please feel free to contact us at:

- PharmaEssentia Sustainability Engagement Unit: PharmaEssentia Sustainability Development Center
- Address: 13F, F Building, No.3, Yuanqu St., Nangang District, Taipei City, Taiwan
- Phone: +886-2-2655-7688
- Email: CSR-ESG@pharmaessentia.com
- Company Website: www.pharmaessentia-esg.com

2. Messages from Management Team GRI 2-22

Chairwomen's Statement

Amidst the escalating global challenges of climate change, heightened tensions in US-China trade relations and geopolitical landscapes, and the ongoing impacts of the COVID-19 pandemic alongside the wave of technological digital advancements, it is imperative for us to uphold our founding principles as a pharmaceutical enterprise. We must continue to play a proactive role in breaking boundaries in innovation and drug development, leveraging our core influence to fulfill our mission of "Better science, Better lives," benefiting more patients, and contributing to a better life for humanity as a whole.

The year 2023 marked significant leaps in operational performance for PharmaEssentia. Our novel drug, Ropeginterferon alfa-2b (BESREMi R), for adult PV patients, successfully penetrated and generated revenue across three key pharmaceutical markets - Europe, the United States, and Japan, totaling NT$5.1 billion, representing a growth of approximately 77% from 2022. Additionally, we successfully completed Taiwan's biotechnology and medical industry's largest-scale international GDR fundraising project, raising a total of USD 462 million (approximately NT$14.1 billion). This infusion of funds aims to facilitate our global sales layout, enhance collaborations in new drug research and development, and support international clinical trials. Furthermore, our long-term efforts have been recognized by foreign institutional investors, as evidenced by our inclusion in the MSCI Global Standard Index, the TPEx 200 Index, and various FTSE Russell Global Equity Index Series. We have also received approval for official listing transfer from Taipei Exchange, TPEX, to the Taiwan Stock Exchange, TWSE on January 25, 2024.

Moreover, in 2023, it was the first phase of our company's sustainable development journey. Since the initiation of our sustainability journey in 2019 with the implantation of the first sustainable DNA, PharmaEssentia has been steadfastly advancing towards the United Nations Sustainable Development Goals. From initial inventory planning, execution, performance demonstration, outcome communication, to entering the phase of sustainable ascension, we have completed the first five-year blueprint plan. Sustainability efforts encompass environmental sustainability, product innovation, human capital management, patient access and affordability, business ethics, product quality and safety, as well as patient health and engagement. This comprehensive disclosure of information establishes a solid foundation for the company's ESG sustainability governance.

Additionally, our sustainability actions and reports have received numerous accolades, garnering recognition from external institutions. Awards include the "2023 Asia-Pacific Enterprise Awards – Corporate Excellence Award," the "2023 APSAA Asia-Pacific Sustainability Action Awards - Silver Award" and "TSAA Taiwan Sustainability Action Awards - Bronze Award," the 16th Taiwan TCSA "Sustainability Reporting: Healthcare Industry" - Platinum Award" and the 6th Global Corporate Sustainability Award, GCSA: Bronze Award, and the 25th "Technology Management Award" for the "Enterprise Team Award." In February 2024, we were further distinguished by inclusion in the S&P Global 2024 Sustainability Yearbook, ranking in the 98th percentile (top 2%) of ESG performance in the global biotechnology industry, positioning us as the first and only Taiwanese company to be selected, underscoring our exceptional ESG performance globally. Today, standing on the solid foundation of our company's gradually emerging positive impact and international recognition for our ESG performance in sustainable development, we will move forward with even greater confidence, courageously embarking once again on the next, more challenging journey towards authentic ESG.

Ching-Leou Teng

Ching-Leou Teng
PharmaEssentia Corporation Chairwomen

CEO's Statement

The year 2023 remained a year filled with challenges as the world faced frequent occurrences of extreme weather events and geopolitical turmoil. These challenges have inflicted significant impacts on the economy and society, necessitating humanity to adapt to ever-changing crises. However, amidst these challenges, we witnessed PharmaEssentia's resilience, as it continued to grow under the evolving international landscape.

Our new-generation long-acting interferon, Ropeg, marketed as BESREMi®, obtained regulatory approvals for the treatment of Polycythemia Vera (PV) in numerous countries, with Japan granting PV drug certification in March 2023, bringing the total to over 40 countries. BESREMi continues to accumulate clinical data, strengthening its global leadership position. Particularly noteworthy, BESREMi® was elevated by NCCN Treatment Guidelines to the preferred medication for PV patients in the United States, helping early disease intervention for more patients. Furthermore, BESREMi® expanded its market presence in Latin America and still actively pursued market approvals in Singapore, China, Hong Kong and other places, demonstrating significant enhancement in its global footprint. In addition to PV indications, the company made breakthroughs in hematologic malignancies, successfully completing a global multicenter Phase III clinical trial for Ropeg in Essential Thrombocythemia (ET), heralding a new milestone in BESREMi's clinical development in other MPN indications.

Meanwhile, we commenced investments in the PharmaEssentia Innovation Research Center Corporation, PIRC, in the United States, along with the establishment of a new facility within the Hsinchu Biomedical Science Park, Taiwan. Additionally, we expanded the warehouse logistics business of our subsidiary, Panco Healthcare, further strengthening our regional capabilities. As PharmaEssentia's global footprint continues to expand, the company is actively allocating more resources to corporate sustainability efforts. Externally, we participated in the Bloomberg Gender Equality Index (GEI) survey for the first time and continued to sponsor three social welfare projects, exerting societal influence in cultural activities, health promotion, and biodiversity. Internally, our Taichung plant successfully implemented the ISO 14064-1 greenhouse gas (GHG) inventory management system with plans to introduce ISO 14001 environmental management and ISO 45001 occupational health and safety management systems in 2024. Furthermore, in response to recent climate disasters, we initiated the adoption of the TCFD framework, continuously conducting financial assessments of climate-related risks and opportunities, formulating adaptation strategies, and aiming to build a robust climate change governance and strategy. We are committed to maintaining resilience in the face of evolving climate conditions, actively anticipating and mitigating future challenges, and fortifying the company's ability and resilience to address climate change issues.

In 2023, PharmaEssentia reached a pivotal moment in its growth trajectory, with notable advancements in product innovation and market expansion, alongside proactive efforts in sustainable development, setting a robust groundwork for future progress. Looking ahead, we will continue to expand our global presence, commit to serving more patients, and realize the company's vision and mission.

Ko-Chung Lin
PharmaEssentia Corporation CEO

3. About Pharmaessentia GRI 2-1

Company name	PharmaEssentia Corp.
Founded time	May 2000
Business focus	Research, development, production and sales of new biotechnology drugs
Company category change	Over-the-Counter in 2023, changed to listed since 2024/1/25
GICS 全球行業類別	GICS: Biotechnology
Amount of paid-up capital	NT$3.403 billion
2023 consolidated turnover	NT$5.106 billion
Employee number	559 employees worldwide, including 142 global R&D clinical personnel
Operational bases	• Taipei Head Office: No. 3, 13th Floor, Park Street, Nangang District, Taipei City • Taichung Factory: No. 6, 3rd Floor, Zhongke Road, Daya District, Taichung City • Panco Healthcare (100% wholly-owned subsidiary of PharmaEssentia, logistics center): No. 177-10, Zhongzhen Street, Luzhu District, Taoyuan City • Subsidiaries: PharmaEssentia USA , PharmaEssentia Innovation Research Center Corporation, PharmaEssentia Japan, PharmaEssentia Korea, PharmaEssentia Singapore, PHarmaEssentia Hong Kong, PharmaEssentia Beijing

Note: GICS® (Global Industry Classification Standard) is a global industry classification standard jointly developed by S&P Dow Jones Indices and MSCI in 1999. PharmaEssentia belongs to the biotechnology industry within the [Healthcare category: Pharmaceutical and biotechnology industry].

Mission Statement

PharmaEssentia is a biotechnology company dedicated to the research and development of new drug. While conducting our business operations, we actively embrace corporate social responsibility, striving to create long-term shared value. We proactively respond to the expectations of stakeholders, oversee corporate governance through our board of directors, and vigorously promote ESG sustainability management. In parallel with our commitment to drug development, we endeavor to foster balanced development in the economy, environmental ecology, and human rights. Our mission is to realize "Better science, Better lives." Focused on our core business of researching and developing innovative drugs, we drive global patient access strategies, promote patient health and well-being, and aim to become an innovation-oriented biopharmaceutical company that patients trust and respect.

Primary Products and Services GRI 2-6

Primary Products

PharmaEssentia has been dedicated to research in the field of blood diseases for many years. Our independently developed BESREMi® (Ropeginterferon alfa-2b, also known as Ropeg or P1101) utilizing a unique PEGylation platform, is the first interferon approved by the FDA for the treatment of Polycythemia Vera (PV). It has obtained marketing authorization in over 40 countries worldwide. In the future, we will continue to develop more indications and explore different disease fields, helping more patients obtain better drugs and improve their quality of life.

Direction of development

In the future, PharmaEssentia will continue to explore additional indications and different disease areas to improve patient access to better medications and quality of life.

Development Model

Access to Medicine

Aligned with the Access to Medicine Index, PharmaEssentia places significant emphasis on the accessibility, affordability, and availability of medications.

Business Development

Achieve global expansion and provide patients with better access to medication and better quality of life through two main business models: establishing multinational subsidiaries and entering into licensing and partnership alliances.

Value Chain and other Business Relationships GRI 2-6

PharmaEssentia's global presence has facilitated the market launch of BESREMi® in over 40 countries. Along the value chain, our partners encompass government regulatory authorities responsible for policy formulation, the upstream suppliers who provide raw materials, equipment and services, the cooperative manufacturers in the process of PharmaEssentia business activities, and the transportation and distribution partners after the completion of drug production, as well as medical professionals, medical institutions and patients.

Policymakers and regulators	Upstream	Business Partners and Suppliers of PharmaEssentia (Activities include new drug development, clinical trials, manufacturing, regulatory submissions, pharmaceutical marketing, and patient safety surveillance)	Downstream	Other Business Partners
• Domestic and international regulatory authorities • Industry associations	• Raw material suppliers • Equipment and service providers • Contractors/Subcontractors	• Academic research institutions • Domestic and international licensed partners (collaborative research, and development production, regulatory filing, and marketing) • Clinical trial organizations • Hospitals/Healthcare institutions • Outsourced agencies/External consultants	• Healthcare institutions/Hospitals/Pharmacies (healthcare professionals) • Entities overseeing the disposal of medication-related waste	• Domestic and international patient associations • Domestic and international disease research foundations • Institutions responsible for development of treatment guideline
For instance, TFDA, FDA, biotechnology trade associations, etc	For instance, raw materials suppliers	For instance, Academia Sinica, domestic and international universities, domestic and international biotech companies, clinical trial institutions, hospitals, inspection consultants, and transportation companies.	For instance, major medical centers specializing in treating MPN domestically and internationally.	For instance, the Taiwan Myeloproliferative Neoplasm (MPN) Association.

4. Organization's Operational Perforamce

In 2023, PharmaEssentia achieved a revenue milestone, surpassing NTD5.1 billion, with growth of 77% compared to 2022. In addition to maintaining stable sales in the U.S. and Europe market, PharmaEssentia also successfully launched in Japan in 2023, steadily reinforcing its leading position in the MPN (Myeloproliferative Neoplasms) treatment field.

77%

Revenue growth in 2023

Consolidated Group Operating Performance Over Last 3 Fiscal Years

(Unit: NT$ '000)

		2021	2022	2023
Direct Economic Value (A)	Revenue	656,506	2,882,042	5,105,615
Distribution of Economic Value (B)	Operating Costs	378,856	812,288	610,544
	Employee Salaries and Benefits	1,489,430	1,600,415	2,639,160
	Government Tax Payments (Income Tax)	(2)	5,675	76,872
	Payments to Capital Providers (Interest)	2,411	10,261	34,555
	Community Investments (Charitable Contributions)	1,003	1,310	1,565
	Total	1,871,698	2,429,949	3,362,696
Retained Economic Value (A-B)		-1,215,192	452,093	1,742,919

Note 1: The figures presented in this table reflect the annual consolidated financial statements.

Note 2: No political donations, either direct or indirect, were made to any country or individual during the year 2023.

Note 3: For further details on the performance of the Board and operational achievements, please refer to the PharmaEssentia Annual Report.

Note 4: During the year 2023, governmental grants totaling NT$5,435K were received for scientific and technological projects.

5. Recognition and Honors

Awards and Recognitions

✓ PharmaEssentia's sustainability report has consecutively won the Platinum Award in the Healthcare Industry category at the 16th Taiwan Corporate Sustainability Awards (TCSA) and the Bronze Award at the 6th Global Corporate Sustainability Awards (GCSA).

✓ Received the "2023 Asia-Pacific Enterprise Awards" in the " Corporate Excellence Award" category.

✓ Awarded the Silver Award in the "2023 APSAA Asia-Pacific Sustainability Action Awards" and the Bronze Award in the "2023 TSAA Taiwan Sustainability Action Awards."

✓ Received the "Enterprise Team Award" at the 25th Technology Management Awards.

MSCI

✓ Completed the MSCI ESG assessment, achieving an AVERAGE rating in the BB category.

✓ Included in the MSCI Taiwan Global Standard Index, Gretai 200 Index, and various FTSE Russell global stock index series.

S&P Global

✓ Ranked in the 98th percentile (Top 2%) of the S&P Global ESG Performance in the global Biotechnology industry and selected, as one of the ten biotech companies, for inclusion in the S&P Global Sustainability Yearbook

1 Sustainable Management And Development

1.1 Sustainable Development Blueprint

Alignment with United Nations Sustainable Development Goals (SDGs)

At PharmaEssentia, we center our sustainable development blueprint around advancing health and well being, in accordance with United Nations SDG 3. We meticulously consider the needs of stakeholders across the product lifecycle and value chain. Our environ mental (E) initiatives are aligned with SDG s 3, 12, and 13, focusing on minimizing environmental impact and promoting sustainable practices. On the social (S) front, our efforts resonate with SDGs 3 , 5, 8, 9, 16, and 17. We prioritize initiatives that sup port healthcare accessibility, gender equality, fair labor practices, innovation, and fostering strong partnerships. In terms of g overnance (G), we align with SDGs 3, 16, and 17. We maintain robust governance practices to ensure transparency, accountabilit y, and ethical conduct in all our operations. Through collaboration with stakeholders, we aim to create enduring shared value, driving positive soci etal impact and sustainable growth.

Sustainable Development Blueprint

Sustainability Leap Goals	2023~2024	• Continue completing annual third party verification of ISO 14064-1 • Continue promoting TCFD framework guidelines • Improve ranking in S&P CSA Global Biotechnology Industry to 98th percentile • Continue disclosing ESG information for other overseas subsidiaries	• Participate in Bloomberg Gender Equality Index (Bloomberg GEI) for the first time • Selected for inclusion in S&P Global 2024 Sustainability Yearbook • Participate in domestic and international sustainability award competitions to gain international recognition
Communicating Achievements	2022~2023	• Implemented GRI 2021 edition • Experimented with disclosure of subsidiaries in the United States and Japan • Won Platinum Prize in the 16th TCSA Report and Bronze Prize in the 6th Global GCSA in 2023 • Received APSAA Asia-Pacific Sustainability Action Silver Award and TSAA Bronze Award in 2023	• Improved ranking in S&P CSA Global Biotechnology Industry to 97th percentile • Continuously implementing TCFD framework and disclosing climate-related information • Completed third party verification of ISO 14064 1 for Taichung Plant from 2020 to 2022
Performance Showcase	2021~2022	• Re-identified major themes within the group • Strengthened SASB disclosure, piloted TCFD framework • Completed ISO 14064 1 organizational greenhouse gas (GHG) inventory and verification for Taichung Plant in 2019	• Optimized S&P Corporate Sustainability Assessment (CSA) report outcomes • Awarded Platinum Prize in the 15th Taiwan Corporate Sustainability Awards (TCSA) for Sustainability Report and Bronze Prize in the 5th Global Corporate Sustainability Awards (GCSA)
Implementation & Refining	2020~2021	• Sustain the governance assessment rating within the top 6 20% • Introduce ESG non financial risk management mechanisms • Optimize sustainability website/pages Awards (TCSA) for Sustainability Report	• Attain third party assurance for sustainability reporting • Awarded Gold Prize in the 14th Taiwan Corporate Sustainability
Strategic Sustainability Planning	2019~2020	• Complete Integration of Corporate Sustainability DNA, Ensuring Comprehensive Management of Sustainable Assets • Establishment of a Dedicated Sustainable Development Center	• Release of the Company's Inaugural Corporate Sustainability Report, Available in Both Chinese and English

2024-2026 Sustainable Development Priorities
Looking Ahead, PharmaEssentia will continue to invest in creating value through ESG initiatives:

E Environmental Sustainability

- Commit to achieving net-zero emissions by 2050 and set appropriate carbon reduction targets to meet the National Development Council's (NDC) (All Industries) -24% target by 2030.
- Continuously promote the implementation and enforcement of ISO 14001 Environmental Management System to reduce environmental impact during the product manufacturing process.
- Integrate TCFD climate risk financial assessment into operational risk management and respond to enhance corporate resilience.

S Social Inclusion

- Continue investment in new drug and new indication research and development to address unmet medical needs and serve more patients.
- Follow the Access to Medicine Index guidelines to formulate group strategic policies, collaborating with subsidiaries and partners to promote actions related to access to medicine.
- Continue participation in the Bloomberg Gender Equality Index (Bloomberg GEI) to promote workplace diversity and gender equality.
- Promote diverse employee welfare policies, optimize a happy workplace, and continue to care for vulnerable employees.
- Develop long-term plans for women's welfare to increase the proportion of female executives.
- Expand philanthropic investment to respond to health, cultural, and biodiversity-related public welfare activities.

G Corporate Governance

- Adhere to integrity in business operations, continuously improve risk assessment and process management mechanisms.
- Enhance patent layout strategies to accelerate global market coverage.
- Participate in international ESG assessments by responding to global pharmaceutical sector initiatives to enhance PharmaEssentia's global brand awareness and value.

1.2 Sustainable Governance Organizational Structure

The Role of the Board of Directors in Sustainable Management

The Board of Directors serves as the highest governance body of PharmaEssentia, responsible for formulating and overseeing operational decisions. In response to the company's development needs, the Sustainable Development Center was established in 2019, reporting directly to the CEO. The Sustainable Development Center comprises five functional teams tasked with driving various sustainability projects. Quarterly reports on the progress of ESG projects are submitted to the Board of Directors by the Sus tain able Development Center, ensuring performance achievements. This includes reporting on significant sustainability themes and stakeholder engagement outcomes . The main responsibilities of the Sustainable Development Center and its five functional teams include:

Board of Directors

PharmaEssentia Sustainable Development Center

Responsible for planning and promoting the headquarter and departmental and unit sustainable development policies, goals, strategies, and implementation plans

Environmentally Friendly Team

Identifying and managing the environmental impacts of product lifecycle stages, including energy use,water resource use, greenhouse gas emissions, medical waste management, chemical management, etc.

Relevant major themes:

- Environmental impacts and management of production processes.

Employee Wellbeing Team

Managing human resource issues throughout various stages of the lifecycle, including recruitment, hiring, salary negotiations, rewards, training, performance evaluations, employee assistance, workplace health and safety, resignations, and retirements.

Relevant major themes:

- Talent cultivation and career development
- Talent attraction and retention.

Product Ethics and Safety Team

Managing product lifecycle stages from research and development, clinical trials, manufacturing, to sales, addressing issues related to safety, efficacy, ethics, etc.

Relevant major themes:

- Drug quality and product safety
- New drug research and innovation

Access to Health Care Team

Ensuring access to medicine for patients, including policy participation, innovative technologies, capacity building, etc., to assist patients in obtaining needed medications and formulating related action plans to enhance social impact in the healthcare f ield.

Relevant major themes:

- Access to health care; Patient Engagement and Community Empowerment

Corporate Governance Team

Facilitating the effective management functions of the Board of Directors, including:

- Ensuring compliance and integrity in operations
- Monitoring operational risks
- Enhancing transparency and timeliness of public information
- Maintaining sound financial performance
- Protecting patient privacy and data security
- Establishing comprehensive management and utilization of intellectual property rights

Relevant major themes include:

- Business Ethics and Integrity

PharmaEssentia's Sustainable Progress GRI2 GRI2-17

1. Enhancement of Sustainability Knowledge: Continuous Improvement of Sustainability Awareness for All Employees

Under the authorization of the Board of Directors, the Sustainable Development Center continues to promote company wide sustainability education and training. In addition to the Taiwan headquarter, subsidiaries in the United States and Japan al so conduct education and training in line with the company's development goals. In Taiwan in 2023:

A total of **12** large-scale sustainability knowledge education and training sessions were held.

A total participation of **498** participants

A total training duration of **2,528** hours.

Month	Sustainability Training Themes	Sessions	Number of Participants	Total Training Hours
March	Emergency Response Team Training Seminar at Taipei Office	1	45	293
June	Emergency Evacuation and First Aid Training in Taipei	3	125	845
July	Company-wide Emergency Response and Evacuation Drill & First Aid Skills Training (Practical Session) for Taiwan Region	3	130	845
August	Annual Expansion of Greenhouse Gas (GHG) Testing Scope in Taichung Plant	1	27	203
September	Assessment of Sustainability Performance and Recommendations for Improvement for the 2022~2023	1	92	184
October	Launch of Domestic and International 2023~2024 Sustainability Advancement Year Kick-Off Meeting (Including US and Japan Subsidiaries)	3	79	158
	Total	**12**	**498**	**2,528**

2. Sustainable Asset Development

Sustainable Mindset and Legacy:

Conducted a total of 29 sessions encompassing online and offline compliance courses, cybersecurity training, environmental sustainability courses, occupational health and safety seminars, and other sustainability-related educational programs integrated into employees' daily routines. This initiative reached a total of 1,497 participants, accumulating 3,691 training hours.

A total of **29** sessions encompassing online and offline compliance courses

A total of **1,497** people participated

Accumulating **3,691** training hours

Annual performance evaluations now include key indicators linking ESG achievements and adherence to employee codes of conduct KPIs.

Stakeholder Engagement and Materiality Assessment:

According to AA1000 SES Stakeholder Engagement Standards, identified 10 primary stakeholder groups, including:

patients | employees | shareholders and investors | healthcare professionals | external research/ experimental units

suppliers and business partners | government and regulatory agencies | media | local communities | NPOs/ NGOs

Adopted a Double Materiality

Approach to evaluate PharmaEssentia's impact on the economy, environment, and human/human rights, as well as the influence of sustainability issues on PharmaEssentia's operational and financial aspects, ensuring the identificat ion of major themes.

Conducted a comprehensive analysis of **39** issues, both with positive and negative impacts

and selected **8** major themes for management

3. Sustainability Reporting and Performance Display

Disclosure of Sustainability Information:

- Obtained third-party verification statement from AFNOR Asia Ltd and published bilingual sustainability reports in both Chinese and English.
- Proactively addressed stakeholder inquiries and updated ESG website with the latest news and disclosure content on a monthly basis.

Adoption and Participation in International Standard Assessments:

- Completed MSCI ESG assessment, receiving an "AVERAGE" rating within the BB range in 2023.
- Completed S&P Global Corporate Sustainability Assessment (CSA), ranking in the 98th percentile among global biotech companies, and included in the S&P Global 2024 Sustainability Yearbook.
- Received the "Silver Award for Asia-Pacific Sustainability Action Awards" and the "Bronze Award for Taiwan Sustainability Action Awards" from APSAA and TSAA respectively in 2023.
- Achieved Platinum Award in the "Healthcare Industry" category at the 16th Taiwan Corporate Sustainability Awards (TCSA) and Bronze Award at the 6th Global Corporate Sustainability Awards (GCSA).
- Received the "2023 Asia Pacific Outstanding Enterprise Award" for "Excellence in Corporate Management."
- Received the "Enterprise Team Award" at the 25th Technology Management Awards.
- Participated for the first time in the Bloomberg Gender Equality Index (GEI).

1.3 Management of Materiality Assessment

As PharmaEssentia expands its global presence with the goal of becoming an international pharmaceutical company, we value the requirements of regulatory authorities in various countries and, through the governance and oversight of the board of directo rs, v igorously promote the management of ESG sustainability issues. While developing new drugs, PharmaEssentia also focuses on promoting a balance between economic development, environmental ecology, and human rights to drive corporate sustainability. Through a materiality analysis, we understand the most significant sustainability issues perceived by internal and external stakeholders. With the motto "Better Science, Better Lives," we strive to meet stakeholder expectations. PharmaEssentia actively implements a global patient access strategy to address unmet needs, expanding the patient coverage of our products in global markets and promoting patient health and well-being.

PharmaEssentia references the Global Sustainability Standards Board (GSSB) GRI Universal Standards 2021 edition and the concept of do uble materiality proposed by the European Union to conduct materiality analysis and confirmation of Materiality Assessment.

1. Determining Materiality Significance at PharmaEssentia

According to the GRI 3 Materiality Assessment Guidelines,

"Materiality Assessment" are the impacts (effects) on economic, environmental, and human (including human rights) aspects resulting from an organization's operational activities. These impacts may be actual or potential, negative or ositive, short-term or long-term, anticipated or nanticipated, reversible or irreversible, and favorable or unfavorable. For example:

- **The impact of operational activities on the economy** may include:
  the generation of economic taxes in the locality/ market, procurement behavior, etc.
- **The impact of operational activities on the environment** may include:
  the influence on environmental protection or biodiversity conservation, including the effects of air emissions, water resource utilization, or other natural resource consumption on the environment.
- **The impact of operational activities on human/human rights** may include:
  involvement in community activities or social participation, or the impact on human/ human rights through employment relationships, supply chain cooperation, or drug safety and access to medicines.

Double Materiality

The concept of Double Materiality originated from the European Commission's Guidelines on Non-financial Reporting: Supplement on Reporting Climate-related Information, issued in June 2019. It encourages companies to assess "materiality" from two perspectives and emphasizes the importance of considering the interconnection between the two. PharmaEssentia thus evaluates materiality based on two dimensions:

1) **Impact on Sustainability:**
   The extent to which the company's operations affect the economy, environment, and human/ human rights.
2) **Impact on Organizational Operations:**
   The influence of sustainability issues on corporate development and company value.

Criteria for Determining Materiality Assessment

PharmaEssentia considers the following perspectives to confirm whether a given issue qualifies as a Materiality Assessment:

1) Through the lens of stakeholders, assessing their high level of concern regarding the sustainability related issue.
2) Impact on Sustainable Development: The effects of the company's operational activities on economic, environmental, and human/ human rights aspects.
3) Impact on Organizational Operations: The influence of sustainability issues on corporate development and company value.
4) The presence of measurable indicators and goals for the issue; responsibility for execution is assigned to relevant units , with regular reviews of goal achievement conducted annually.

2. Process to determine Materiality Assessment GRI 2-16/GRI 3-1

PharmaEssentia adheres to the Materiality Assessment Identification Process as outlined in GRI 3, which includes the following steps:

Step 1 **Understanding Organizational Context**

Identifying Stakeholders

PharmaEssentia's operations in Taiwan span various stages, from research and development to clinical trials, manufacturing, warehousing logistics, regulatory approval processes, pharmaceutical marketing, and patient services. Each stage may have different categories of positive and negative, actual and potential impacts on the environment, economy, and human/ human rights. Following the AA1000 SES Stakehold er Engagement Standards and feedback from departmental interviews, we have analyzed the stakeholders identified in 2022 and summarized the stakeholders highly relevant to our company's operations as shown in the table below:

	Stakeholder Groups	Significance to PharmaEssentia	Operational Activities						
			New Drug R&D	Clinical Trials	Manufacturing	License application	Promotion	Patient use	Drugs discarded
1	Patients / Patient Advocacy Groups	Direct Beneficiaries of Medicinal Effects						●	
2	Employees and Non-Employee Site Personnel at PharmaEssentia	Managers and Executives Responsible for Operational Activities at PharmaEssentia	●	●	●	●	●	○	○
3	Healthcare Professionals (HCPs)	Clinical Trial Primary Investigators; Frontline Caregivers for Patient Medication	○	●				●	
	Clinical Trial Hospitals	Providing Data for Evidence in Clinical Trials	○	●				●	
4	Outsourced Research / Laboratory Units	Industry-Academia Collaboration; Joint Development of New Drugs	●	●					
5	Suppliers and Business Partners	Providing Raw Materials / Equipment / Services and Contracting Projects	●	●	●				●
	Domestic and International Biotechnology Companies	Licensing Partners; Collaborative Marketing and Promotion				●	●		
6	Shareholders / Investors of PharmaEssentia	Providing Funding, also Stakeholders of PharmaEssentia	○	○	○	○	○	○	○
7	Local Communities	Residents and the community near PharmaEssentia's facilities face direct environmental and human/ human rights impacts.			●				●
8	Government and Regulatory Agencies	They decide the standards, including environmental/social indicators, for pharmaceutical quality, production, and marketing, as well as drug indications and pricing.	○	●	●	●	●	●	●
9	Media	They investigate and promote the performance of PharmaEssentia.					○	○	
10	Associations / Foundations / NPO/NGO	They jointly promote various initiatives and disease health education activities.					●	●	

● Direct impact ○ Indirect impact

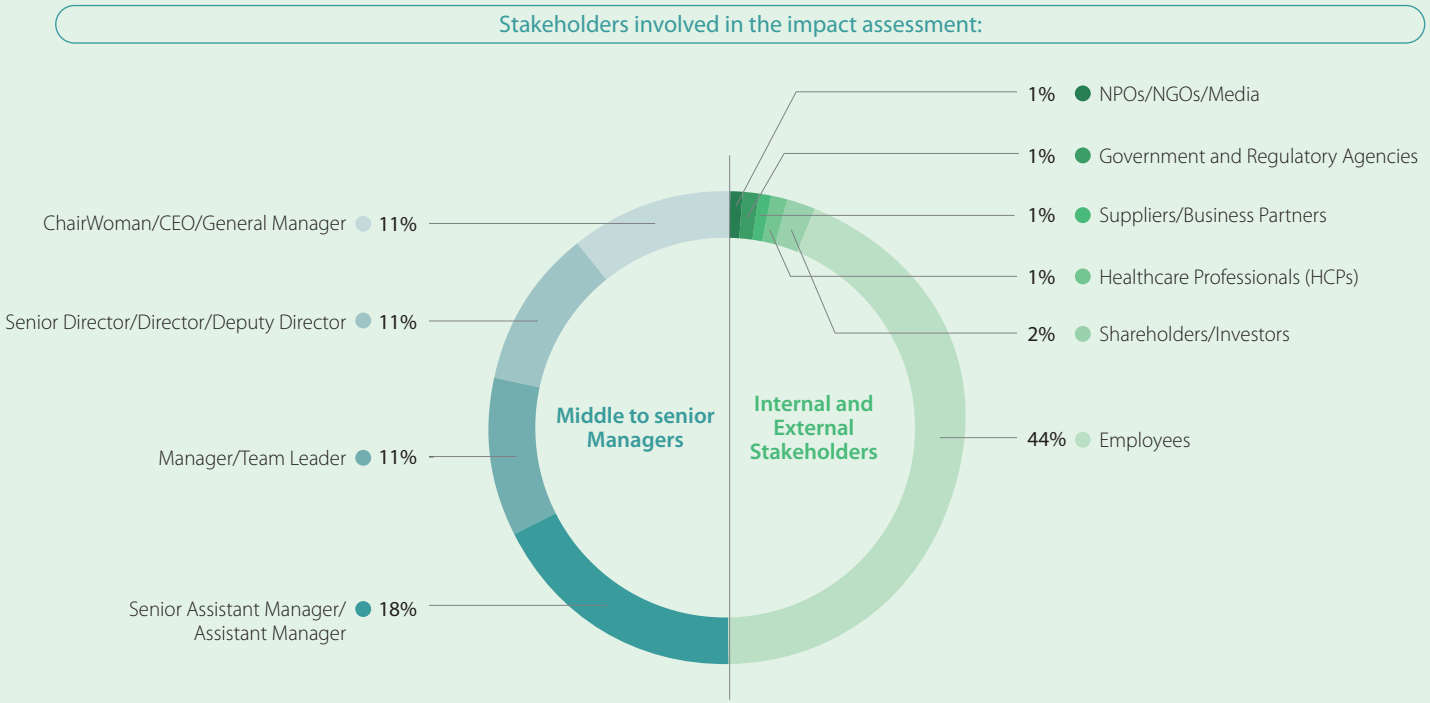
Determining the List of ESG Matters

PharmaEssentia has established its Materiality Assessment list based on concern to stakeholders at all stages of its business activities We reference guidelines such as the 2018 COSO Enterprise Risk Management (ERM) Framework, international sustainability standa rds like the GRI 2021 Standards, UN Global Compact, RBA, SDGs, SASB, and TCFD, as well as sustainability trends identified by lea d ing international rating agencies such as DJSI, MSCI, and Sustainalytics. These frameworks help define the Materiality Assessment . In alignment with PharmaEssentia's strategic direction. The sustainability issues, totaling 39 are categorized into six main areas: (1) Corporate Operations and Governance, (2) Human Resources Management and Development, (3) Product Quality and Safety, (4) Medical Accessibility and Contribution, 5) Climate and Environmental Protection, and (6) Emerging Trend Risks.

Step 2

Identification of Actual and Potential Impacts

During this stage, stakeholder surveys are conducted, and assessments of the impact of various ESG Matters are evaluated by senior management and employees. Participating assessors include 14 middle to senior executives of PharmaEssentia and a total of 316 internal and external stakeholders.

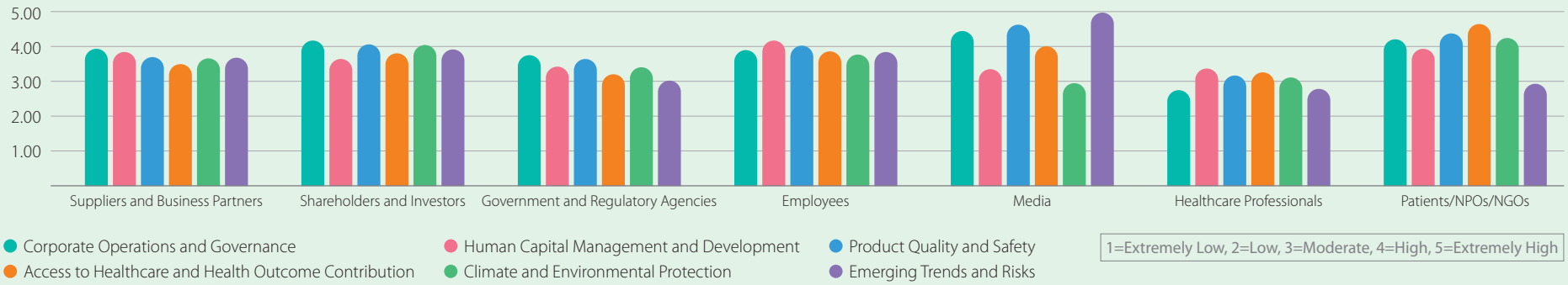


Conducting stakeholder surveys and assessing the impact of various ESG matters among executives and colleagues, this process is divided into three dimensions:

- **Understanding Stakeholder Concerns on Materiality Assessment**

  In addition to Taiwan, we conducted stakeholder opinion surveys, including those from our subsidiaries in the United States and Japan, in 2023. A total of 316 stakeholder questionnaires were collected and analyzed. Different categories of stakehold ers show distinct preferences for certain ESG matters . For instance, shareholders tend to focus on ESG matters related to corporate operations and governance, while employees are more concerned about ESG matters related to human resources management and development.

Materiality Assessment of Stakeholder Concerns Across Different Categories



- **Identifying the Actual and Potential Impact of PharmaEssentia's Operations on the Economy, Environment, and Human/Human Rights:**

  Through surveys and interviews, we interviewed 14 management level supervisors. Based on the company's actual performance in various areas in 2023, we evaluated PharmaEssentia's impact on the "economy, environment, and human rig hts" across different ESG mattters . Each ESG matter may generate both positive and negative impacts

- **Assessing the Impact of Various Issues on PharmaEssentia's Operational Performance:**

  At the same time, the supervisors are also requested to evaluate ESG Matters per actual performance in 2023, and conduct a questionnaire survey on the increase or decrease of tangible and intangible assets that will be brought to PharmaEssentia according to the scale of the impact and the probability of the possible occurrence:

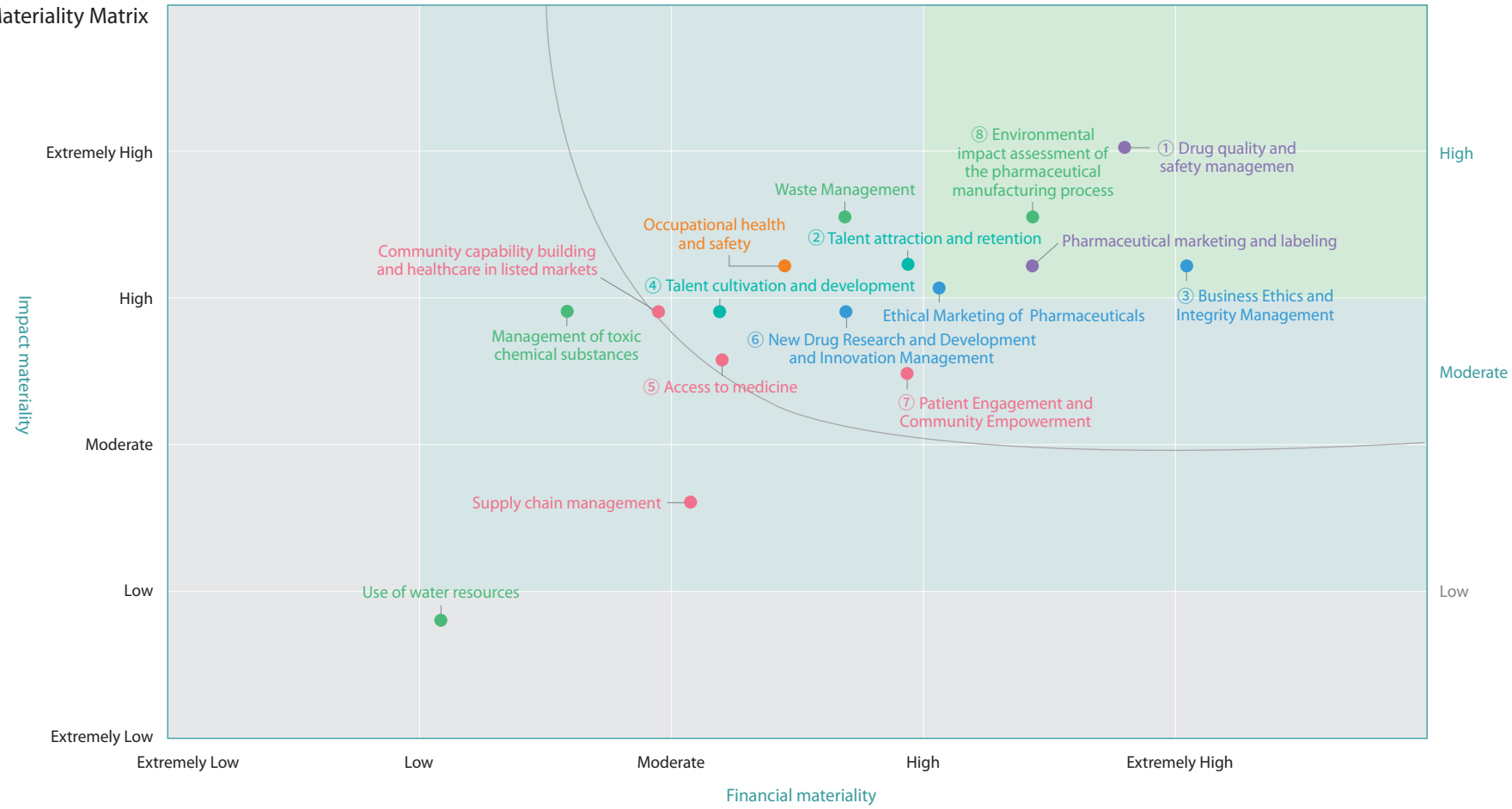
  ▶ **Positive operational impact: Increase in tangible assets/income and enhancement of intangible assets/brand reputation.**

  ▶ **Negative operational impact: Increase in operational costs and impairment of intangible assets/brand reputation.**

Step 3

Assessing Our Impact Significance

- Double Materiality Matrix



List of Materiality Assessments

1. Drug quality and safety managemen
2. Talent attraction and retention
3. Business Ethics and Integrity Management
4. Talent cultivation and development
5. Access to medicine
6. New Drug Research and Development and Innovation Management
7. Patient Engagement and Community Empowerment
8. Environmental impact assessment of the pharmaceutical manufacturing process

Step 4 Establishing Reporting Priority for Significant Impacts

- Confirmation of Material ity Assessment

  Apply the dual materiality principle and incorporate stakeholder feedback to consolidate and manage pertinent issues. Collaborate with the Sustainability Development Center and management to identify eight key material themes.

- Assessment of Management Mechanisms (PDCA) and Disclosure:

  Define management indicators and policy objectives for each materiality assessment. Conduct annual reviews of indicator/objective achievement rates, ensuring accountability and progress tracking across various sustainability performance indicators.

List of Materiality Assessments GRI 3-2

2023 Materiality Assessments	Related ESG Matters	KPIs and Targets	Responsible ESG Team	2023 Results	2024 Targets
1. Drug Safety and Quality Management	Drug Safety and Quality Management	• Ensure that the adverse drug reaction reporting process is 100% compliant with internal SOP.	Sustainability Development Center-Product Ethics and Safety Team	• 100% compliant	• 100% compliant
		• 100% annual training rate (employees).		• 100% compliant	• 100% compliant
	Drug Marketing and Labeling	• Zero cases of non-compliance		• 0 cases of non-compliance	• 0 cases of non-compliance
2. Talent Attraction and Retention *New Materiality ssessment	Talent Attraction and Retention	• Employee turnover rate	Sustainability Development Center-Employee Care Team	• 10%	• Under10%
	Employee Well being and Supportive Workplace Environment	• Zero cases of non-compliance		• 0 cases of non-compliance	• 0 cases of non-compliance
	Occupational Health and Safety	• 100% annual coverage rate (employees).		• 100% compliant	• 100% compliant
	Compensation and Benefits	• Maintain performance above industry		• Continue to maintain performance	• Continue to maintain performance
3. Business Ethics and Integrity Management	Ethics in Drug Marketing	• Zero cases of non-compliance • 100% 100% annual training rate	Sustainability Development Center-Corporate Governance Team	• 0 cases of non compliance • 91.5%	• 0 cases of non compliance • 100% compliant
	Business Ethics and Integrity in Operations	• Zero cases of non-compliance • Zero complaints		• 0 cases of non compliance • 0 complaints	• 0 cases of non compliance • 0 complaints
	International Arbitration/Legal Litigation	• Zero cases of non-compliance		• 1 Case (Pending AOP International Arbitration)	• 0 cases of non-compliance
4. Talent Cultivation and Development *New Materiality ssessment	Talent Cultivation and Development	• Education and training hours	Sustainability Development Center-Employee Care Team	• 9,426 hours	• Higher than 2023
	Succession Planning	• Supervisor retention rate > 80%. • Development programs for key talent		• >86% • Commenced in 2024	• Supervisor retention rate>80% • Continue to implement the key talent development plan
5. Access to Medicine	Patient Engagement and Assistance	• Number of patients	Sustainability Development Center-Access to Health Care Team	• >6200 patients	• Exceeds performance in 2023
	Medication Usage	• Number of drug permit approved		• >40 countries	• Exceeds performance in 2023
6. New Drug Research and Development and Innovation Management	Innovation and Business Models Management	• Research and development expenses account for >25% of revenue	Sustainability Development Center-Access to Health Care Team	• 43.56%	• Research and Development expenditure to account for over 25% of revenue
7. Patient Engagement and Community Empowerment	Medical Care in Global Markets and Community Empowerment	• Host over 10 health education events	Sustainability Development Center-Access to Health Care Team	• Total of 17 events • Total participants > 700	• >10 events
8. Environmental Impact Assessment during drug Manufacturing Processes *New Materiality ssessment	Waste Management	• Zero cases of non-compliance	Sustainability Development Center-Environmental Friendly Team	• 0 cases of non-compliance	• 0 cases of non-compliance
	Pollution Reduction Assessment	• Zero cases of non-compliance		• 0 cases of non-compliance	• 0 cases of non-compliance

Comparison of Materiality Assessment between 2022 and 2023:

In contrast to 2022, our 2023 report introduces three new materiality assessment : Talent Attraction and Retention, Human Capital Development , and Environmental Impact Assessment during drug Manufacturing Processes . These additions reflect our commitment to align with PharmaEssentia's global market expansion strategy while addressing the heightened potential impact of environmental sustainability due to increased production volumes and facility expansions. Our ongoing initiatives from 2022 continue to progress, with a renewed focus on assessing the achievement of management indicators for 2023 and setting goals for 2024.

Impact Management Mechanisms and the Role of the Board of Directors in Materiality Assessment GRI 2-12, 2-13

In managing the impacts of materiality assessment, the Board of Directors serves as the highest governing body, responsible for oversight and decision making. the Sustainability Development Center and five functional teams proactively addresses potential or actual risks through prevention and improvement measures. Progress is quarter ly reported to the Board by the Sustainability Development Center. When necessary, improvement plans are devised to uphold sustainability principles and goals.

Communication of Key Significant Events

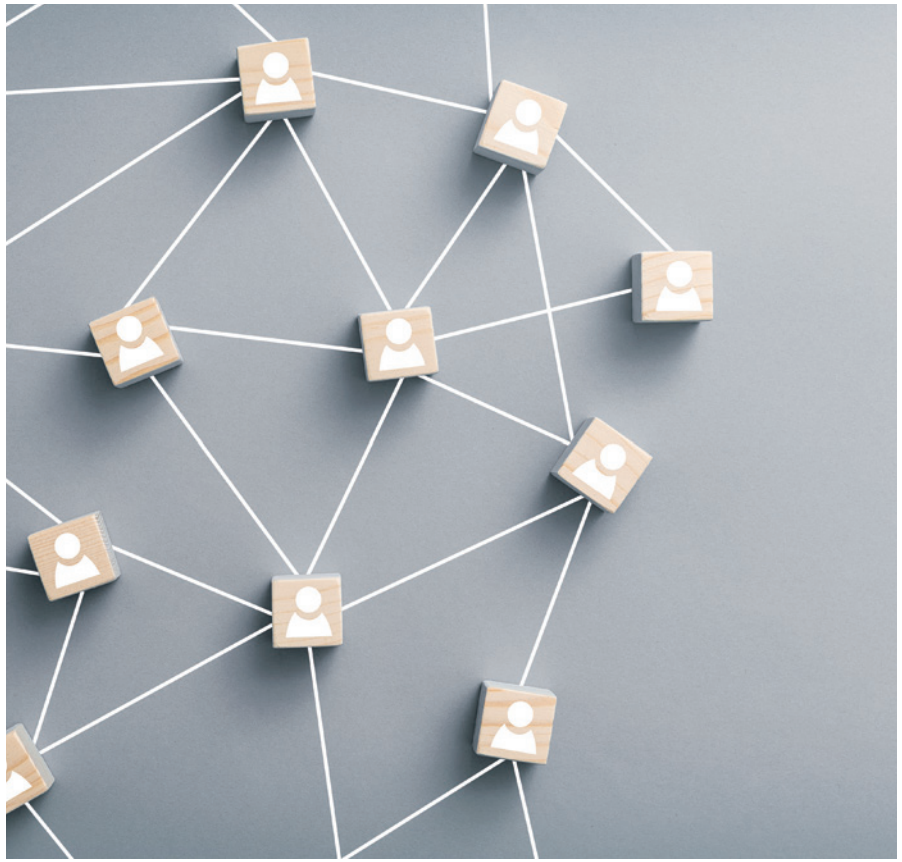
GRI 2-16

PharmaEssentia adheres to departmental risk management protocols to establish thresholds for key material events, encompassing factors like financial losses and personnel injuries. No such events were reported in 2023.

1.4 Stakeholder Engagement

GRI 2-16, 2-29

Throughout 2023, we engaged with stakeholders through diverse communication channels, ensuring transparency and responsiveness to their concerns. Below, we outline the channels utilized, the frequency of engagement, and the outcomes achieved:



Type	Patients
Materiality Assessment Concerned	• Drug Safety and Quality Management • Access to Health care • Patient-Physician Engagement and Patient Assistance • Innovation & Business Models • Data Privacy and Security
2023 Communication Channels & Frequency	• Company Website: Always available • Telephone or Email: Always available • In-person Meetings or Video Conferences: As Necessary • Seminars: intermittently
Communication Focus and Outcomes in 2023	• Utilized public data, engaged healthcare professionals, and collaborated with patient advocacy groups to ensure access to health care. • BESREMi® was elevated to a preferred treatment option for PV2A patients the US NCCN Treatment Guidelines. • Various diseases, including PV and PMF, were officially recognized in China's rare disease catalog. • Successfully advocated for Ropeg's inclusion in the reimbursement system of Kaiser Permanente, the largest hospital chain in the US. • Maintained compliance with regulatory reporting requirements post market launch by submitting periodic safety reports (PSUR/PBRER) for Ropeg, with no reported violations of health and safety regulations from February 2022 to February 2023. • Established the MPN iCare platform in collaboration with the Taiwan MPN Care Association, facilitating patient education and organizing educational events on World MPN Day as well as the first member conference. • Introduced the SOURCE support program and BESREMi.com platform in the US subsidiary, providing comprehensive patient support services in partnership with healthcare professionals. • Initiated patient support programs in the Japanese subsidiary. • Conducted clinical trials spanning Europe, the Americas, and Asia, benefiting patients across diverse regions with over 30 studies. • Provided compassionate use programs that benefitted over 43 individuals. • As of 2023, Ropeg has treated over 6,2 00 patients, contributing to improved healthcare outcomes and patient well being.

Type	Employees	Healthcare Professionals
Materiality Assessment Concerned	• Compensation and Benefits • Employee Well being and Supportive Workplace Environment • Drug Safety and Quality Management • Talent Attraction and Retention • Human right policy • Human Capital Development • International Arbitration/Legal Litigation • Occupational Health and Safety • Business Ethics and Integrity • Data Privacy and Security	• Data Privacy and Security • Patient Engagement and Assistance • Access to Health care • Drug Safety and Quality Management • Innovation and Business Models Management
2023 Communication Channels & Frequency	• Welfare Committee Meetings: Quarterly • Labor Management Meetings: Quarterly • Employee Performance Appraisals: Biannually • On site Medical Services: Monthly • Health Promotion Services: Annually • Telephone Communication or Interviews: As required • Internal Website: Anytime • Reporting and Complaint Channels on the Website: Anytime • Company Website: Anytime • Sustainability Reports in Chinese and English: Annually	• Correspondence: As Necessary • Workshops: intermittently • Telephone or electronic communication: On demand • Video conferences: As Necessary
Communication Focus and Outcomes in 2023	• PharmaEssentia's compensation structure integrates base salaries and performance based bonuses aligned with project milestones. • The Welfare Committee convened quarterly, fostering employee well being, while labor management meetings convened four times, facilitating constructive dialogue. • 3 times monthly on-site medical services provided essential care to employees, with the Taichung plant delivering health education sessions 39 times, benefiting 82 employees. • A comprehensive health screening program saw 157 new and regular Taichung plant employees participating, with an additional 57 undergoing specialized health assessments. • Biannual performance evaluations were conducted to ensure alignment with organizational goals and individual growth. • External experts were engaged to deliver online training sessions addressing insider trading prevention and regulatory compliance, reaching 186 participants for a cumulative 372 hours. • An "Overwork Survey" gauged employee workload perception, enabling tailored support interventions as required. • The crude birth rate of newborns in Taiwan headquarters is about 2.2%, which is about 3.8 times higher than the crude birth rate of 5.825.82‰ in Taiwan	• Ongoing engagement with Key Opinion Leaders (KOLs) in the MPN field across major listed countries, including Taiwan, the United States, and Japan. • Conducted 17 seminars and workshops by Panco Healthcare to enhance understanding of diseases and treatment options among healthcare professionals and patients, with a total participation exceeding 700 individuals. • Ropeg's Phase II clinical trial research data conducted in China was published in the internationally renowned oncology journal "Experimental Hematology & Oncology," highlighting the efficacy, safety, and tolerability of the rapid dose escalation regimen (250-350-500μg) for Ropeg.

Type	external research/experimental units	shareholders and investors
Materiality Assessment Concerned	• Drug Safety and Quality Management • Innovation and Business Models Management • Business Ethics and Integrity in Operations • Access to Health care • Management of Toxic Chemicals	• Innovation and Business Models Management • Business Ethics and Integrity in Operations • Talent Cultivation and Development • Fostering Sustainable Investment • Environmental Impact Assessment during drug Manufacturing Processes • Access to Health care
2023 Communication Channels & Frequency	• Correspondence: As Necessary • Workshops: intermittently • Telephone or electronic communication: On demand • Video conferences: As Necessary • Research and Development Outsourcing Contracts: As Necessary	• Annual General Meeting: Annually • Extraordinary General Meeting: Ad hoc • Board of Directors Meeting: Quarterly • Extraordinary Board of Directors Meeting: As necessary • Analyst Conference: As necessary • Press Conference: As required • Spokesperson: Any time • Company Website: Any time • Public Information Disclosure Platform: As necessary • Annual Sustainability Report (in both Chinese and English): Annually
Communication Focus and Outcomes in 2023	• Secured regulatory approvals for BESREMi® (PV) in Japan (PMDA), Malaysia (NPRA), United Arab Emirates, and the Kingdom of Bahrain. • Submitted applications for Ropeg's (PV) market authorization to China's NMPA, Singapore's HAS, and the Pharmaceutical Office of the Department of Health in Hong Kong. • Successfully completed enrollment for Ropeg's Phase III clinical trial for Essential Thrombocythemia (ET) across multiple countries and centers globally. • Positive outcomes from the Phase III clinical trial conducted by the Japanese subsidiary for Actinic Keratosis (AK), demonstrating statistically significant efficacy endpoints attainment.	• Dedicated investor relations section facilitates transparent communication and engagement with stakeholders, including legal shareholder meetings and financial disclosures. • Regular updates on monthly revenue and press releases are shared via the Public Information Observation Platform and the company website, ensuring transparency and accountability. • Timely updates on significant milestones in international arbitration and litigation disputes with AOP Corporation demonstrate commitment to legal compliance and risk management. • Successful completion of a $462 million USD overseas depositary receipt issuance demonstrates financial resilience and strategic capital management. • The Board of Directors maintains a high level of engagement, convening 13 times with a 100% attendance rate, reflecting strong corporate governance practices. • Conducted 8 investor presentations, both domestically and internationally, showcasing the company's commitment to transparent communication and engagement with investors. • Recognition in the S&P Global 2024 Sustainability Yearbook highlights the company's leadership in sustainability within the global biotech sector. • Rated "AVERAGE" in the BB category by MSCI ESG Ratings, reflecting the company's performance across environmental, social, and governance factors. • Participation in the Bloomberg Gender Equality Index survey underscores the company's commitment to diversity, equity, and inclusion initiatives. • Annual release of a bilingual Sustainability Report in June demonstrates the company's dedication to ESG principles and transparent reporting practices

Type	suppliers and business partners	local communities
Materiality Assessment Concerned	• Business Ethics and Integrity in Operations • Drug Safety and Quality Management • Innovation and usiness Models Management • Occupational Health and Safety • Data Privacy and Security • Human Rights Policy	• Business Ethics and Integrity in Operations • Environmental Impact Assessment during drug Manufacturing Processes • Access to Health care • Patient-Physician Engagement and Patient Assistance
2023 Communication Channels & Frequency	• Demand Forecast and Sales Meetings: Bi weekly • Site Visits: As needed • On-site Audits: Annually • Phone or Email Correspondence: Available at all times • Video Conferences: As required • Corporate Website: Always accessible	• Correspondence: As needed • Workshops, Seminars: intermittently • Phone Calls or Email: Any time • Video Conferences, Community Events, or Educational Collaborations: As required • Corporate Website: Always accessible • Public Information Disclosure Platform: As required
Communication Focus and Outcomes in 2023	• Expanded the supplier and partner network to support global expansion efforts, accelerating market penetration and partnership development for subsidiary companies. • Proactively communicated the latest ESG regulatory requirements to suppliers, revised supplier code of conduct, and assisted suppliers in achieving compliance. • Signed quality agreements with 100% of suppliers for five consecutive years. Completed internal assessments and on site audits at a rate of 100%. • Signed commercial licensing agreements with Q Company for Ropeginterferon alfa 2b (P1101) product in seven countries in Latin America. • Signed a global exclusive licensing agreement with WuXi Biologics Ireland Limited for a candidate antibody sequence targeting myeloid lineage immune checkpoint. • Initiated construction for a new facility at the Zhubei plant, with contractors engaged for construction activities. • Expanded the logistics operations at subsidiary company Panco Healthcare Logistics Center through facility expansion initiatives.	• Our manufacturing facility, located within the Taichung Industrial Park, adheres to strict environmental regulations to mitigate the impact of our production processes. No compliance incidents were reported in 2023, reflecting our commitment to environment al stewardship. • The Plant Manager of our Taichung facility was invited to speak at BIO Asia Taiwan 2023, an influential biotechnology conference, to exchange insights on biotech trends and foster collaboration within the industry. This engagement not only facilitated knowledge dissemination but also enhanced our company's reputation as a leader in the field. • The Director of our Sustainability Center was invited to participate in the DCB's "Green Manufacturing Technology and Carbon Reduction Practices Exchange Conference," where they shared our company's sustainability journey and practical experiences. This co llaboration aims to promote mutual learning and progress within the biotech industry, contributing to broader sustainability efforts. • The Plant Manager of our Taichung facility was invited to share insights on GMP process change management and best practices as part of the "Enhancing International Competitiveness of Innovative Pharmaceutical Industry" initiative. This initiative aims to drive continuous improvement in product quality and regulatory compliance across the pharmaceutical industry.

Type	Government and Regulatory Agencies	Media	NPOs / NGOs
Materiality Assessment Concerned	• Data Privacy and Security • Human Rights Policy • Business Ethics and Integrity in Operations • Drug Safety and Quality Management • Patient-Physician Engagement and Patgient Assistance • Environmental Impact Assessment during drug Manufacturing Processes	• Business Ethics and Integrity in Operations • Drug Safety and Quality Management • Patient-Physician Engagement and Patient Assistance • Environmental Impact Assessment during drug Manufacturing Processes	• Business Ethics and Integrity in Operations • Drug Safety and Quality Management • Access to Health care • Patient-Physician Engagement and Patient Assistance • Environmental Impact Assessment during drug Manufacturing Processes
2023 Communication Channels & Frequency	• Correspondence: As needed • Workshops: Occasional • Phone Calls or Email: Available at all times • Video Conferences, Community Events, or Educational Collaborations: As required • Corporate Website: Always accessible • Public Information Disclosure Platform: As needed • Sustainability Reports (in both Chinese and English): Annually	• Press Gatherings: Annually • Press Conferences: As required • Press Releases: Occasional • Interviews: As needed • Spokesperson: Available at all times • Corporate Website: Always accessible • Public Information Disclosure Platform: As needed • Sustainability Reports (in both Chinese and English): Annually	• Correspondence: As required • Seminars/Workshops: intermittently • Phone Calls or Emails: Available at any time • Video Conferences: As needed
Communication Focus and Outcomes in 2023	• Designation of a legal expert to manage correspondence with government agencies and handle legal documents. • Regular upload of information to the Public Information Observation System for disclosure purposes. • Approval from the stock exchange for stock transfer to listing status, officially listed as a public company on January 25, 2024. • Adherence to the Financial Supervisory Commission's roadmap for sustainable development of listed companies, continuously integrating TCFD framework guidelines and relevant disclosures to address climate change. • Receipt of government scientific research grants totaling NT$5,435 million for the Ropeginterferon alfa 2b clinical trial program for the treatment of ET. • Issuance of bilingual sustainability reports in June each year.	• Assignment of a dedicated PR professional to interact and communicate with the media. • Establishment of bilingual news sections on the corporate website, providing up to date information on news and developments. • Publication of bilingual sustainability reports in June each year. • Media coverage and interviews highlighting company initiatives and activities.	• Through advocacy and practical actions, Pharma Essentia collaborates with NPOs and NGOs to engage in social welfare activities. • Panco Healthcare assists the Taiwan Myeloproliferative Neoplasms (MPN) Care Association in organizing World MPN Day educational seminars and the first member conference, supporting patient education and empowerment initiatives. • Continuously sponsoring the One Song Orchestra for five years, with 26 participants in the 2024 New Year Charity Concert. This sponsorship fosters cultural and artistic development, promoting inclusivity and contributing to the United Nations Sustainable Deve lopment Goals (SDGs) 8 and 11. • Sponsoring the Digital Humanitarian Association's rural elderly health project, demonstrating practical care for vulnerable groups and contributing to various SDGs including SDG 3, SDG 4, SDG 5, SDG 8, SDG 10, SDG 11, SDG 13, and SDG 17. • Supporting the International Jane Goodall Institute's Hope Box biodiversity project, contributing to the conservation and sustainable utilization of biodiversity, aligning with SDGs 3, 4, 13, and 15, as well as the Convention on Biological Diversity (CBD) and the World Health Organization's (WHO) health advocacy efforts.

2 Corporate Governance

Chapter Highlights

0 Violations	No breaches of Business Integrity and Code of Conduct
100%	Attendance Rate by Board of Directors and Compensation Committee
2	Female Directors
92	Valid Patents, 118 Valid Trademarks
4	R&D IP Education and Training Sessions
53	R&D IP Education and Training Hours
100%	Audit Findings Resolution Rate
0	Data Security Breaches

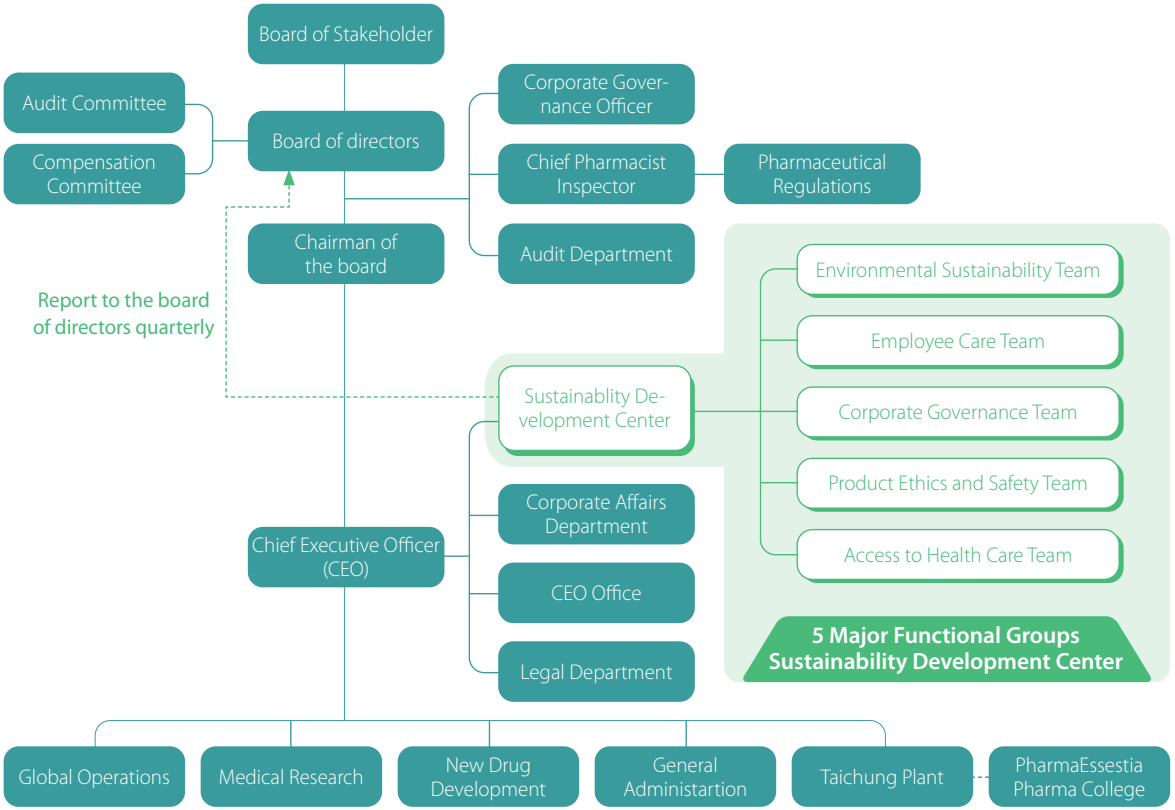
PharmaEssentia highly values regulatory compliance, continuously enhancing the functions of the Board of Directors from a governance perspective, implementing policies on integrity in business, risk management, and information security management. These initiatives are aimed at enhancing corporate resilience and operational capabilities, continually achieving new heights in operational performance.

2.1 Corporate Governance Framework

Board Selection and Responsibilities

GRI 2-9, 2-10, 2-11, 2-15

PharmaEssentia's Board of Directors is the highest governance body, operating under a unitary board system with a term of three years; the most recent term spans from August 5, 2021, to August 4, 2024. The Board's responsibilities include formulating the company's sustainability strategy, overseeing management, and holding significant accountability to the company and its shareholders. The Board oversees committees such as the Audit Committee and the Compensation Committee. The Sustainable Development Center is directly under the CEO, and its functions are shown in the figure on the right.



100%

Attendance Rate by Board of Directors and Compensation Committee

Functional Committees GRI 2-20

PharmaEssentia's Board of Directors has established two functional committees: the Audit Committee and the Remuneration Committee. These committees are composed entirely of independent directors. The Remuneration Committee includes one external expert, Professor MingChuan Hsieh, further strengthening the Board's functionality and enhancing management mechanisms.

Committee	Audit Committee	Remuneration Committee
Responsibilities	Assists the Board of Directors in fulfilling their oversight role regarding the company's accounting, auditing, financial reporting processes, and the integrity and quality of the company's financial controls. Additionally, the committee oversees the management and control of existing or potential issues that could impact the company, thereby strengthening internal control mechanisms.	Assists the Board of Directors in establishing and reviewing policies, systems, standards, and structures for the performance evaluation and remuneration of directors, supervisors, and managers.
Composition	Independent Director: JinnDer Chang Independent Director: Patrick Y. Yang Independent Director: JienHeh Tien	Independent Director: JinnDer Chang Independent Director: Patrick Y. Yang Independent Director: JienHeh Tien Professor Ming-Chuan Hsieh
Number of Meetings	13	3
Attendance Rate	100%	100%

Avoiding Conflicts of Interest GRI 2-15

The company has established several policies including "Board Meeting Rules," "Code of Business Integrity," and "Operating Procedures and Guidelines for Business Integrity" to ensure that the nomination process for board members adheres to government regulations and avoids any improper benefits that could arise from the official capacities of the company's directors and staff. Currently, no board members have significant conflicts of interest, and there is no single shareholder with absolute control: The company's founder and their family members hold less than 5% of the shares; government shareholding mainly comes from the National Development Fund Management Committee of the Executive Yuan and the Committee of Yaohua Glass Corporation, together holding approximately 9.33% of the shares, with no special stock arrangements. For more details, please refer to the company's annual report.

Board member selection is conducted by the shareholder meeting based on the Director Election Policy, taking into account the company's size and the shareholding pattern of major shareholders as well as practical operational needs. The company has a "Diversity Policy for Board Members," ensuring that board members have diverse professional and industry backgrounds, providing expertise in operational judgment, accounting and analysis, business management, industry knowledge, response to climate change, and international market perspectives.

Board Composition and Diversity

GRI 2-9, 2-10, 2-11, 2-15, 405-1

PharmaEssentia's Board of Directors comprises 11 members, with an average tenure of 8.3 years. The board includes two female directors, representing 18% of the board composition. There are three independent directors, accounting for 27.2% of the total board members. Plans are in place to potentially increase the number of female directors and independent directors to more than one-third, depending on operational needs of the company. The composition of the Board of Directors is as follows:

Names	Nationality	Expertise and Skills	Gender	Professional Competencies								Age Group			Tenure of Independent Director			Dual Role as Senior Executive (Yes = O)
				Operational Judgment	Accounting / Financial Analysis	Business Management	Crisis Management	Industry Knowledge	Global Market Perspective	Leadership	Decision-making	60 Years & Below	60-69 Years	70 Years & Above	7-9 Years	4-6 Years	1-3 Years	
ChingLeou Teng	R.O.C.	Biotechnology	Female	✓		✓	✓	✓	✓	✓	✓			O				O
KoChung Lin	R.O.C.	Biotechnology	Male	✓		✓	✓	✓	✓	✓	✓			O				O
ShenYou Gong	R.O.C.	Financial Services	Male	✓	✓	✓	✓		✓	✓	✓		O					
BenYuan Chen	R.O.C.	Education	Male	✓		✓				✓	✓			O				
YenChign Hwang	R.O.C.	Financial Services	Female	✓	✓				✓		✓	O						
Chao Chung Kuo	R.O.C.	Water Resources	Male	✓		✓	✓	✓	✓	✓	✓	O						
ChanKou Hwang	R.O.C.	Biotechnology	Male	✓		✓	✓	✓	✓	✓	✓		O					O
ShenYi Li	R.O.C.	Law	Male	✓				✓	✓		✓			O				
JinnDer Chang	R.O.C.	Accounting Law	Male	✓	✓	✓	✓		✓	✓	✓			O	O			
Patrick Y. Yang	USA	Biotechnology	Male	✓		✓	✓	✓	✓	✓	✓			O	O			
JienHeh Tien	R.O.C.	Biotechnology	Male	✓		✓	✓	✓	✓	✓	✓			O		O		

Continued Enhancement of Board Knowledge

GRI 2-17

To strengthen board functionality, the company offers a variety of continuing education courses for board members. In 2023, all 11 board members met regulatory requirements for training, participating in a total of 9 sessions and accumulating 81 person-hours of training. The courses covered the following topics:

- ◆ Information Security and Technology Management: 3 sessions, totaling 63 person-hours.
- ◆ Corporate Governance Practices: 3 sessions, totaling 9 person-hours.
- ◆ Climate Change and Carbon Management: 2 sessions, totaling 6 person-hours.
- ◆ Financial Reporting and Management Analysis: 1 session, totaling 3 person-hours.

For more detailed information, please refer to the directors' training link: https://mops.twse.com.tw/mops/web/t93sc03_1

Board Performance Evaluation GRI 2-18

PharmaEssentia has established the "Board Performance Evaluation Policy" and the practices for "Board Self-Assessment or Peer Evaluation" to set performance goals and assessment systems for the board. An internal evaluation of the board's performance is conducted at least once annually, with an external professional independent organization appointed every three years to perform the annual board performance evaluation. The results of the 2023 internal evaluation of the board and its members were reported to the board on February 26, 2024, in accordance with the law. The assessment was unanimously approved with no further recommendations.

For external evaluations, the most recent was conducted by the Taiwan Corporate Governance Association for the period from November 1, 2020, to October 31, 2021 (the evaluation report can be accessed on the website). The evaluation recommended four improvements, including strengthening the director nomination process, developing a comprehensive management talent cultivation plan, establishing a robust whistleblower mechanism and communication channels, and creating a dedicated corporate governance section on the company's official website. In response, PharmaEssentia has set up a corporate governance section on its official website; in 2023, the focus was on recruiting senior management talent for international expansion plans. The Taiwan headquarters will also initiate training programs for key personnel at all levels in 2024, with implementation following board approval according to the set program goals and internal approval authority.

Linking Director Remuneration Policy to Sustainable Performance GRI 2-19, 2-20

The remuneration for our company's directors is determined according to internal statutes, with an allocation not exceeding 5% of the profit remaining after offsetting accumulated losses for the year. Directors' compensation is based on their involvement in company operations, performance contributions, and results from board performance evaluations. Information regarding the remuneration of directors and senior management can be referred to in the annual report. We are in the process of revising the director remuneration policy for the next board election to align it with the company's sustainability goals and performance indicators.

The performance indicators for the Chairwoman, CEO, and General Manager are linked to sustainable development activities. Key performance indicators (KPIs) include ongoing investment in the innovation of new drugs, driving key global clinical trials, accelerating drug licensing applications, deepening global business operations, successfully scaling up commercial production and improving process efficiency, optimizing the global supply chain and transportation efficiency, enhancing the global digital systems operations, and fulfilling corporate social responsibility.

Participation in Professional Associations GRI 2-28

PharmaEssentia chooses to engage with biotech and pharmaceutical associations, maintaining membership through the payment of dues. We collaborate with these associations to extend our influence and promote industry development.

2023 Participation in External Associations	Annual Membership Fees (NTD)
Taiwan Research-based Biopharmaceutical Manufacturers Association	300,000
Taiwan Pharmaceutical Manufacturer's Association	120,000
Development Center for Biotechnology (Non-profit Organization)	76,190
Taipei Pharmaceutical Business Association	34,400
The Allied Association For Science Park Industries, Taiwan	72,000
Taiwan Pharmaceutical Manufacture and Development Association	50,000
Taiwan Bio Industry Organization	20,000
Hematology Society of Taiwan	50,000
Taiwan Parenteral Drug Association	7,000
Chinese Association for Pharmaceutical Agents	32,000
Institute for Biotechnology and Medicine Industry	20,000
Taiwan Myeloproliferative Neoplasms Association	50,000
Total	831,590

Tax Strategy and Governance

GRI 207-1, 207-2, 207-3, 207-4

PharmaEssentia has established a tax policy and commitment; the company rigorously operates in accordance with the tax laws of Taiwan and each market where it operates, and ensures transparency in reporting to strengthen compliance with tax laws and commitments across the group. The responsibility for tax management within the company rests with the Head Office's Accounting Department, which coordinates with the accounting departments of the subsidiaries to plan and legally manage tax filings.

PharmaEssentia is committed to following tax management guidelines to reduce tax risks, optimize post-tax operational results, and protect shareholder interests:

PharmaEssentia Tax Policy and Commitments

1. Compliance with Tax Laws and Regulations: All operations are conducted in accordance with relevant tax laws and regulations.
2. Arm's Length Principle: Transactions between related entities are conducted based on the arm's length principle, adhering to the internationally recognized transfer pricing guidelines published by the Organisation for Economic Co-operation and Development (OECD).
3. Transparency in Financial Reporting: Financial reports are transparent, and tax disclosures comply with relevant regulations and standards.
4. Prohibition of Tax Avoidance Transactions: Engages in no transactions that are solely for the purpose of tax avoidance.
5. Mutual Respect and Transparency with Tax Authorities: Establishes a relationship of mutual respect and transparency with tax authorities.
6. Tax Impact Consideration in Decision Making: Major company decisions consider the impact of taxes.
7. Tax Risk Assessment: Analyzes the operating environment and utilizes management mechanisms to assess tax risks.
8. Enhancing Tax Expertise: Strengthens tax expertise through ongoing training and development of personnel.

For the year 2023, the company recognized an income tax expense in the profit or loss statement. Please refer to the table below for the reconciliation of income tax expense to the accounting profit multiplied by the applicable tax rate.

Reconciliation of Income Tax Expense to Accounting Profit Multiplied by the Applicable Tax Rate

(Unit: NTD '000)	2021	2022	2023
Profit Before Tax from Continuing Operations	$(2,810,988)	$(1,841,871)	$(986,934)
Income Tax Calculated at the Parent Company's Statutory Rate	$(562,198)	$(368,374)	$(197,388)
Tax Impact of Deferred Tax Assets/Liabilities	562,198	(68,107)	(168,670)
Other	-	(30,580)	2,959
Total Income Tax Expense Recognized in Profit or Loss	$0	$(467,061)	$(363,099)

Source: For detailed information, refer to the company's annually audited consolidated financial statements.

Internal Control and Internal Audit

To assist the Board of Directors and management in implementing corporate governance and strengthening internal control and audit functions, our company's Internal Audit Department reports directly to the Board of Directors. The department is headed by a Chief Auditor, with one to two auditors under Chief Auditor supervision. The appointment and dismissal of the Chief Auditor must be approved by the Audit Committee and passed by the Board of Directors.

The Chief Auditor reports to the Audit Committee and the Board of Directors quarterly on the execution of audit tasks, enhancing the Board's oversight of the implementation of the company's audit system. Regular meetings are scheduled for independent communication between internal auditors and independent directors. Furthermore, any deficiencies identified during the annual audit plan's internal control checks are continuously monitored and re-evaluated to ensure that the relevant units have taken timely and appropriate corrective actions.

Routine and project-specific audits, along with subsidiary oversight tasks, are conducted to assess the functionality of internal controls and identify potential risks. These efforts assist the Board of Directors and management in fulfilling their responsibilities. In the year 2023, the audit unit completed 55 audit reports without identifying any significant deficiencies.

2.2 Business Integrity and Code of Conduct

PharmaEssentia's Commitment:

From the Board of Directors to all employees, PharmaEssentia adheres strictly to the Business Integrity and Code of Conduct. All company governance-related procedures can be accessed and downloaded from the company's website.

Anti-Corruption and Anti-Bribery Measures:

PharmaEssentia has established clear policies against corruption and bribery and regularly conducts training and educational sessions for all employees and directors. In 2023, the company provided training on anti-corruption, anti-bribery, and anti-trust/anti-competitive practices. An internal control system assessment related to corruption risks conducted in 2023 revealed no corrupt activities within operational practices, and there were no incidents of corruption, anti-competitive, anti-trust, or monopolistic behaviors reported.

Board of Directors Meeting Rules:

The rules specify systems for avoiding conflicts of interest among the Board of Directors and other relevant parties. Future plans include establishing a monitoring unit under the Compliance Committee.

Employee Compliance:

All employees are required to follow seven major business conduct and ethics rules, which ensure that company personnel adhere to principles of fairness and justice in their professional duties, prohibiting profit-making from their positions or the manipulation and misuse of information obtained through their roles. The Human Resources department has established a specific reporting system for illegal activities, including corruption, by both internal and external personnel. New employees receive training on professional ethics as soon as they join the company.

In 2023, PharmaEssentia did not have any violation cases of ethical management and corporate code of conduct, nor did it receive any complaints.

0 Violations

No breaches of Business Ethics and Integrity Code of Conduct

2023 Initiatives:

Integrity Management Code

In 2023, the company invited the Securities and Futures Institute to conduct online training for employees, focusing on preventing insider trading and compliance with related laws. Four educational sessions were held, with a total of 186 participants and 372 training hours.

Business Ethics and Compliance Standards

To enhance awareness and understanding of pharmaceutical safety monitoring and compliance among all employees, the company's Drug Safety Monitoring Unit organizes mandatory training sessions at least once a year. In 2023, online training and feedback via questionnaires were conducted for employees at the Taiwan headquarters and subsidiary Panco, with a total of 311 participants and 155.5 training hours.

Internal Information and Insider Trading Prevention

The Audit/Legal Department organized three sessions in 2023 to educate directors, managers, employees, and subsidiary managers about regulations concerning significant information and short-term insider trading. These included online sessions and external professional presentations on current applications, opportunities, and future challenges of artificial intelligence to enhance their knowledge. A total of 42 participants attended, with 99 training hours.

2.3 Risk Management

Risk Governance Unit:

The Board of Directors serves as the highest supervisory and decision-making body for risk management, endorsing the overall objectives and policies for risk management and continuously overseeing the effective operation of risk management mechanisms. The Audit Committee, the Audit Office, and the Corporate Governance Director are established under the Board to manage both existing and potential risks, thereby strengthening internal control mechanisms to reduce risks, proactively mitigate negative impacts, and prevent financial losses.

Risk Management Policies and Practices:

The company has established internal risk management policies, procedures, and control systems in accordance with relevant standards, managing all risk issues, impacts, and corresponding significant topics properly. Annually, the overall risk management objectives and policies are ratified by the Board of Directors. Board of Directors assigns the senior management responsible for the major issues management and continues to ensure the effective operation of the risk management mechanisms through the regular supervision.

Risk Identification and Classification:

PharmaEssentia adopts the 2018 COSO Enterprise Risk Management (ERM) framework, along with the biotech industry-specific requirements, to classify risks into nine categories. For each category of risk, different mitigation strategies are employed to reduce their impact on the company.

Risk Category	Definition	Mitigation Strategy
Industry Risk	High-risk industry due to the high investment and uncertainty in drug development timelines.	• Besremi is already on the market; ongoing development using PEGylation technology platform to develop other long-acting protein drugs, expanding new indications to maximize R&D efficiency, and reducing single product market risk.
Market Risk	New drug development is time-consuming and has a low success rate. If successful, the product must compete with existing or alternative products.	• Develop new products focusing on orphan drugs, which typically have fast-track review benefits, potential for free pricing, and market exclusivity upon market entry. • Collaborate with external companies to diversify product offerings.
R&D Risk	Includes risks from clinical trial progress or results differing from expectations, competitors' advancements, difficulty in retaining/ developing R&D talent, and heavy reliance on CRO/CMO.	• Develop drugs for various indications to diversify risk. • Recruit biotech industry talent to create and maintain conducive R&D environment. • Select cooperative trial organizations to foster long-term partnerships.
Financial Risk	Risks involving exchange rates, inflation, R&D investments, and operational capital requirements causing financial losses.	• Financial unit interacts closely with forex banks, monitors market trends, and strictly manages financial resources and budget execution.

Risk Category	Definition	Mitigation Strategy
Legal Risk	Risks from international arbitration that could lead to reputational damage or financial loss.	• Engage a professional legal team to handle international arbitration issues to protect and maximize shareholder interests.
Policy Risk	Risks from geopolitical situations or changes in national policies.	• Stay updated with international political and economic news, monitor impacts on production supply chains, and adjust business strategies swiftly. • Establish a regulatory affairs department to keep track of drug approvals and changes in health insurance policies.
Technology Change Risk	Risks including information security, digital transformation, talent skills, supply chain disruptions, or regulatory changes affecting operations.	• Establish an information security management team responsible for promoting, governing, and monitoring information security, continually strengthening information security management to protect trade business secrets and stakeholder interests.
Environmental Risk	Risks from climate change, natural disasters, or pandemics.	• Implement the TCFD framework to enhance climate risk management, pass ISO 14064-1 inspections at Taichung plant, and implement various energy-saving and carbon-reduction measures. • Strengthen SCM to maintain safety stock and develop alternative material sources.
Other Risks	Risks not categorized above that could cause significant losses.	• Implement corresponding emergency measures based on the severity of the situation.

Remediation of Negative Impacts GRI 2-25, 2-26

The company has established a comprehensive remediation process for negative impacts, structured in three phases: prevention, grievance, and corrective action. This approach ensures effective responses to both potential and emergent issues.

1. Prevention

Strict Policy Formulation

Implementing detailed policies requiring employees and suppliers to strictly adhere to standards related to business integrity, pharmaceutical marketing ethics, human rights, and environmental protection to prevent any violations.

Robust Information Security Control

Enforcing stringent information security management and control measures to ensure data security and protect privacy rights.

Comprehensive Risk Management

Utilizing the COSO ERM framework to perform thorough assessments coupled with conducting numerous educational trainings to ensure all employees are aware of the preventive measures against risks.

2. Establishment of Grievance Mechanisms

Multiple Internal and External Reporting and Grievance Channels
(Create diversified two-way communication channels for colleagues and listen to the voices of employees)

Internal Communication Channels

- Labor-management meetings
- Welfare committee meetings
- Employee suggestion e-mail box: voice@pharmaessentia.com

External Grievance Channels

- ESG dedicated web portal for disclosures and contact: includes updates, downloads, newsletters, interactive sections, and contact information.
- Reporting of workplace legal violations: hr@pharmaessentia.com

3. Review and Improvement

Case Handling: Complaint cases are forwarded by the receiving units to the responsible departments based on the nature of the issues. Proposed corrective measures are discussed with employees or external stakeholders.

Documentation and Compliance: The audit office maintains records of the outcomes to ensure compliance and reasonableness. These are disclosed timely in the sustainability report to enable stakeholders to have complete access to the company's information.

2.4 Compliance with Laws and Regulations GRI 2-27

The biotech and medical industry is subject to stringent regulatory oversight. To ensure that PharmaEssentia complies with global regulatory standards throughout the drug lifecycle, the company keeps abreast of domestic and international policy and legislative developments to formulate its global compliance strategies.

PharmaEssentia has established various operational management procedures to ensure compliance, including:

- Corporate Governance Practices Code
- Business Integrity Code
- Code of Ethical Conduct
- Business Integrity Operating Procedures and Behavior Guidelines
- Sustainable Development Practices Code
- Internal Significant Information Management and Insider Trading Prevention Procedures
- Intellectual Property Rights Management and Utilization Procedures
- Litigation and Major Dispute Management Procedures

In total, over 40 procedures have been established to govern operations. Compliance units within PharmaEssentia such as the Regulatory Affairs unit, Audit Office, Corporate Governance Director, Legal Department, Human Resources, and other functional departments enforce these procedures and require adherence by all relevant internal teams and suppliers.

Regulatory Compliance During Product Lifecycle: SASB HC-BP-270a.1, HC-BP-270a.2

Concrete Actions for Legal Compliance	Pharmaceutical Product Lifecycle	International Local and Internal Ethical Standards
Before market launch		
New drug development and preclinical research	✓ Good laboratory practice (GLP) ✓ Non-clinical safety standards for drug testing established by regulatory agencies in each country	• Establishing a legal compliance committee • Setting up an anonymous hotline for reporting violations • Establishing a dedicated section for legal compliance-related measures • Ensuring all functional departments adhere to legal compliance-related measures • 100% coverage of employee training on legal compliance • Monitoring system for meals provided to healthcare professionals • Business rules and operations for speaking events • Ethical guidelines for pre-clinical animal testing • Ethical guidelines for clinical human trials
Clinical trials	✓ Good clinical practice (GCP) ✓ Good manufacturing practice (GMP) ✓ Ethical principles of the Helsinki Declaration ✓ Local regulations established by regulatory agencies, such as Taiwan's "Regulations for Human Clinical Trials" and "Pharmaceutical Affairs Act"	
Production and mannufacturing	✓ Good distribution parctice (GDP) ✓ Good manufacturing practice (GMP) ✓ Local regulations established by regulatory agencies, such as the European Pharmacopoeia, United States Pharmacopeia, Tawan's "Medical Care Act", "Pharmaceutical Affairs Act", and "Standard for the Establishment of Pharmaceutical Manufacturing Plants"	
Drug registration	✓ Local regulations established by regulatory agencies, such as Taiwan's "Guidelines for Inspection, Registartion, and Review of Pharmaceutical Products"	
After market launch		
Marketing and sales	✓ Good distribution practice (GDP) ✓ Relevant ethical regulations established by the World Health Organization (WHO) and regulatory agencies in various countries	• Implementing a transparent reporting system • Implementing a review proess and control measures for speaking events, advisory committees, and the monitoring and auditing system for meals provided to healthcare professionals • Implementing a compliance review process and control measures for advisory committees • Other legal compliance policies and standard operating procedures, such as investigations, monitoring, and employee discipline • Pharmaceutical marketing ethics guidelines
Pharmacovigilance	✓ Good pharmacovigilance practice (GVP) ✓ Local regulations established by regulatory agencies, such as Taiwan's Pharmacovigilance Management Measures	

Regulatory Compliance Incident Description, Subsequent Handling, and Prevention Measures GRI 2-27

In 2023, our company faced one compliance violation. In November, an excess purchase of 3,000 shares of treasury stocks resulted in a penalty of NT$300,000 imposed by the Financial Supervisory Commission. The company has duly addressed this issue in accordance with relevant laws governing the repurchase of treasury stocks and has planned corrective measures.

Incident Description

The Board of Directors of our company passed a resolution on July 28, 2023, to repurchase treasury stocks, intending to buy back 4,000,000 shares but turn out to be 4,003,000 shares. Due to an oversight by the personnel in charge of executing the repurchase, 3,000 shares were bought in excess, violating Article 28-2, Paragraph 3 of the Securities and Exchange Act. Consequently, the Financial Supervisory Commission imposed a fine of NT$300,000. Following the directive under the sanction letter no. 11203575891 from the Securities and Futures Bureau, the company disposed of these 3,000 treasury shares on December 20, 2023, and submitted the proceeds from this disposal. As of now, there have been no similar incidents. Furthermore, the company has established an internal review mechanism for personnel and enhanced training programs to ensure compliance with domestic laws and regulations.

2.5 Data Security and Privacy Protection

Strengthening of Information Security Measures:

In 2022, to enhance our information security defenses and management mechanisms, and to comply with the "Guidelines on the Establishment of Internal Control Systems by Publicly Listed Companies," PharmaEssentia announced on the website that it amended its "Information Security Management Procedures." Additionally, established a Cybersecurity Promotion Team, responsible for driving, coordinating, supervising, and reviewing matters related to information security management. The information security officer reports annually to the Board of Directors, with the most recent report completed on December 26, 2023.

Implementation and Certification of ISO 27001:

In October 2023, PharmaEssentia implemented the ISO 27001 Information Security Management System and anticipates receiving third-party certification by June 2024. To enhance the information security awareness of all employees, the company conducted a social engineering training session and two educational sessions focused on ISO 27001 in 2023, involving a total of 271 participants and approximately 323.5 hours. Additionally, one employee undertook a 40-hour course to become a Lead Auditor for ISO/IEC 27001:2022, and has since obtained the certification. Plans are underway to replicate these management practices in subsidiaries in the United States and Japan, starting with the Taiwan production site, and to continue their maintenance and operation.

Data Security Initiatives in the United States:

While PharmaEssentia USA has not implemented the ISO 27001 Information Security Management System, it has initiated cybersecurity training programs. All employees are required to regularly complete these training sessions to enhance their security awareness. In 2023, ten draft policy documents related to information security were created, which are to be confirmed and implemented by the management in 2024.

Information Security Management Activities and Actions at Headquarters

Initiatives & Roadmap

2023 Performance

- Data Loss Prevention (DLP) End-Point Security Protection
- Quality Assurance Department Document Encryption (Phase One)
- EDR Deep Learning Threat Detection and Protection Software
- Zero Trust Network Architecture Optimization & Access Services
- Email Archiving
- Patching High-Risk Vulnerabilities and Annual Cybersecurity Social Engineering Drills
- ISO 27001:2022 Information Security Certification Guidance

2024 Short-Term Goals

- Obtaining ISO 27001 Certification
- Implementation of a SIEM (Security Information and Event Management) System

2025-2030 Medium to Long-Term Goals

- Planning and Implementation of a Data Management Platform (DMP) for File Encryption.
- Zero Trust Cybersecurity: Integrated System and Network Defense with Proactive Alert Mechanisms.
- Continuous System Operations, Disaster Recovery (DR) Backup Planning and Implementation.

Implementation of Customer Privacy Protection GRI418-1

Scope of Information Security and Privacy Protection:

In addition to our internal employees, the scope of our information security and privacy protection efforts extends to healthcare professionals, medical institutions, outsourced partners, and clinical trial participants.

Patient Information Security:

All external research organizations working with PharmaEssentia and medical staff involved in clinical trials at hospital sites are required to strictly adhere to our privacy protection policies. They must also comply with various national and international regulations, such as the European Union's General Data Protection Regulation (GDPR), Good Clinical Practice (GCP) guidelines, the Declaration of Helsinki, Taiwan's Human Research Ethics Policy Guidelines, and the Medical Act. These measures are part of our commitment to ensuring the protection of personal data. In 2023, there were no incidents of employee or customer data protection and privacy complaints, nor were there any complaints regarding the loss of customer data across all PharmaEssentia

2.6 Intellectual Property Management

PharmaEssentia has established "Intellectual Property Management and Utilization Procedures" to regulate the acquisition, protection, maintenance, and utilization of the company's intellectual property rights. From a legal perspective, the company has set "Litigation and Significant Dispute Management Procedures" to regulate the control of legal cases and significant disputes. Each year, the Intellectual Property Department regularly reports to the Board of Directors on the execution of the previous year's intellectual property management plan and the plan for the upcoming year.

The execution of the 2023 intellectual property management plan and the new plan for 2024 were reported to the Board of Directors on February 26, 2024, ensuring the effective management and protection of the company's intellectual property rights. The Board's full awareness assists the company in enhancing its intellectual property strategy and protection, moving towards greater refinement.

Patent Structuring and Strategy

The decision to file a patent application for a research and development result, and the regions/countries in which to apply, must be made according to PharmaEssentia procedures, handled on a case-by-case basis. With the different indications/patient types/market conditions of Besremi and other new drugs developed by PharmaEssentia, the demand for patent applications and the countries of application will also change. The company considers various factors including marketing, manufacturing, local health insurance reimbursement statuses, availability, and regulatory requirements before making decision on the patent application.

Practices in Intellectual Property Rights at PharmaEssentia include:

1. Continual Patent Applications and Acquisition Worldwide:

PharmaEssentia places great importance on patent protection and management, respecting global patent protections and intellectual property rights. We are committed to protecting the specific R&D outcomes of pharmaceutical development companies, continuously expanding the protection and influence of the product lifecycle of new drugs, and leveraging this to enter global markets.

2. Patent Rights for Medicinal Access Superior to New Drugs

We adjust our operational strategies based on the needs of patients in different regions and the accessibility of medicines; considering that least developed countries may not afford or access innovative medicines due to intellectual property rights protections, in addition to considering the prevalence of the condition, local economic levels, and local government policies on new drugs, we also take into account the actual situations in low-income countries and least developed countries (LIC/LDC) from an intellectual property management perspective to meet local patients' needs for drug access. For instance, when choosing between exercising patent rights and humanitarian aid, priority is given to medical needs, providing channels for drug accessibility and affordable prices, allowing patients access to patented new drugs. In 2023, PharmaEssentia did not apply for or enforce patents in any low-income or least developed countries.

92
Valid Patents

118
Valid Trademarks

Intellectual Property Education and Training

In 2023, PharmaEssentia conducted four sessions of intellectual property-related training for R&D directors and R&D personnel in the United States (PIRC) and Taipei headquarters, totaling 53 hours.

Patent and Trademark Management

PharmaEssentia places great emphasis on patent protection and management, in line with the intellectual property strategy of the group. We continuously pursue new patent and trademark applications. As of the end of 2023, PharmaEssentia has obtained 92 patents and 118 trademarks, with an additional 19 patents and 18 trademarks currently under application.

	Number of Patent	Number of Trademark
Obtained	92	118
Application Pending	19	18

Patent infringement, protection and specific measures

PharmaEssentia has taken a number of measures to ensure the protection of intellectual property rights against patent infringement. In terms of internal control system, the Company has formulated the "Regulations for the Management and Use of Intellectual Property Rights", which not only applies for patents in a timely manner to strengthen the protection of rights and interests in view of the risks of core patent rights, but also issues legal warnings or requests for compulsory orders from the court against suspected infringers. In terms of employee confidentiality obligations, the company and employees have signed employment contracts and confidentiality agreements, which clearly regulate confidentiality obligations and liability for breach of contract. Specific measures have also been taken to ensure non-infringement, including technology search and analysis at the start of R&D projects, ensuring that future development directions do not infringe on the technology of others, and monitoring the emergence of new technologies at any time during the development process.

Through these comprehensive measures and systems, PharmaEssentia is able to effectively protect the key core technologies developed by itself and avoid significant impact on the company due to negligence in R&D or technology-related links.

2.7 Ethical Marketing of Pharmaceuticals

Materiality Assessment

GRI 417-3 | HC-BP-270a.2, 510a.2

PharmaEssentia's ethical marketing policy governs the interactions between pharmaceutical professionals and medical institutions, as well as healthcare professionals, ensuring the welfare of patients is maintained.

Materiality Assessment

Ethical Marketing Policy

Impact Assessment

Global standards require ethical behavior in drug marketing, prioritizing patient welfare, including compliance with WHO, IRPMA, PhRMA, and NCP-DP standards.

Responsible Entities

Marketing departments and medical affairs teams at Taiwan headquarters and subsidiaries, coordinated by the Sustainability Development Center: Access to Health care Team and Product Safety and Ethics Team.

Management Policies and Commitments

This policy mainly regulates the behavior of PharmaEssentia personnel in drug marketing; advocates this policy for all internal employees who interact with medical service professionals every year, and annually conducts process reviews for all activities, marketing documents, and daily operations. Based on seven principles:

1. Patient health and welfare priority.
2. High standards for quality, safety, and efficacy.
3. Ethical interactions: ethically, appropriately and professionally when interacting with relevant entities or individuals. Do not provide or supply any goods and services that may directly or indirectly cause undue influence
4. Accurate information: providing correct, balanced and scientifically valid product information
5. Ethical marketing: marketing activities are ethical, correct and balanced. There must be no risk of misleading. Product marketing information must include a proper assessment of the risks and benefits of the product and how to use it appropriately
6. Privacy respect: respect patients' privacy and personal information
7. Transparent research: sponsored/supported clinical trials or scientific research for the purpose of pursuing new knowledge, enhancing the interests of patients and promoting the progress of medical science and technology; maintain transparency in industry-sponsored human clinical trials.

Indicators and Goals

Zero violations.

Effective Implementation Measures

Regular internal reviews by relevant teams to ensure effective implementation.

- **2023 Performance**

No violations in ethical pharmaceutical marketing across all countries.

3 Drug Quality and Safety Management

Chapter Highlights

NTD 2.22 billion	R&D spending increased by 56% and accounted for 43.5% of revenue
100%	Completion rate of drug safety monitoring training for new recruits
95%	First time to introduce a questionnaire survey on the recycling rate of supplier social/ environmental standards
89%	Proportion of local procurement amount
16 sessions	Global Drug Safety Surveillance Conference Tracker
25,000 hours	A total of 925 GMP/GDP quality education and training sessions were held
0	no post-marketing adverse drug recalls
100%	Completed the signing of supplier quality agreement and internal assessment for 5 consecutive years
Inspection Pass	Taichung factory successfully passed the Japan PDMA inspection

From drug research and development to the production phase, strict adherence to regulations and various quality requirements is essential; the drug supply chain must also be rigorously managed. This includes the sourcing of raw materials, manufacturing, filling, drug packaging, transportation, and ensuring safety up to the stage of patient use. All these aspects are critical issues that we prioritize.

3.1 New Drug Research and Development and Innovation Management

Materiality Assessment

GRI3-3

Materiality Assessment

New Drug Research and Development and Innovation Management

Impact Assessment

PharmaEssentia's PEGylation technology platform is a core of its R&D, prolonging time of the effective concentration of protein drugs in human blood. Besremi, a new generation long-acting PEGylated α-interferon, treats multiple indications and is under development for more to benefit additional patients.

Management Policies and Commitments

In addition to the breakthrough indication approval for MPN, PharmaEssentia focuses on addressing unmet mln addition to the breakthrough indication approval for MPN, edical needs, especially in hematological diseases and solid tumors, guided by the Access to Medicine Index. Commitment to animal welfare in preclinical testing during new drug research and development.

Responsible Departments

- New Drug R&D Division: Manages new drug discovery, with decisions made by the "Project Evaluation Team ," including cross-functional members and senior management, and "Project Review Meeting."
- Clinical Operations Department: Manages clinical trials.
- Sustainable Significant Theme: Managed by the Sustainability Development Center - Access To Health care Team.

Resource Allocation

- Global R&D Clinical Staff: 142 personnel, up 15.4% from last year.
- R&D Investment: NT$2.22 billion in 2023, a 56% increase from 2022.
- Key R&D Items: PEG-IL-2 technology for inflam- matory and immune diseases, clinical trials of other various drugs from Phase I to III, post-marketing research, and IIT.
- Collaboration: Development of TCR-T cell therapy through external partnerships.

Measures

- Number of drugs in development: 13
- The headquarters completed 2 IND applications and conducted 4 new clinical trials

Practices to ensure that actions are effective

- Through the combination of AI and machine learning, we will expand the capacity of R&D
- Continue to recruit scientific professionals with experience in drug development, and combine AI/ML technology to improve efficiency in the early stage of drug development, design and optimization

2023 Performance

- The PharmaEssentia Innovation Research Center Corporation (PIRC) was established to combine AI and machine learning to further expand the capacity of R&D innovation, effectively identify research objectives in the early research stage, reduce development time and cost, and accelerate the process from R&D to market.
- Clinical trials: In 2023, 4 new plans including CML, HDV, PMF, and HCC will be added, bringing the total number of 9 clinical trial plans currently underway. In 2023, there will be 453 new patients, bringing the total number of clinical trial patients to 1,332.
- In 2023, PharmaEssentia completed the application for the IND of the Phase 1 TFDA clinical trial in Taiwan for the treatment of solid tumors with anti-PD-1 antibody (P1801). and the multi-national and multi-center Phase III clinical trial of essential thrombocythemia (ET), which also received a government grant of NT$5,435K.

Continuous Growth Trend in R&D Costs Over the Past Five Years (2019-2023)

Year	2019	2020	2021	2022	2023
Global R&D Expenditure (NT$ '000)	639,575	922,380	1,272,944	1,425,964	2,224,054
Increase in Expenditure from Previous Period (NT$ '000)	-	282,805	350,564	153,020	798,090
Growth Rate of Expenditure	-	44.2%	38.0%	12.0%	56.0%
Global R&D Personnel (number)	56	74	83	123	142
Increase in Personnel from Previous Period (number)	-	18	9	40	19
Growth Rate of Personnel	-	**32.1%**	**12.2%**	**48.2%**	**15.4%**

Innovative R&D Focus

SASB HC-BP-000.B

Apart from continued investment in MPN (Myeloproliferative Neoplasms), PharmaEssentia is also investing in PEG-IL-2 technology for the treatment of inflammatory and immune diseases. Additionally, it is engaged in joint development of TCR-T cell therapy through external collaborations.

PharmaEssentia plans to initiate two IND (Investigational New Drug) research projects:

- This includes starting clinical trials for an anti-PD-1 antibody (P1801) and a long-acting G-CSF
- clinical trials for new indications of P1101 in early PMF (Primary Myelofibrosis) and low-risk PV (Polycythemia Vera).
- the company aims to complete
  - at least one project up to the development candidate stage
  - at least one project up to the preclinical candidate development stage
  - Additionally, 1-2 external technology platform assets will be introduced. The development of an AI/ML (Artificial Intelligence/Machine Learning) platform is also planned.

Key Development Focus for the Next Five Years (2024-2029):

Continuous Growth in Besremi Operations

- Market Expansion:
  Patient usage and numbers continue to increase in existing markets.
- PV Indication:
  Expected to obtain drug approvals in China and Singapore-Malaysia in 2024.
- ET Indication:
  Plans to apply for U.S. drug approval in 2025, with approval anticipated by early 2026.

Expansion of indications for P1101

- Early PMF Clinical Trials:
  A global Phase III pivotal clinical trial for Early PMF (Primary Myelofibrosis) is currently underway, with plans to submit an FDA drug application by the end of 2026.
- Research in Other Blood Disorders:
  Ongoing research into the application of P1101 for other hematologic diseases, including ATL (Adult T-cell Leukemia/Lymphoma) and CTCL (Cutaneous T-cell Lymphoma).

Global supply capacity expansion

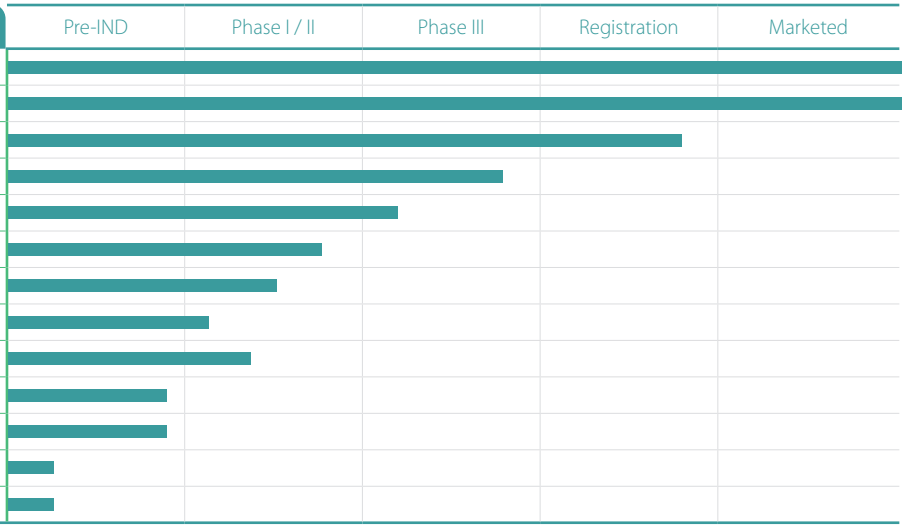
- Global Production Capacity :
  Expected to supply over 10,000 people
- Zhubei Plant Construction:
  In response to market demand, construction has begun on the Zhubei plant, with completion projected for 2026.

Top-tier R&D platform

- Innovative Immune Checkpoint Molecules and Cytokines:
  New types of immune checkpoint molecules and cytokines are being developed for the treatment of solid tumors, blood disorders, and immune diseases.
- Cell Therapy with TCR-T:
  This advanced therapy targets cancer antigens on the cell membrane for the treatment of solid tumors.

Source: March 2024 Analyst Presentation Documents

Therapeutic Area	Candidate	Indication	Market
Hematology	Ropeginterferon alfa 2b (P1101)	PV	EU
			US, TW, KR, JP
			CN, MY, HK, SG
		ET	Global
		Early myelofibrosis	Global
		Aduit T-cell Leukemia	JP, TW, CN
		CML	KR
Oncology	TCRT	Solid tumors	US, TW
	P1101 + anti PD-1	HCC	Global
	anti PD-1 (P1801)	Solid tumors	Global
	PEG-GCSF	Neutropenia	Global
	PEG-cytokine X, Y	Solid tumors	Global
	Novel checkpoint Abs	Solid tumors	Global



Note: For the latest updates on our R&D product line, please refer to the official PharmaEssentia website at https://hq.pharmaessentia.com/index.php?/en/pipeline

Commitment to Animal Welfare in Preclinical Animal Experiments

To ensure adherence to animal welfare, the company selects domestic and international contract research organizations (CROs) that are GLP-certified. These organizations are required to comply with the regulations of the Institutional Animal Care and Use Committee (IACUC) and adhere to the 3Rs principle (Refinement, Reduction, Replacement). This approach aligns with the directives of the Animal Welfare Committee to conduct experiments humanely. Currently, the company has entrusted three qualified domestic and international institutions to carry out preclinical animal experiments.

Participant Safety in Clinical Trials SASB HC-BP-210a.1

To ensure the safety of participants in clinical trials, PharmaEssentia has developed about 20 Standard for clinical operations management. Audit and verification mechanisms are implemented at each phase to maintain trial quality. All clinical trials, including Phases I, II, and III, are conducted in accordance with approved study protocols and comply with local national regulations. Currently, there are no clinical trials that have been terminated due to violations of Good Clinical Practice (GCP) standards.

Clinical Trial Quality Maintenance and Risk Management

Before Clinical Trials	Based on the characteristics of the drug and the differences in the trial design, the risks and extent that may be encountered during the trial process are evaluated.	
Risk Assessment	Develop "Monitoring Plan" and "Auditing Plan" through contracted CRO based on risk level to ensure QA and QC. Ensure participant rights and welfare protection and compliance with trial protocols, GCP, and regulations regarding trial execution and data generation、recording and reporting.	
Execution Process	**Quality Assurance (QA):** Independent auditing system, issue assessment and tracking, formulation of corrective and preventive actions (CAPA)	**Quality Control (QC):** Execute monitoring and co-monitoring activities.

Phase I Clinical Trial — Safety Exploration

Phase II Clinical Trial — Preliminary Efficacy Study

Phase III Clinical Trial — Large-Scale Confirmatory Efficacy Study

Trial Planning

Risk Assessment: Evaluate risks based on the services provided by the Contract Research Organization (CRO) and the characteristics of the clinical trial.
Monitoring and Auditing Plans: Develop monitoring and auditing plans based on the level of assessed risks.
Quality Management and Assurance: Establish plans for quality management and assurance to maintain high standards throughout the trial based on the level of assessed risks.

Before the Trial

Regulatory and Ethics Approval: The trial protocol and related documents must be reviewed and approved by health regulatory authorities and the Institutional Review Board Committee.
Investigator Meeting: Conduct training related to the trial.
Informed Consent from Participants: Participants must be fully informed and give written consent after careful consideration before screening can commence.
Participant Screening: Strictly screen participants based on the inclusion and exclusion criteria outlined in the trial protocol.

During the Trial

Co-Monitoring by Clinical Operations: The clinical operations department conducts co-monitoring with the CRO handling monitoring duties.
Auditing: Carry out audits according to the audit plan to ensure that the CRO's services meet quality standards.

After the Trial

Data Compilation and Review: Compile data on efficacy and safety for review and onsite verification by health regulatory authorities. Only after assessing benefits and risks can approval for marketing be granted.

3.2 Drug Quality and Product Safety

Materiality Assessment

GRI 3-3, 416-2, SASB HC-BP-250a.1~a.5

PharmaEssentia utilizes the highest standard operating procedures, quality management systems, and product traceability systems in its drug production processes. The company adheres to the PIC/S Good Distribution Practice (GDP) guidelines and has established over 4,000 documents related to quality safety management, standard operating procedures, and various plans and reports. These measures ensure compliance with operational processes as well as accuracy and completeness of record-keeping, thereby guaranteeing the quality and safety of the medications. This comprehensive approach safeguards medication safety for patients worldwide.

Materiality Assessment

Drug Quality and Product Safety

Management Policies and Commitments

PharmaEssentia Taichung plant strictly adheres to protocols such as the Quality Risk Management Procedure, Equipment Risk Assessment Procedure, and Change Control Procedure. It implements risk management for production processes, environmental control, material supply, and annual quality reviews to minimize quality hazards.

Responsible Team

- Headquarters Production, Transportation, Quality Management, and Auditing Departments
- Product Safety & Risk Management (PSRM) Team and Drug Safety Monitoring Quality Assurance Personnel in the headquarters and subsidiaries
- Quality Management of Marketed and Clinical Drugs is managed by the headquarters' Quality Assurance and Quality Control departments, in cooperation with Clinical Trial Quality Assurance and Drug Safety Monitoring teams.
- Sustainability Significant Themes: Managed by the Sustainability Development Center - Product Ethics and Safety team members.

Actions and Mythology

- Implementation of TrackWise Electronic System: PharmaEssentia has adopted the TrackWise electronic system to manage deviations, corrective and preventive actions, supplier management, and laboratory investigations within their quality system.
- Production Quality and Risk Management: The company conducts global cross-departmental risk assessment meetings to collaboratively review and address risk issues within the manufacturing facilities.

Indicators and Objectives

- Good Manufacturing Practice (GMP) certification is updated or extended as planned/maintain qualifications.
- Regularly perform internal and external audits, and successfully pass them.
- Complete GMP/Good Distribution Practice (GDP) training.

2023 Performance

- Passed routine inspections by Japan's PMDA, the U.S. FDA, Taiwan's TFDA, and Korea's MFDS with no significant deficiencies.
- Implemented the TrackWise digital quality management system for managing deviations, corrective and preventive actions, supplier management, and laboratory operations. Expected to complete the integration of equipment management and laboratory data systems by early 2024.
- Completed 12 internal audits and passed 20 external official inspections.
- Conducted 925 GMP/GDP training sessions, totaling 25,000 hours.
- Handled 143 customer complaints (unrelated to product safety), achieving a complaint rate of 0.15%, lower than the 0.86% in 2022.
- No recalls due to defective products.
- Held 15 global cross-departmental risk assessment team meetings to review risk issues within the manufacturing sites, with 92 participants involved.

Expanding Certification and Market Reach Year by Year

We are actively vertically integrating our supply chain, from production, quality control, and filling to shipping, as we expand into global markets, step by step implementing the development blueprint of an international pharmaceutical company.

2012	2013	2018	2020	2021	2022	2023
Completion of Taichung Biopharmaceutical Manufacturing Plant construction.	Attainment of GMP certification for the plant.	First Taiwanese protein pharmaceutical plant to pass EMA inspection and obtain GMP certification.	Establishment of new injectables plant receives TFDA's GMP certification and GDP accreditation.	Passes MFDS GMP audit in South Korea and FDA facility inspection in the United States, acquiring pharmaceutical licenses.	PMDA inspection in Japan reveals no significant deficiencies.	Successfully passes inspections by PMDA (Japan), FDA (United States), TFDA (Taiwan), and MFDS (South Korea), confirming absence of significant deficiencies

International Standard Manufacturing Processes

Our company's product, Ropeginterferon alfa-2b (P1101), undergoes four critical stages in production: fermentation and cell processing, P1040 extraction and purification, PEGylation and P1101 protein purification. Additionally, sterile filling and labeling packaging are conducted, with each phase strictly adhering to Good Manufacturing Practice (GMP) standards. These processes comply with international standards for quality management and standardized operating procedures.

2023 Next-Generation Process Optimization

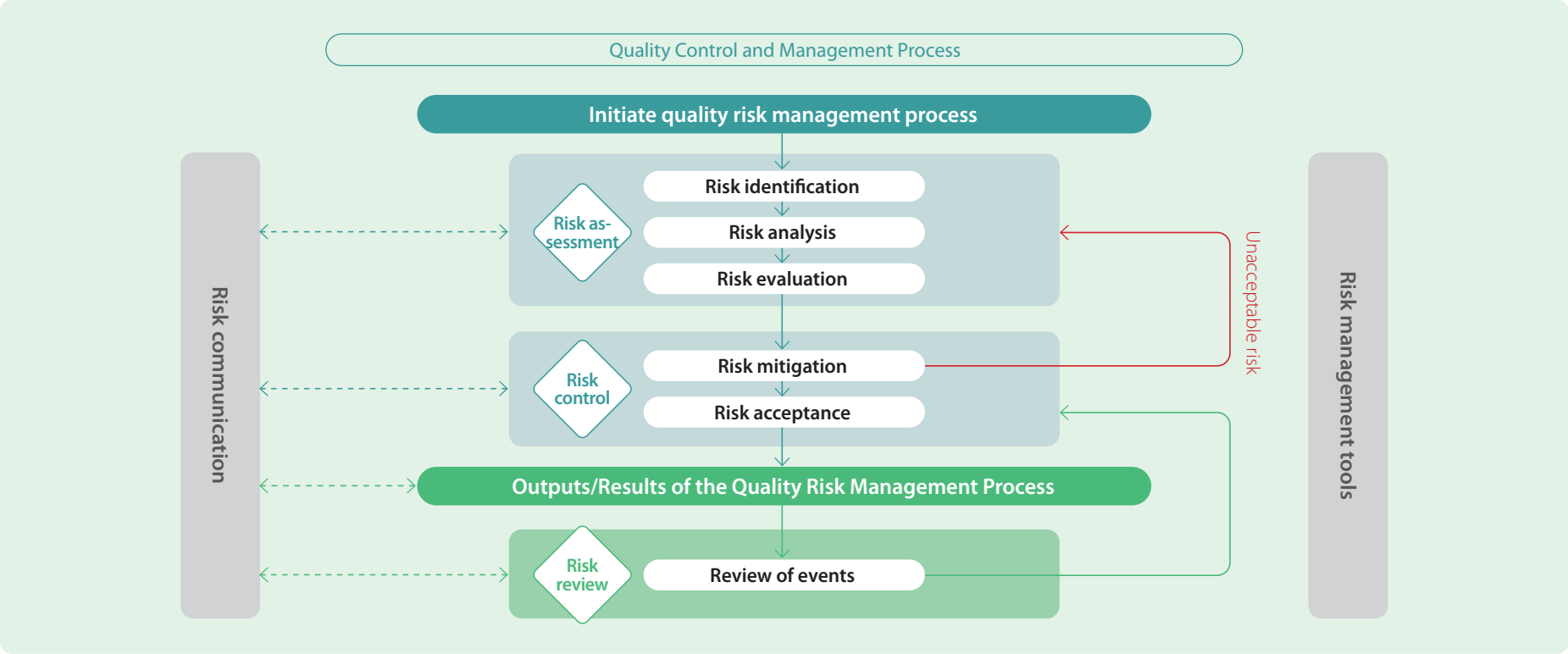
Every year, PharmaEssentia continually optimizes each stage of the manufacturing process. In recent years, in response to the demands of commercial-scale production, we have enhanced overall production capacity, mitigating risks in the production supply chain and ensuring stable supply.

Objective	Enhancing Production Capacity		
Improvement	Introducing Second and Third Material Sources	Establishing a Second Purification Production Line	Scaling Up the PEG Production Process Line
Goals and Results	In 2023, two new secondary material sources were established, while three others remained under testing. The introduction of this project serves to notably mitigate production risks and ensure pharmaceutical supply amidst significant global supply chain disruptions caused by international situations, pandemics, and extreme weather conditions.	Equipment and documentation setup is completed. Once the second production line is finalized, production capacity is expected to double.	Production testing is currently underway at an appropriate scale. Following the completion of the scaled-up PEG production process, production capacity is anticipated to increase by 4 to 8 times

Quality Control and Risk Management in Manufacturing Processes

PharmaEssentia's Taichung facility places significant emphasis on product quality and safety management. In 2023, a total of 925 GMP/GDP-related educational sessions were conducted, totaling 25,000 training hours. The facility is approved by multiple countries for GMP active pharmaceutical ingredients and formulation production, with 24 quality manuals, quality policies, and validation master plans established. There are 100 guiding SOPs and over 900 operational SOPs, along with more than 1,000 record forms. The organizational operational process is meticulously outlined, with Quality Assurance and Quality Control departments jointly responsible for managing and supervising the processes.

The 2023 monitoring trend report for the production environment (air conditioning), water systems, compressed air and biosafety operating cabinets shows that each system meets design requirements and regulatory specifications. Every year, through continuous education and training, employees can integrate the spirit of quality management into their daily operations, including training and updating the knowledge of GMP-related laws and regulations for colleagues in the factory, as well as comprehensive personnel training to ensure product safety. In consideration of emergencies, the Taichung plant has formulated the "Plant and Facility Emergency Response Management Standard" to implement the emergency response mechanism, so as to ensure the normal operation of the equipment and all personnel in a safe and secure environment when natural disasters and abnormal equipment hazards occur.



High-Quality Production Certification

Our Taichung facility is the first in Taiwan to pass the European Medicines Agency (EMA) inspection and receive Good Manufacturing Practice (GMP) certification for biopharmaceutical manufacturing. Since 2020, it has also undergone inspections by Taiwan's TFDA, South Korea's MFDS, the United States FDA, and Japan's PMDA, with no serious violations of relevant GMP regulations or health and safety laws found. Any non-serious deficiencies were promptly addressed within the specified timeframe through improvement preventive plans. In 2023, internal quality audits conducted at the Panco Logistics Center revealed quality system deviations, all of which were deemed non-significant and promptly addressed and closed

Internal Audit Frequency

- Conduct internal audits at least once a month (each department undergoes at least one random check per year).
- If any non-compliance issues are found during audits, corrective and preventive action (CAPA) plans must be submitted and completed within specified deadlines according to the severity of the deficiency.

External Audit Frequency

- Undergo and pass official periodic GMP inspections every 2 to 3 years.

Outsourced Manufacturing Management

In addition to filling and packaging operations at our sterile formulation filling plant in Taichung, our company also outsources filling and packaging to internationally certified contract manufacturing facilities in the United States, Germany, and Japan. This allows us to ensure proximity and supply locally to patients in the market and region. All contract manufacturing facilities are reputable partners that comply with and have official GMP certification.

Secure Distribution Process

Our secure distribution process strictly adheres to Good Distribution Practice (GDP) for pharmaceuticals, ensuring proper management of pharmaceuticals throughout the transportation process.

Package Insert and Packaging Printing → **Pharmaceutical filling, packaging, serialization, quality assurance, and other processes, the products are released.** → **Transporting Products to Third-Party Logistics** → **Delivering Products to Specialty Pharmacies or Distributors**

Secure and Stable International Logistics and Transportation

Inventory Distribution Operations System

To assure the safe and stable international transport, PharmaEssentia has established

1. "Storage and Distribution Policy" to create storage and distribution procedures, ensuring excellent storage conditions and management for raw materials, intermediates, and products.
2. "Product Distribution Management Procedure" adhering to PIC/S Good Distribution Practice (GDP) requirements has been implemented to establish distribution procedures and tracking mechanisms.
3. "Import and Export Transportation Management Procedure" has been set up to ensure compliant, fast, and safe delivery of all transported goods to designated destinations, effectively safeguarding patient medication safety.

- To address immediate disaster risks due to climate change in the United States, a safety stock level is maintained for over four months to ensure timely access to medication for patients in the country.
- The PharmaEssentia Logistics Center also complies with Taiwan's Good Distribution Practice (GDP) for pharmaceuticals. It assists in the supply of marketed and clinical products, with quality management throughout logistics, warehousing, labeling, and various operational processes. An "Emergency Response Handling Procedure" is in place to prevent or mitigate the negative impact of natural disasters on the facility's distribution operations.

Warehouse Management

PharmaEssentia has established "Product Receipt and Storage Management Operation Standards" and a "Storage and Distribution Policy" to ensure that neither the environment nor the operations have adverse effects on product quality. The Panco Logistics Center has a "Storage Area Temperature Verification Plan," conducting temperature verification twice every three years to ensure warehouse environmental quality.

Product receiving and storage process

Storage Application	Physical Verification	Conformity Confirmation	Confirmation of Storage	Medicine Storage
Storage of products requires submission of a "Product Storage Application" to warehouse management personnel.	Warehouse management personnel, along with quality assurance personnel, confirm and verify the physical product based on the information provided in the application.	The product labeling, including product name, code, batch number, required temperature, quantity, and container information, must match the details on the application form.	Ensure the product is properly sealed and packaged. Once the storage conditions are met, the product is stored accordingly.	During the storage period, the storage environment is monitored to ensure optimal conditions for medicine storage.

Quality Control in Shipping and Transportation

PharmaEssentia has established the "Product Shipping Operations Standards" to ensure that products manufactured at the Taichung production plant are fully prepared for shipment to contract manufacturers and storage facilities. This includes comprehensive pre-transport packaging operations to ensure effective transportation. The standards guarantee that pharmaceuticals are transported under prescribed temperature conditions to uphold global drug transport safety. This initiative reflects PharmaEssentia's commitment to operational excellence and risk management in its supply chain, aligning with ESG principles of environmental care and product responsibility.

Packing operation

- Confirm that the transportation box is clean and the temperature meets the product storage conditions, and place a temperature recorder in the box to monitor the temperature.
- Taking Ropeginterferon alfa-2b (P1101) as an example, it is necessary to ensure that the product is stored between 2℃~8℃

Quality control

transport process

- Based on the "Storage and Distribution Policy", establish appropriate storage and distribution procedures as quality goals
- Scenario simulation for pre-analysis: Confirm that the cooling status and equipment specifications meet the needs
- Regular verification: ensure that raw materials, intermediates and products can be stored well

3.3 Drug Safety Management and Patient Safety Monitoring

Materiality Assessment

GRI 417-1, 417-2 SASB HC-BP-250a.1~a.5

PharmaEssentia has established a comprehensive global pharmaceutical safety monitoring system, adhering to international drug safety monitoring regulations. The company continuously monitors the safety of newly marketed drugs post-launch. Additionally, PharmaEssentia persistently optimizes policies and internal standard operating procedures related to drug safety management to safeguard patient health and safety. In 2023, there were no incidents of non-compliance related to product service labeling or product recalls.

Materiality Assessment

Pharmaceutical Safety Management and Patient Safety Monitoring

Management Policies and Commitments

Patient Safety Monitoring: Diligently track adverse drug events and reporting channels, deeply embed the concept of "Quality First, Patient Safety" into the daily operations and lifestyle of all colleagues, and implement drug risk management to protect patient medication safety.

Responsible Team

- Product Safety & Risk Management (PSRM) Team composed of pharmacovigilance staff from PharmaEssentia headquarters and various international subsidiaries, along with pharmacovigilance quality assurance personnel, under supervision of Global Vice President of Pharmacovigilance and Executive Director.
- Quality of marketed drugs and clinical drugs is managed by the headquarters' Quality Assurance and Quality Control departments, in collaboration with the pharmacovigilance function team
- Sustainability Significant Themes: Managed by the Sustainability Development Center - Product Ethics and Safety team members.

Actions and Mythology

- Invested over 24 million New Taiwan Dollars in global pharmacovigilance activities.
- Since 2022, appointed a Global Vice President of Pharmacovigilance and a Global Executive Director of Pharmacovigilance, responsible for overseeing global pharmacovigilance efforts.
- Pharmacovigilance professionals are stationed at the Taiwan headquarters and each subsidiary or regional office.
- Contracted a pharmacovigilance CRO (Contract Research Organization) to form a project team that manages and maintains the BESREMi® drug safety data database, assisting in pharmacovigilance and the reporting/handling/exchange of information, as well as regulatory reporting in various countries.

Indicators and Objectives

- Implement all legal compliance requirements for the drug safety monitoring program, and report drug safety information within the timeframe set by regulations.
- Complete periodic safety reports for drugs post-marketing as required by regulations.
- Pharmacovigilance education and training.

2023 Performance

- According to requirements from the Taiwan Food and Drug Administration (TFDA), the pharmacovigilance plan was completed and submitted.
- PharmaEssentia headquarters and its subsidiaries achieved a 100% execution rate in reporting drug safety information within the regulatory timeframe.
- From February 2022 to February 2023, 92 serious adverse drug reactions were reported globally, with no violations of product and service health and safety regulations.
- As per regulations, completed and reported the fifth Drug Development Safety Report (DSUR) for BESREMi®, the fourth Periodic Safety Update Report (PSUR) for BESREMi® post marketing, and the first Periodic Safety Update Report for Tirbanibulin post marketing.
- Completed four quarterly safety signal monitoring reports and implemented ten Standard Operating Procedures (SOPs) related to pharmacovigilance.
- In 2023, conducted six pharmacovigilance training sessions for new employees, achieving a completion rate of 100%.
- In Taiwan, one pharmacovigilance training session was held, with a total of 311 participants and a total training time of 155.5 hours.

Management Review Mechanism

- Post-Marketing Safety Monitoring: According to the requirements of regulatory authorities in various countries, timely reports are issued and immediate reporting mechanisms are maintained in operational condition.
- Regular Safety Reports: Regularly submit "Drug Development Safety Reports" and periodic safety reports to regulatory authorities in different countries.
- Internal Auditing: Conducted by the Quality Assurance department or outsourced to an independent third party.
- External Audits: Inspections by international and domestic drug safety regulatory authorities.
- Evaluation of Immediate Reporting Mechanisms: Assess the functioning of the immediate reporting systems.
- Evaluation of Drug Safety Hotline Operations: Assess the operation of the drug safety hotline services in Taiwan, the USA, Korea, and Japan.

Our company's 'Pharmacovigilance Team' is part of the Medical Research Department, working in coordination with relevant responsible units according to the 'Pharmacovigilance Policy,' 'Drug Safety Functions and Training Standard Operating Procedures,' and 'Post-Marketing Safety Data Collection Standard Operating Procedures.' PharmaEssentia also complies with the 'Serious Adverse Drug Reaction Reporting Regulations' and 'Drug Safety Monitoring Management Regulations,' entrusting professional CRO companies to conduct drug safety monitoring.

Drug safety monitoring can be divided into passive and active monitoring:

1. Passive Monitoring

Legally required to periodically submit Periodic Safety Update Reports (PSUR) and collect spontaneous safety case reports from healthcare professionals and the public; safety information collected in reports is entered into the safety database system for further processing. In 2023, PharmaEssentia submitted the fourth post-marketing PSUR for BESREMi® to the Taiwan Food and Drug Administration without any incidents of non-compliance with product health and safety regulations or voluntary codes. Additionally, Tirbanibulin, licensed to PharmaEssentia by Athenex, was approved in 2022, and PharmaEssentia will continue to submit PSURs annually until 2028 as required.

2. Active Monitoring

Proactively conducts safety signal detection, monitors medical warnings and safety signals issued by advanced pharmaceutical countries, and performs literature reviews; additionally, it may actively gather information through clinical trial programs (Registration trial/IIT) and Patient Support Programs (PSP)

Pharmacovigilance Reporting Education and Training

According to our country's pharmacovigilance regulations, contracted research institutions are required to develop and implement drug safety management and regulatory reporting plans. Regular pharmacovigilance education and training sessions for employees are conducted, and all training records are preserved. In 2023, six training sessions for new employees on pharmacovigilance were held, as well as one company-wide pharmacovigilance training session. All new employees underwent pharmacovigilance reporting training within one month of their start date, achieving a 100% completion rate.

PharmaEssentia's headquarters and regional subsidiary leaders regularly meet with the contracted research institutions to ensure that the global drug safety information collection and reporting tasks are effectively carried out. In 2023, PharmaEssentia held 16 meetings to track and manage the pharmacovigilance mechanisms.

Taiwan's Adverse Drug Reaction Reporting Mechanism

After the marketing of drugs, adverse reactions occurring under general usage can be reported through the following channels:

- Medical professionals and the public can fill out the 'Post Marketing Adverse Drug Reaction Report Form,' report online after registering an account, or via email (adr@tdrf.org.tw).
- Pharmaceutical companies can report online through the system by selecting the 'Post Marketing Adverse Drug Reaction Report Form,' completing it, and submitting it.
- Upon receiving such reports, PharmaEssentia follows the 'Guidelines for Completing the Post Marketing Adverse Drug Reaction Report Form,' submits the reports through the online reporting system (https://adr.fda.gov.tw), or sends the completed form v ia email to the ADR Center at adr@tdrf.org.tw.

Safety Monitoring of BESREMi® in the United States

- The U.S. subsidiary, with the assistance of quality-certified third-party logistics, follows the Drug Supply Chain Security Act (DSCSA) regulations related to drug traceability. It submits Transaction History (TH), Transaction Information (TI), and Transaction Statements (TS) for auditing purposes.
- Additionally, there is a dedicated PEC U.S. Call Center serving the American market, managed by the U.S. subsidiary's medical affairs team. This center is responsible for handling all drug quality and safety needs and reporting messages. Regarding the product traceability mechanism, drug serialization was completed in 2020, and there have been no adverse drug recall incidents in 2023.

Pharmaceutical Risk Management Plan

PharmaEssentia implements the Drug Safety Risk Standard Operating Procedures formulated by contracted research organizations. Additionally, tailored 'Drug Risk Management Plans' are established according to the pharmaceutical safety monitoring regulations of each country to comply with local legal requirements.

According to regulatory requirements, after a drug is marketed, actual clinical data must be collected to assess whether long-term use by patients may result in chronic side effects. This serves as the basis for "Drug Risk-Benefit Assessment." The results of the 2023 Periodic Safety Report showed no new safety information that could affect the safety of BESREMi®. The company commits to continuously collect safety data from the countries where it is marketed, to update periodic safety reports and assess the risk-benefit of BESREMi®.

0

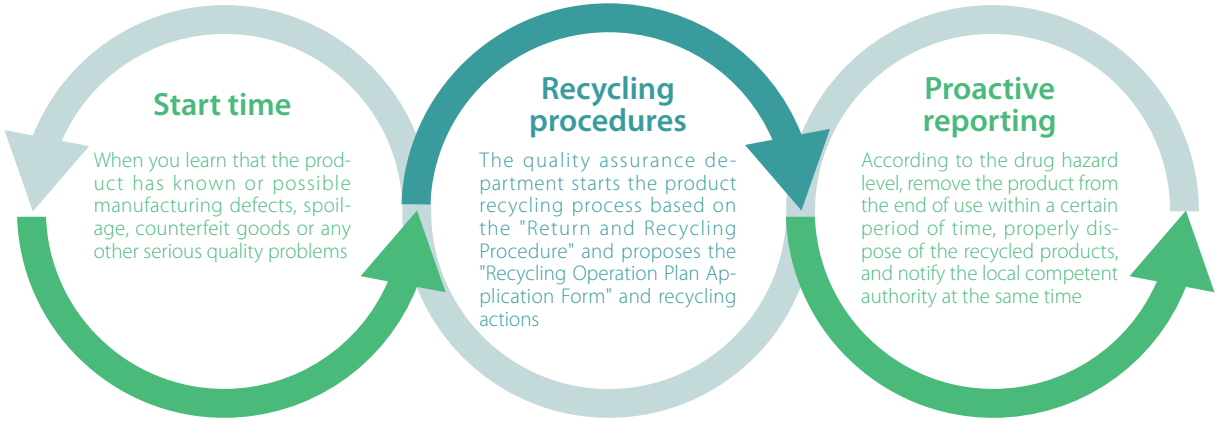
no post-marketing adverse drug recalls

Product Traceability Mechanism SASB HC-BP-260a.1

PharmaEssentia has established a product traceability mechanism across its global supply chain and has implemented drug serialization to standardize the packaging and serialization operations of contract manufacturers, achieving the goal of fully tracing individual product flows and usage records. BESREMi® sold in the United States has also fully implemented drug serialization. This is carried out by a qualified U.S. injectables filling contract manufacturer following the FDA's Drug Supply Chain Security Act (DSCSA) standards, ensuring drug quality and safety.

Drug Recall Mechanism SASB HC-BP-260a.2

PharmaEssentia's "Return and Recall Procedures" clearly specify a product traceability system to perfect the drug recall mechanism. This allows for the rapid and effective completion of drug recalls when product quality is in question, providing an additional layer of safety for patient medication. Annual mock recall drills are conducted to ensure the accuracy and proficiency of recall actions. In 2023, there were no incidents of adverse drug recalls.



3.4 Sustainable Supply Chain Management

PharmaEssentia constructs effective supply chain management through three major aspects, working collaboratively with suppliers and contractors to embody and practice sustainability principles, creating long-term and stable value for the pharmaceutical industry and patients.

Sustainability Declaration

- Mutual benefit and prosperity with supplier partners
- Communicating PharmaEssentia's sustainability principles and practices
- Advocating the "Supplier Code of Conduct" to all suppliers
- Inviting suppliers to sign the "Supplier Code of Conduct

Enhancement of Management Capabilities

- Facing a constantly changing world, the strategies to enhance management and response capabilities include:
- Information Mastery
- Strengthening Supply Chain Management Capabilities
- Enhancing Interaction with Suppliers

Establishment of Alternative Sources of Supply

- Identifying Critical Materials
- Screening Raw Material Candidates
- Quality Confirmation, Experimental Verification
- Trial Production
- QA Monitoring, Compliance with Regulations

1. Sustainability Declaration: Building a Sustainable Supply Chain

In 2023, we formulated the "Group Supplier Code of Conduct," which focuses on labor rights, workplace safety and health, environmental sustainability, and business ethics, aiming to set a positive example in the industry. This code was also signed by the chairman and published on our website. For the first time, we issued an ESG questionnaire to 20 suppliers in 2023; of these, 9 have published ESG reports, 7 are preparing ESG/CSR data collection, 3 do not yet have a corporate sustainability plan, and 1 lacks a clear understanding of ESG issues. PharmaEssentia hopes to continue conveying both formal and informal sustainability declarations to our supply partners to create a positive, long-term impact. In 2024, we plan to continue signing ESG agreements with suppliers, hoping to grow together, share benefits, and emphasize corporate sustainability responsibilities

Supplier/Contractor Management Process

GRI 2-6, 204-1 | SASB HC-BP-260a.1 | SASB HC-BP-430a.1

PharmaEssentia's Quality Assurance department has established the "Supplier Management Standards" and "Supplier Management Procedures" as the approval process and operational standards for suppliers and outsourced service contractors. This involves strict monitoring of the selection, evaluation, and approval of raw material, material, and equipment/instrument suppliers to ensure that the supplied raw materials and equipment meet our company's standards for quality, delivery schedules, and Good Manufacturing Practices (GMP). We also require suppliers to sign a "Quality Agreement" to ensure a mutual understanding of product and quality requirements. All vendors required to sign the quality agreement have done so 100%

New Suppliers/Contractors

GRI 308-1, 308-2, 414-1, 414-2

PharmaEssentia is committed to the environmental and social impacts of our supply chain. In addition to the indicators of quality systems, technical capabilities, and service and support, in 2023, we introduced environmental and social standards into our supplier selection process and conducted regular supplier performance evaluations. In 2023, 87 new suppliers/contractors were added, of which 73 were local, representing 83.91% of the total.

Environmental Standards

1. Compliance with Applicable Environmental Regulations: Adhere to all applicable environmental laws, follow relevant operational standards, and meet reporting requirements.
2. Waste Management: Ensure that the treatment, transportation, storage, recycling, reuse, and management of waste, exhaust gases, and wastewater comply with regulations.
3. Resource Use and Recycling: Minimize resource consumption by implementing resource use and recycling measures.
4. Biodiversity Conservation: Commit to no deforestation, land conservation, and the goal of Zero Net Deforestation.
5. Climate Commitment: Reduce greenhouse gas emissions and fulfill the commitment to achieve carbon neutrality.

Social Standards

1. Commitment to Providing an Acceptable Living (Working) Environment for Laborers.
2. Prohibition of Forced Labor: It is not permissible to deprive or restrict the personal freedom of laborers.
3. Freedom of Association and Collective Bargaining Rights.
4. Maintenance of Employee Health and Safety.
5. Guarantee of Minimum Wage, Overtime Hours, and Statutory Benefits.
6. Humane Treatment of Employees: Free from any form of sexual harassment, physical punishment, mental or emotional abuse, and verbal violence.
7. Anti-Discrimination.
8. Prohibition of Child Labor.

Management by Supplier Category

To improve supplier management efficiency, PharmaEssentia headquarters and Panco define suppliers who transact directly with PharmaEssentia as first-tier suppliers, based on risk and procurement amount. PharmaEssentia and Panco also define GMP suppliers that cannot be easily replaced as key suppliers. We manage suppliers according to these two dimensions. Our supplier classification is as follows:

Supplier Category	Tier 1 (Number of Suppliers)	Non-Tier 1 (Number of Suppliers)	Total
Key	107	61	168
Non-Key	221	40	261
Total	328	101	429

For PharmaEssentia's subsidiary in the United States, supplier qualification follows the American procedure SOP-QA-003 Supplier Qualification (GMP) and SOP-QA-009 External Audit Results. In 2023, there were a total of 8 Tier 1 suppliers in the United States, all qualified for critical first tier GMP supplier criteria. Suppliers have passed quality inspections in both the United States and Taiwan.

Supplier Category	Number of Supplier	%
All Tier 1 Suppliers	8	100%
Key Tier 1 Suppliers	8	100%

Supplier/Contractor Risk Assessment and Due Diligence

We conduct an annual assessment of our trading partners, which includes evaluating: product or service quality, capability in handling exceptions and improvements, completeness and timeliness of documentation, on-time delivery rate, emergency order responsiveness, service satisfaction, price stability, and ESG performance score, totaling 8 criteria. PharmaEssentia places particular emphasis on the delivery of raw materials, as shortages can significantly impact our manufacturing processes and research and development progress. Therefore, we strictly require suppliers to ensure supply and quality reliability.

In terms of supplier management at our Taiwan headquarters, criteria for assessing supplier risk include:

1. Whether they are critical suppliers, or provide materials or services directly related to patients or trial participants.
2. Whether the materials or services provided are used in pilot production, clinical trials, or commercial production stages.
3. High impact of the materials or services provided; changing suppliers could significantly impact research and development or manufacturing.
4. Low substitutability of the materials or services provided, including factors such as single sourcing or patented technology.
5. Large annual procurement volume or high monetary value.
6. High impact of environmental, governance, or social factors on the materials or services provided, which could affect supply continuity or regulatory compliance.

In 2023, among the evaluated 419 suppliers, 4% were classified as high risk, 74% as low risk, and 22% as medium risk.

Year	2022		2023	
Risk Leve	Number of Suppliers	%	Number of Supplier	%
Low Risk	148	49%	309	74%
Medium Risk	41	14%	94	22%
High Risk	12	4%	16	4%
Total	301	100%	419	100%

Note: Risk level assessment includes PharmaEssentia Taipei and Taichung. Risk levels are categorized as follows: The Taichung plant categorizes per GMP quality management standards (Minor, Major, critical). In Taipei headquarter, the risk levels are categorized into: High risk: meeting 3 or more of the above criteria; Medium risk: meeting 2 or 1 of the above criteria; Low risk: not meeting any of the above criteria.

Supplier Management Mechanism

PharmaEssentia's Management Strategies for Suppliers/Supplied Products with Different Risk Levels are as follows:

Risk Level	Management Mechanisms for Suppliers
High Risk	1. Strategic Alliances: Actively strengthen alliances with suppliers for mutual benefit and symbiosis. 2. Maintain good interaction with suppliers to establish strong cooperative relationships. 3. Evaluate Total Cost of Ownership (TCO): Assessing performance metrics such as service scope, quality, and timelines. 4. Signing contracts to ensure service quality, content, and sources. 5. In-house production (or reprocessing) 6. Ensure stability of the supply source 7. Maintain good interaction with suppliers and utilize service information provided by them. 8. Develop new suppliers and alternative sources (Second source) to mitigate risks of material shortages
Medium Risk	1. For materials used frequently, request suppliers to maintain inventory to facilitate timely delivery. 2. Integrate procurement items and departmental needs. 3. For materials with monopolistic competition, actively request and compare prices. 4. Analyze item prices and costs.
Low Risk	1. Implement routine procurement, following and maintaining the appropriate procurement procedures. 2. Centralize ordering quantities and frequencies

Annual Evaluation of Suppliers/Contractors

Our company conducts annual evaluations of suppliers/contractors according to the Supplier Audit Procedures, using a combination of internal review and on-site audits. In the case of high-risk suppliers, the re-evaluation frequency may be shortened, and improvement actions taken. If significant deficiencies are identified, procurement activities will be immediately suspended. In 2023, internal review assessments were completed 100% for all 188 suppliers, and the on-site audit plan included a total of 20 domestic and international suppliers (including 2 remote audits of foreign suppliers), all of which were completed 100%. During the supplier on-site audit, it was found that one supplier violated labor standards, and the supplier was requested to make improvements.

Remediation Procedures for Negative Impacts GRI 2-25, 2-26

PharmaEssentia regularly conducts environmental and social regulatory audits of suppliers. When deficiencies are found, relevant units conduct investigations and inquiries. In 2023, regarding the supplier violation of labor standards mentioned above, a supplier due diligence investigation was conducted, and follow-up actions to address the identified improvement areas were tracked. By the end of 2023, the tracking results showed that the supplier had been acquired and merged into another company.

100%

Completed the signing of supplier quality agreement and internal assessment for 5 consecutive years

2. Supply Chain Management and Resilience Enhancement

PharmaEssentia continues to enhance supply chain management and contingency capabilities, maintaining safety stock levels, establishing alternative material sources, and balancing cost considerations with long-term material reserves to rapidly respond and avoid disruptions to the supply chain from events such as the COVID-19 pandemic or other emergencies. Actively reducing the risk of material shortages that cannot be timely and stably supplied. The following are the internal supplier management tasks:

1. Monitor potential factors affecting the supply chain (diseases, climate change, natural disasters, etc.).
2. Strengthen supplier management adaptability and contingency capabilities.
3. Deepen communication with suppliers, monitor the status of material transportation in real-time, and obtain complete information on transportation logistics.
4. Update the time of arrival for supplier raw material purchases.
5. Increase safety stock levels, understanding changes in demand from frontline medical institutions and patients.
6. Pay attention to the situation in the countries where raw materials are produced, assess the risk of material shortages, and respond in advance.
7. Establish alternative material sources to reduce the risk of material shortages.

3. Establishing Alternative Material Sources

To prevent risks due to unforeseen events, we follow internal SOP and conduct comprehensive investigations into raw materials and determine importing priority of alternative sources.

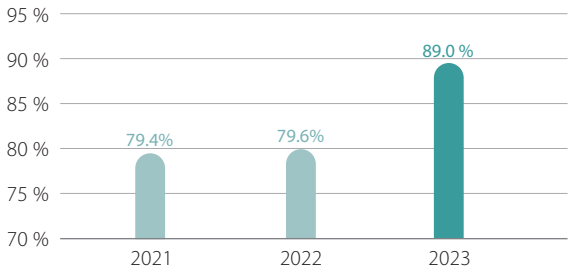
Inventory of Raw Materials Requiring the Establishment of Alternative Sources	Performing Quality Assurance Checks	Process Development Experimental Validation	Quality Assurance Continuous Monitoring
The following criteria are used for assessment: • Manufacturer notification of impending discontinuation. • Regulatory agency requirements. • Conducting material risk assessment based on the "Criticality Assessment of Materials" procedure.	Continuing Quality Assurance Checks for Materials at Immediate Risk of Supply Disruption	Upon successful trial production, raw materials passing the test enter the GMP control procedures (supplier assessment, specification inspection, method establishment, etc.). After completing the relevant procedures, they are added to the backup list	The Quality Assurance department continuously monitors testing data and documentation at all stages of material source development to ensure compliance with regulatory standards throughout the entire process.

Local Procurement

In 2023, the proportion of purchases from local suppliers in Taiwan increased to 89%, while the expenditure on purchases from non-local suppliers was 11%. This increase is primarily attributed to the capital expenditures associated with the expansion of the new manufacturing facility in Zhubei. PharmaEssentia, rooted in Taiwan but with a global perspective, prioritizes the development of local partnerships and continues to assess opportunities to increase the proportion of local procurement.

	Year	2021	2022	2023
Local Procurement	Taiwan (%)	79.4%	79.6%	89.0%
Non-local Procurement	Americas (%)	20.5%	20.4%	11.0%
	Other Asia (%)	0.1%	0	0
	Total	100%	100%	100%

Local Procurement Percentage



89%

Proportion of local procurement amount

4 Sustainable Environment

Chapter Highlights

TCFD	Continued Alignment with Government
3%	2023 Environmental Cost Investment Growth Rate
ISO 14064-1	Taichung Plant Completes 2022 Third-Party GHG Verification
-42%	Reduction in GHG Emission Intensity
-52.3%	Decrease in Energy Consumption Intensity
1.7%	Reduction in total energy consumption with installation of new equipment at Taichung Plant
-33.3%	Reduction in Total Waste Intensity
6.62 million liters	Taichung Plant Process Water Recycling and Reuse
0 violations	No Leakages and Pollution Emissions

At PharmaEssentia, our mission is "Better science, Better lives." We strive to enhance lives through continuous scientific advancement, and we embrace the same spirit in our environmental protection efforts. In 2018, we first introduced our Environmental, Health, and Safety Policy, clearly defining our goals to protect the environment and prevent disasters. Our pharmaceutical manufacturing processes require the use of energy, water, and raw materials. Thus, we are committed to reducing the negative environmental impacts throughout the product lifecycle and across our supply chain. To monitor our progress, we regularly track indicators such as greenhouse gas emissions, water usage, and waste.

4.1 Environmental Impact and Management in Production Processes

Materiality Assessment

Materiality Assessment

Environmental Impact and Management in Production Processes

Impact Assessment

PharmaEssentia is a research-driven biotechnology company with its R&D and manufacturing bases in Taiwan. We have sales operations spread across Europe, America, Japan, Singapore, China, and Korea. In each market, we collaborate with local suppliers to cover various aspects of our operation, including drug packaging, warehousing, and transportation. Through our comprehensive management systems, we strive to minimize the environmental impact throughout the product development, production, and transportation processes.

Management Policies and Commitments

In 2018, PharmaEssentia first introduced its Environmental, Health, and Safety Policy aimed at ensuring the safety and health of our employees and protecting the environment to prevent disasters. Our environmental management during the production process is governed by various documents, including Greenhouse Gas Management Procedures, Waste Management Procedures, and Chemical Hazard Management Procedures. Additionally, to reduce the environmental impact, we plan to implement the ISO 14001 Environmental Management System in 2024 to further enhance our environmental management efficiency and reduce the negative environmental impacts of our production and operational processes.

Responsible Departments

- Taipei HQ: Occupational Safety and Health Promotion Team
- Taichung Plant: GHG Inventory Promotion Team (GHG Promotion Team)
- Key ESG Material Topics: Managed and coordinated by members of the Sustainability Development Center - Eco-Friendly Team

Indicators and Objectives

- No Environmental Non-Compliance Issues: Confirms the absence of any violations or non-compliance incidents related to environmental regulations.
- Waste Reduction and Recycling: The recycling rate for the year 2023 and beyond. This highlights efforts towards reducing waste generation and enhancing recycling initiatives.

Ensuring Effective Action

- Internal Audits: For example, we conduct irregular audits of waste management vendors and review our internal waste classification and storage management processes. We also regularly assess the waste output intensity of different units to ensure continuous improvement.
- External Verification: We adhere to environmental regulatory authority laws by implementing routine legality checks on required projects to ensure compliance.
- Quarterly Engagement: We engage in regular advocacy meetings with the Taichung City Environmental Protection Bureau, the Central Taiwan Science Park Administration, and neighboring factories. These meetings are conducted to foster dialogue and collaboration, typically through communication meetings and other consultative formats.

3%
2023 Environmental Cost Investment Growth Rate

2023 Performance

- Education and Training:
  - ISO 14064-1 Internal Auditor Certification: As of 2023, a total of 27 employees have achieved certification as ISO 14064-1 internal auditors.
  - TCFD/Greenhouse Gas Inventory Training Hours: In total, 106 participants have completed 282 hours of training.
  - Toxic and Concerned Chemical Substances Response Training - General Awareness Level: Four individuals have successfully obtained certification.
  - Regulatory and Policy Training: Designated personnel have participated in training sessions on regulations and policies conducted by supervisory authorities, including environmental lectures and seminars.
  - Emergency Response and Rescue Training: Conducted training for emergency response personnel on the use of rescue protective equipment and annual disaster response drills to enhance the disaster response skills of operational staff.
- No Emission Pollution, Zero Leakage Violations.
- Increased Recycling of Waste Foam and Glass: Statistics for recycling waste foam and glass were included in 2023.

Future Planning

- New Plant Construction at Hsinchu Biomedical Science Park: A new facility is being established with an application for green building certification. Groundbreaking began in 2022, with completion expected by 2025.
- ISO 14064-1 Internal Auditor Certification: Plans for 2024 include training two employees to obtain the ISO 14064-1 internal auditor certificate.
- Increased Environmental Budget: For 2024, an environmental budget of NT$3.1 million has been allocated.
- Implementation of ISO 14001 Environmental Management System: The introduction of this system includes setting environmental management indicators, focusing on pollution control and greenhouse gas emission intensity targets.
- Comprehensive Construction of the TCFD Framework and Internal Risk Management Integration.
- Enhanced Environmental Budget by 14%: This increase will fund new air pollution control equipment to reduce the emission of air pollutants, including hazardous air pollutants.
- Pollution Prevention: Achieved zero violations in pollution control.
- Seeking evaluation from waste manufacturers in 2024 to introduce Solid Recovery Fuel (SRF) utilization and improve waste reuse efficiency.

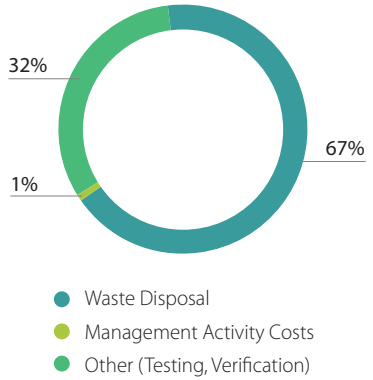
Environmental cost expenditure statistics

At PharmaEssentia, the potential environmental impacts of our operational activities primarily stem from energy use, water resources, and waste management. In 2023, the total investment in environmental costs amounted to NT$2.72 million, which represents a 3% increase from the previous year. The highest cost was attributed to waste management, totaling NT$1.817 million. This increase was mainly due to expanded production capacities.

Item	2023 Cost Expenditure (NT$)	Proportion (%)
Waste Disposal	1,817,126	67%
Management Activity Costs	21,600	1%
Other (Testing, Verification)	881,771	32%
Total	2,720,497	100%

In addition to annual environmental cost expenditures aimed at ongoing energy conservation and carbon reduction to minimize environmental impact, in March 2023, new energy-saving equipment such as air compressors was purchased. This equipment collectively saved approximately 87,300 kWh of electricity, reducing energy consumption by about 1.7%.

Environmental cost statistics



Environmental Management Indicators

As part of our environmental management, we focus on waste management and greenhouse gas reduction as key performance indicators. We aim for continual improvement in these areas each year.

Items	Waste management	Energy Use and GHG Inventories		
Management Indicators	Waste Intensity (tons/million NT$)	Electricity Savings (%)	Energy Intensity (GJ/million NT$)	GHG Emission Intensity (t CO_2e/million NT$)
2022 (Actual)	0.009	1.2	11.28	1.48
2023 (Actual)	0.006	1.7	5.38	0.86
2023 Target	<0.01	≥1	≤5	<1
Short-Term Target (2024)	<0.01	≥1	≤5	<1
Mid-Term Target (2025-2027)	<0.01	≥1	≤5	<1
Long-Term Target (2030)	<0.01	≥1	≤5	<1

4.2 Climate Action

TCFD

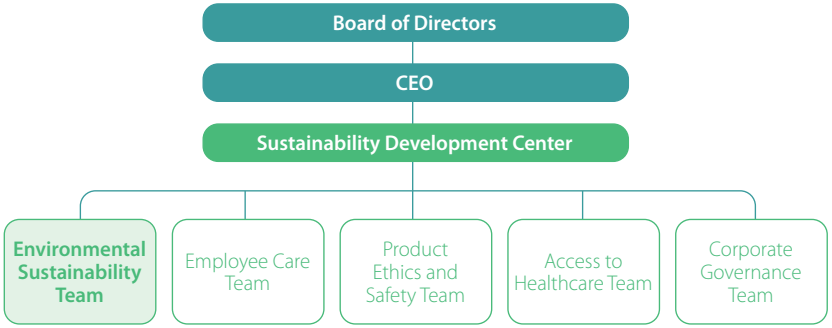
Continued Alignment with Government

Under the impact of global climate change, businesses face significant challenges. The risks and opportunities brought about by climate change can have substantial impacts on corporate value chains. In 2017, the Financial Stability Board (FSB) introduced guidelines from the Task Force on Climate-related Financial Disclosures (TCFD), aimed at providing businesses with guidance to identify climate-related risks and opportunities. PharmaEssentia first adopted the TCFD guidelines in 2022 to identify climate-related risks and opportunities and in 2023 further assessed the financial impacts of these risks and opportunities under different scenarios according to these guidelines. Additionally, we initiated the ISO 14064-1: 2018 organizational greenhouse gas inventory to address and adapt to climate change from a carbon management perspective. Below, we describe PharmaEssentia's climate actions and efforts in four areas as guided by the TCFD: climate governance, strategy, risk management, and metrics and targets.

Governance: Board and Senior Management Oversight and Management of Climate Issues

The Board of Directors is the highest climate governance body at PharmaEssentia, overseeing and formulating strategies related to climate change from a sustainability perspective and responding to domestic and international net-zero commitments. The Board authorizes the Sustainability Development Center and the Eco-Friendly Team to promote various climate change management activities. Execution units include the EHS (Environmental, Health, and Safety) department and other relevant departments such as R&D, production, logistics, warehousing, and engineering, each with specific tasks. The EHS department conducts bi-weekly meetings/factory affairs meetings to report progress on various projects to senior management. Every quarter, a representative from the Sustainability Development Center reports overall ESG project progress to the Board. Plans are in place to implement ISO 14001 in 2024 to establish an environmental management system.

PharmaEssentia Climate Governance Organization



- **Board of Directors:** Oversees and develops strategies related to climate governance.
- **Sustainability Development Center:** Drives and manages actions for responding to and adapting to climate change, and regularly reports outcomes to the Board of Directors.
- **Eco-Friendly Team:** Executes various action plans.

Strategy: PharmaEssentia's Global Climate Strategy

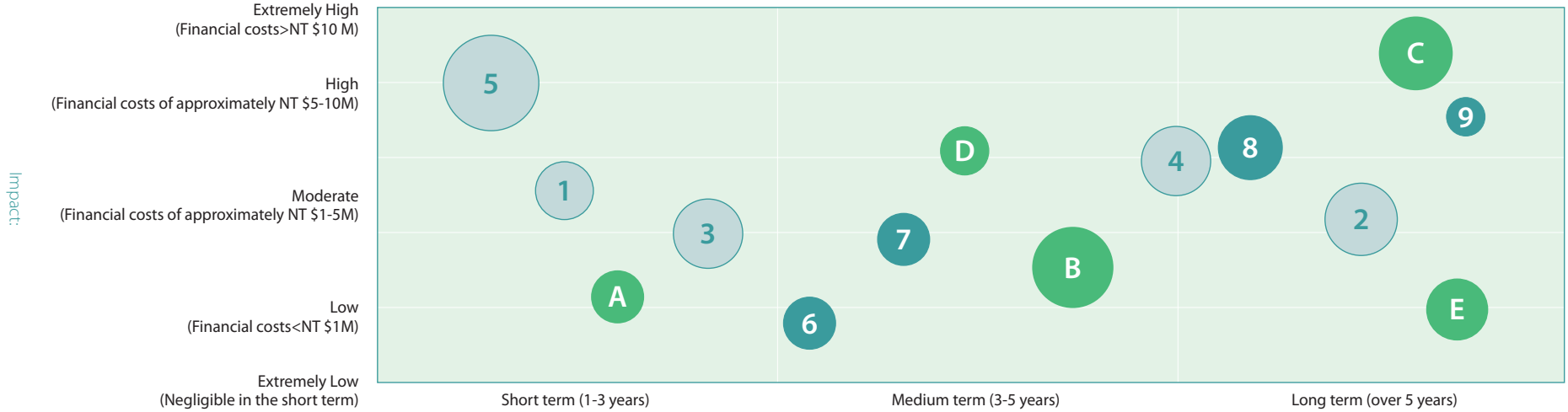
To assess the short-, medium-, and long-term impacts of climate-related risks and opportunities on organizational operations, the PharmaEssentia Sustainability Development Center, in collaboration with external consultants, conducts interviews with managers and surveys to discuss and identify climate-related risks and opportunities with relevant department heads. Through departmental discussions, proactive solution development is undertaken.

In terms of physical risks, we have assessed that our main operational sites are at low to very low risk of operational disruptions caused by extreme weather conditions due to climate change, as considerations for risks such as flooding or drought were made during the site selection process. In 2023, a natural disaster in the U.S. market caused a temporary disruption in transportation, but fortunately, it did not impact operations. Going forward, the company will closely monitor the impact of climate-related risks on operational activities and adjust inventory levels accordingly.

Regarding transition risks, our country has legislated the target of net-zero emissions by 2050, and enhanced obligations for carbon emission reporting and carbon charges are likely short-term risks. Additionally, PharmaEssentia has proactively aligned with financial regulatory requirements by completing greenhouse gas inventories and verifications ahead of schedule. We also plan to implement the ISO 14001 Environmental Management System starting in 2024 to strengthen enterprise management of environmental and energy resources.

According to international studies, climate change may increase the incidence of contagious diseases or cancer-related illnesses. PharmaEssentia will closely monitor this trend and invest in research resources to address unmet market needs potentially arising from climate change. Furthermore, our new facilities have applied for green building certifications, which are expected to yield carbon reduction benefits due to improved resource efficiency.

Short-, Medium-, and Long-Term Climate Risk and Opportunity Matrixs



Transition Risks

1. GHG Management and Carbon Fees
2. Legislative Requirements for Renewable Energy Usage Ratios
3. Legislative Requirements for Phased Net-Zero Carbon Emission Targets
4. Uncertainty in New Energy-Efficient and Carbon Reduction Technologies
5. Raw Material Supply Shortages

Physical Risks

6. Extreme Weather Causing Floods
7. Extreme Weather Causing Droughts
8. Temperature Increases
9. Sea Level Rise

Climate-Related Market Opportunities

A. Carbon Reduction Benefits from Improved Resource Efficiency
B. Emerging Business Models in the Low-Carbon, Energy-Saving Trend
C. Market Opportunities Arising from Solutions to Diseases Caused by Climate Change
D. Adoption of More Efficient Buildings
E. Investment in Renewable Energy or Participation in Carbon Trading Markets

Note: Financial costs are estimated based on the price levels of 2023 and existing data. Different assessments may arise under varying temporal and spatial conditions. The size of the circle represents the financial cost.

PharmaEssentia's climate risk management strategy focuses on managing and adapting to short-term (1-3 years) high-impact climate risks; through management actions, we aim to mitigate the immediate and medium-term impacts and plan for potential climate-related opportunities. We have identified high-impact short-term climate risks including "#5. Raw Material Supply Shortages" and "#1. Greenhouse Gas Management and Carbon Fees," as well as preparations needed in response to "#3. Legislative Requirements for Phased Net-Zero Carbon Emission Targets." These three are prioritized for management.

Furthermore, medium to long-term climate risks such as "#2. Legislative Requirements for Renewable Energy Usage Ratios" and "#4. Uncertainty in New Energy-Efficient and Carbon Reduction Technologies" are expected to materialize in the medium to long term. We will initially observe these risks and reassess whether immediate management is necessary in future annual evaluations.

Regarding climate-related opportunities, "A. Carbon Reduction Benefits from Improved Resource Efficiency" has been identified as a relevant opportunity at our Taichung facility. We have already planned updates to energy-saving equipment and are implementing energy-saving devices at new plant locations.

Scenario Analysis

We assess the impact of different scenarios on climate-related risks and opportunities, as well as possible response strategies for PharmaEssentia. We have considered three scenarios proposed by the Intergovernmental Panel on Climate Change (IPCC) under Representative Concentration Pathways (RCPs): RCP2.6, RCP4.5, and RCP8.5. Based on existing climate data for Taiwan, we estimate the effects on PharmaEssentia's major manufacturing sites under these scenarios.

- RCP2.6 represents a scenario with very low radiative forcing, aiming to limit global warming to within 2 degrees Celsius above pre-industrial levels, which is considered a mitigation scenario.
- RCP4.5 is a scenario of moderate stabilization.
- RCP8.5 represents a high greenhouse gas emissions scenario, assuming that no efforts are made to reduce greenhouse gas emissions globally.

RCP 2.6	RCP 4.5	RCP 8.5
Taiwan (Taichung Plant)	Taiwan (Taichung Plant)	Taiwan (Taichung Plant)
Average Temperature Increase, 2031-2050: 0.3~2.1°C	Average Temperature Increase, 2031-2050: 0.7~2.4°C	Average Temperature Increase, 2031-2050: 1.0~3.1°C
Average Precipitation, 2031-2050: -5.3~12%	Average Precipitation, 2031-2050: -4.7~13.6%	Average Precipitation, 2031-2050: -7.7~13%
Scenario: The increase in temperatures could result in higher ambient temperatures around the factory; due to extreme weather conditions, the probability of droughts or intense rainfall could increase, but the impacts and scale are less severe under controlled temperature rise.	Scenario: An increase in temperatures could raise the ambient temperature around the factory, potentially reducing production efficiency. Extreme weather conditions, such as droughts or sudden heavy rains, could lead to flooding.	Scenario: Under conditions of extremely high temperatures and increased variability in annual rainfall, the impacts of extreme weather become more pronounced. Droughts or floods could lead to power outages or operational disruptions at the factory, necessitating higher costs for improvements.
Responses: • PharmaEssentia itself: The factory is located in a science park, where the risk is relatively low. • Supply Chain: Alerts are set up for potential delivery delays caused by natural disasters, with plans to establish secondary and tertiary sources of supply.	Responses: • PharmaEssentia itself: The factory is currently located in a science park, where the risk is relatively low. • Supply Chain: Measures are in place to alert for potential shipment delays due to natural disasters, with contingency plans involving the establishment of secondary and tertiary sources of supply.	Responses: • PharmaEssentia itself: In addition to strengthening PharmaEssentia's own disaster prevention capabilities under extreme climate conditions, it is necessary to enhance disaster preparedness drills and business continuity plans for both the supply chain and transportation routes. • Supply Chain: Alerts are in place for potential shipment delays caused by natural disasters, with contingency plans involving the establishment of secondary and tertiary supply sources, and even changing materials or reconfiguring the supply chain.

Data Source: TCCIP - Taiwan Climate Change Projection Information and Adaptation Knowledge Platform

Transition Risk Scenarios

In terms of transition risks, PharmaEssentia evaluates scenarios using the "Shared Socioeconomic Pathways" (SSPs) assessment methodology proposed in the IPCC's Sixth Assessment Report (AR6). This approach helps assess the potential scenarios related to climate change transition risks.

Low-Risk Scenario

Scenario Description Projected Temperature Increase by the End of the Century:

SSP1-1.9 Pathway

Projected Temperature Increase by the End of the Century:

1.4 degrees Celsius

Orderly Global Transition to Net Zero by 2050

Explanation of Transition Risks:

Gradual Implementation of Climate Policies Starting in 2021: Climate policies are being implemented step by step.

Impact on PharmaEssentia:

For PharmaEssentia, Based in Taiwan:
Given that the government has already legislated the 2050 net-zero target, PharmaEssentia will follow national objectives to set phased carbon reduction targets.
PharmaEssentia has already completed the ISO 14064-1: 2018 organizational greenhouse gas inventory and will use these results to plan further carbon reduction initiatives.

Moderate-Risk Scenario

Scenario Description Projected Temperature Increase by the End of the Century:

SSP1-2.6 Pathway

Projected Temperature Increase by the End of the Century:

1.6 degrees Celsius

Delayed Implementation of Transition: A gradual approach is taken towards shifting policies and technologies.
Global Achievement of the Paris Agreement's Sub-2 Degrees Celsius Target

Explanation of Transition Risks

Urgent Implementation of Climate Policies Starting in 2031.

Impact on PharmaEssentia:

PharmaEssentia will monitor the implementation at each operational site according to local market conditions.

High-Risk Scenario

Scenario Description Projected Temperature Increase by the End of the Century:

SSP4-6.0 Pathway

Projected Temperature Increase by the End of the Century:

>3 degrees Celsius

No Additional Carbon Reduction Measures
Countries Maintain Existing Policie

Explanation of Transition Risks

Status Quo, No New Policies Issued: There is no introduction of new climate policies, maintaining the current approach.

Impact on PharmaEssentia:

PharmaEssentia will monitor the implementation at each operational site according to local market conditions.

Financial Impact Analysis of Climate Change

Considering the above climate-related risks and opportunities and their impact on organizational operations, PharmaEssentia is actively formulating response and adaptation measures to enhance climate resilience. In 2023, the company implemented the ISO 14064-1: 2018 organizational inventory process, laying a solid foundation for future carbon management capabilities.

Category	Transition Risks		Physical Risks
Content of Risk/ Opportunity ! Risk factors ☆ Opportunity factors	! GHG Management and Carbon Fee Levies ! Legislative Requirements for Renewable Energy Usage Ratios ! Legislative Requirements for Phased Net-Zero Carbon Emission Targets ! Uncertainty in New Energy-Saving and Carbon Reduction Technologies	! Raw Material Shortage Pressures	! Extreme Weather Leading to Flooding ! Extreme Weather Leading to Drought ! Temperature Rise ! Sea Level Rise
Potential Financial Impact ⊕ Potential Opportunity ⊖ Potential Cost	⊖ Increased Operational Costs Due to Carbon Management: Introduction of carbon taxes in international markets and the levying of carbon fees and energy-related taxes in Taiwan have led to increased operational costs. ⊖ Investment in Renewable Energy Planning and Equipment Leads to Higher Costs, ⊖ Investment in Energy Efficiency and Carbon Reduction Resources: Allocating resources to inventory, verify, and disclose organizational greenhouse gas emissions, extending further to include the carbon footprint of products throughout their lifecycle, also increases operational costs.	⊖ Material Shortages and Increased Transportation Costs Due to Climate Change: Climate change causing raw material shortages or increased transportation costs.	⊖ Operational Interruptions Due to Natural Disasters: Natural disasters leading to operational disruptions or exceeding existing emergency response measures, impacting production, causing financial losses, and decreasing revenue. ⊖ Natural Disasters (e.g., Snowstorms in the USA): May lead to shipment delays or damage to local operational equipment and personnel injuries, increasing operational costs. ⊖ Natural Disasters Disrupting Raw Material Supply: Interruptions in raw material supply due to natural disasters can hinder production operations and disrupt product transportation, affecting operational revenue. ⊖ Costs Associated with Insurance and Flood Prevention Measures: The company mitigates financial losses due to property damage via insurance and increase costs for installing flood prevention measures at facilities. ⊖ Increased Energy Use or Cold Chain Costs Due to Rising Temperatures: Long-term temperature increases may lead to higher energy usage in facilities or increased costs in the transportation cold chain.
Explanation of Financial Impact Assessment	▶ Carbon Fee: The annual estimated CO_2e emissions of PharmaEssenia are less than 5,000 metric tons. With a carbon fee set at NT$300 per metric ton, the annual cost will increase by NT$1.5 million. ▶ GHG Inventory: Each plant is gradually implementing management systems and inspection procedures, with an estimated annual cost not exceeding NT$3 million. ▶ GHG Inventory Reduction, Energy Portfolio, and Efficiency Enhancement: Further assessment is needed to evaluate the costs associated with emission reduction and energy efficiency improvements across various factory sites.	▶ Due to the stringent requirements of Good Manufacturing Practice (GMP) for pharmaceutical ingredients, thorough inspections and certifications are necessary at each stage. The cost increase of raw materials is difficult to predict. To mitigate this, early procurement or increased inventory will be implemented. It is estimated that costs will increase by 10% to 20%, resulting in an annual increase of over NT$10 million in procurement costs.	▶ The Taichung plant has measures in place to sustain operations for approximately three to four weeks in case of water shortage. Therefore, production is unlikely to be affected, and the additional financial costs incurred under this scenario are minimal. ▶ In the event of natural disasters disrupting transportation, the current safety stock should be able to sustain operations for three to six months. Consequently, the additional financial costs incurred under this scenario are minimal. ▶ Further evaluation is needed to assess the long-term financial implications of increased energy usage or transportation costs due to rising temperatures. ▶ Actively pursuing pharmaceutical approvals in various regions worldwide to diversify climate-related risks associated with regional climate conditions. ▶ Commitment to diversifying production bases and enhancing the sourcing and preparation of raw materials.

Category	Climate-Related Opportunities	
Content of Risk/ Opportunity ! Risk factors ☆ Opportunity factors	☆ Carbon Reduction Benefits from Improved Resource Efficiency: Enhancing resource efficiency to reduce carbon footprint. ☆ Adoption of More Efficient Buildings: Using higher efficiency buildings to decrease energy consumption. ☆ Market Opportunities from Investing in Renewable Energy or Participating in Carbon Trading Markets.	☆ Market Opportunities from Investing in Renewable Energy or Participating in Carbon Trading Markets: Engaging in renewable energy projects or carbon trading to capitalize on market trends. ☆ Emerging Business Models Under Low-Carbon, Energy-Saving Trends: Innovating new business models that align with the shift towards energy conservation and reduced carbon emissions. ☆ Market Opportunities Arising from Solutions to Climate Change-Induced Diseases: Developing solutions for diseases exacerbated by climate change to meet emerging healthcare needs.
Potential Financial Impact ⊕ Potential Opportunity ⊖ Potential Cost	⊖ 2024 Estimated Equipment Replacement: The anticipated cost is projected to be under NT$5 million. ⊕ Potential Carbon Assets from Carbon Management: This includes benefits derived from carbon credits.	⊕ Potential Carbon Assets from Carbon Management: Benefits derived from carbon rights, potentially increasing the company's value through enhanced sustainability practices. ⊕ Investment in Climate-Related Disease Solutions: Potential market opportunities from developing solutions for health issues exacerbated by climate change.
Explanation of Financial Impact Assessment	▶ Further assessment is required to evaluate the benefits generated from reducing emissions and enhancing energy efficiency across various factory sites. ▶ Commitment to Decreasing Energy Intensity and minimizing reliance on energy resources.	▶ There are currently no specific data available to estimate the financial benefits of emerging solutions.

In response to the financial assessment above, we have categorized climate-related risks and opportunities into the following issues. Key strategies and departmental responses of PharmaEssentia Pharmaceutical are outlined below:

Category	Transition Risks		Physical Risks
Climate-Related Risks and Opportunities	GHG Emission Control · GHG Inventory and Reduction · Energy Portfolio and Efficiency Enhancement	Raw Material Management	Strengthening Emergency Response Capabilities at Plant Sites due to Extreme Weather Events such as Hurricanes and Floods, which can lead to operational disruptions.
Key Strategy of PharmaEssentia	Enhancing GHG Emission Control Capabilities at PharmaEssentia; Continuously Implementing: (1) GrHG Inventories at each operational site. (2) Setting phased targets for greenhouse gas reduction (3) Evaluating the benefits of achieving interim actions towards carbon neutrality or net zero by 2050, considering the cost and benefits of carbon management.	• In terms of raw material management, we will increase the registration of raw material sources and evaluate new suppliers. • In future research and development, we will incorporate considerations of climate change impacts to provide more options.	• Regularly assess the contingency capabilities of the plant sites, provide risk alerts and identification, and enhance emergency response capabilities at the plant sites. • Construction of a new plant in Zhubei: PharmaEssentia will adopt green building standards for the construction of a new plant in the Zhubei Industrial Park, and has prepared for climate risks and impacts. • Regularly enhance climate resilience and response capabilities at PharmaEssentia's global operational sites through education, training, and internal process improvements.
Departmental Responses	• **Production/Environmental Safety Department:** Utilizes the "Environmental Policy" as an internal guideline for preventing and addressing environmental impacts and has established the "Greenhouse Gas Management Procedure Manual." The primary production base, the Taichung Plant, serves as the first site to conduct greenhouse gas inventory operations. We have completed the inventory operations for the year 2022 and undergone third-party verification. We will continue to progress along the path of carbon reduction, achieving phased reduction targets through improvements in resource efficiency in existing facilities.	• **Procurement:** Conduct assessments based on material categories and geographical sources to increase sourcing contingency plans; seek green supply chains; or request carbon reduction from the top five suppliers by annual transaction amount. • **Research and Development:** Reduce environmental impact by incorporating concepts of biotechnology and digital transformation, including: · Reducing materials (reagents/solvents/reducing the use of toxic substances, etc.) · Energy usage and temperature control at each stage of equipment/production methods/processes/storage, transportation, and preservation · Use of environmentally friendly and recyclable materials (lightweight, thin, short) • **Production:** Depending on the situation, move towards automated production.	• **Environmental Safety:** Evaluate the potential impact and corresponding emergency response measures; increase assessment frequency. The Taichung plant has established the "Emergency Response Management Standard for Plant Facilities" to implement emergency response mechanisms. In the event of natural disasters or equipment abnormalities, ensure normal equipment operation and conduct process operations in a safe environment for all personnel. • Overall, we will cooperate with the Central Taiwan Science Park and Hsinchu Science Park to prevent and manage physical risks.

Category	Climate-Related Opportunities	
Climate-Related Risks and Opportunities	Enhancing Resource Efficiency.	Meeting Unmet Medical Needs.
Key Strategy of PharmaEssentia	• Evaluate the resource efficiency improvements resulting from equipment updates or replacements. • Assess the benefits of installing renewable energy or participating in carbon trading markets.	• Diseases resulting from climate change will become a key focus of future biopharmaceutical industry research and development. PharmaEssentia will continue to monitor this trend and assess the feasibility of addressing unmet needs related to climate-related diseases and PharmaEssentia's R&D direction. • PharmaEssentia also undertakes other projects requiring cold chain transportation services. Currently, plans are being devised on how to provide more efficient transportation methods or containers to increase additional services or revenue.
Departmental Responses	• Our Taichung plant's future plans involve replacing high-energy-consuming equipment (such as air compressors and chillers) to improve energy efficiency. • Planning for an energy monitoring system, optimizing steam process control, and waste heat recovery. • The new plant in Zhubei plans to apply for green building certification, aiming to obtain subsidies for green buildings and reduce the organization's carbon emissions.	• The Research and Development Department, in collaboration with the Sustainability Development Center, the Access to Healthcare Team, and the Product Ethics and Safety Team, will jointly be included as regularly monitored topics.

Risk Management

Climate Risk Identification and Assessment Process

In addition to the risk management mechanism described in section 2.3, which categorizes different types of risks and implements corresponding measures to reduce their impact on the company, this section will further explain the company's management mechanism and actions regarding climate risks, which have been gradually introduced in accordance with the TCFD framework guidelines:

Risk Governance Unit

The board of directors serves as the highest supervisory and decision-making unit for risk management. Through its audit committee, audit department, and corporate governance department, it assists in supervising, controlling existing or potential risk issues to reduce company risks or early positioning, minimize negative impacts, and avoid financial losses. Additionally, the board of directors assigns senior management to be responsible for promoting and operating various issues, implementing risk management through regular management supervision.

Risk Management Policies and Practices

The company establishes internal risk management policies, procedures, and internal control systems in accordance with relevant regulations to properly manage all risk issues, impact items, and corresponding highly material topics. Annually, the board of directors approves the company's overall risk management goals and policies, assigns senior management to be responsible for the promotion and operation of various issues, and continuously ensures the effective operation of risk management mechanisms through regular supervision.

Climate Risk Management Process

We consider climate-related risk management policies, actual assessment practices, and pre-response measures to mitigate the impact of climate risks on operations. We began conducting major operational risk assessments, including the assessment process for climate risks within environmental risks, education and training, and implementation of specific practices to address various risks in each department starting in 2023. These assessments are expected to be conducted regularly each year to ensure a thorough understanding and timely adaptation to changes in these risks, and to develop relevant reduction management methods and measures as needed as well as risk management objectives and policies as needed, and to continue to implement and supervise the effective operation of the risk management mechanism.

Indicators and Targets

In the biotechnology industry, the main response to climate change is primarily focused on carbon reduction. In order to achieve the above goals, PharmaEssentia strives to reduce carbon emissions at each stage. We have already implemented the ISO-14064-1 Greenhouse Gas Inventory Standard, conducting regular inventories of greenhouse gas emissions at each operational site and managing climate-related key indicators. In 2023, we also disclosed inventory data for Scope 3 emissions for the first time. In the future, we will continue to assess whether updates to response plans are needed based on annual climate risk evaluations and actions. We will actively engage in research in areas related to climate change-induced diseases, striving to find more solutions from the source through pharmaceutical research and development.

ESG Matters	Carbon Management	Rising Costs of Raw Materials	Severity of Extreme Weather Events such as Hurricanes and Floods
Response Measures	**Scope 1, Scope 2, and Scope 3 Greenhouse Gas Emissions and Associated Risks** • PharmaEssentia's primary source of greenhouse gas emissions is Scope 2, from purchased electricity. In 2023, Scope 1 and Scope 2 emissions were less than 5,000 metric tons of CO_2e. • Regarding greenhouse gas emission policies, the company aims to align with the national target of net-zero by 2050 and the National Development Council's goal of reducing overall emissions by 24% by 2030.	• Tracking Raw Material Usage through the Indicator of Material Consumption per Revenue: This metric is used to monitor the use of raw materials in relation to business turnover.	• Regular Assessment of Facility Response Capabilities: Periodic evaluations are conducted to enhance risk warning and identification, increasing emergency response capabilities at the facility. • New Facility Construction in Zhubei Factory: PharmaEssentia is constructing a new facility in the Zhubei Park using green building standards and has made preparations for climate risks and impacts.
Indicators and Objectives	• Carbon Intensity (t CO_2e per NT$ Million)	• Raw Material Consumption per Revenue • Enhancing Resilience: Reducing the risk associated with raw material procurement due to environmental impacts.	• Regular Implementation of Emergency Response Measures
Risk Governance Unit	• Carbon Intensity of 0.86 (t CO_2e/NT$ million), down by 42% vs 2022 • For details on carbon emissions and the calculation of carbon intensity, please refer to 4.3 Energy Management	• 0.30 g/NT$K in 2023, lower than 0.50 g/NT$K in 2022	• Cooperate with Taichung Science Park to carry out preventive measures • Assess and adjust the level of safety stock in the U.S. market

4.3 Energy Management

ISO14064-1
Taichung Plant Completes 2022 Third-Party GHG Verification

-42%
Reduction in GHG Emission Intensity

The largest source of GHG emissions for PharmaEssentia is from Scope 2 purchased electricity, primarily due to the need for temperature control during the drug production process. Therefore, energy use and GHG emissions are closely managed. In 2023, following the global commercialization of major new drugs, overall sales volume and production increased, leading to a rise in total electricity consumption. However, energy intensity and greenhouse gas emission intensity decreased by 52.3% and 42% respectively compared to the previous year.

PharmaEssentia Taichung Plant - GHG Emissions Statistics for the Past Three Years

Category	ISO 14064-1	Definition	2019 (base year)	2020	2021	2022	2023 (Unaudited)
Scope 1	Category 1	Direct Energy	707.23	503.21	510.95	569.55	692.39
Scope 2	Category 2	Purchased Electricity from TPC	3055.00	3094.32	3029.61	3037.27	2905.97
Scope 3	Category 3	Transportation Related (Upstream + Taichung to Other Countries, Commuting + Attendance) No Downstream Transport	822.80	814.53	785.36	657.79	105.18
	Category 4	Indirect Emissions from Raw Materials/Services					669.86
Total		Total: CO_2e (ton-CO_2e)	4585.03	4412.06	4325.92	4264.60	4374.40
Carbon Intensity Trends (CO_2e)		Revenue (NT$ million)	305.69	557.26	656.51	2,882.04	5,105.62
		GHG Emission Intensity (tCO_2e / NT$ million)	15.00	7.92	6.59	1.48	0.86
		YoY Change	-	-47%	-17%	-78%	-42%

Note 1: The data in this table are specific to the PharmaEssentia Taichung Plant.
Note 2: The greenhouse gases included in the inventory are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).
Note 3: The statistical method used is the 'emission factor method'. The emission factors for purchased electricity follow the carbon emission factors announced by the Bureau of Energy, Ministry of Economic Affairs, with the factors for 2021 and 2022 being 0.509 ($kgCO_2e$/kWh) and 0.495 ($kgCO_2e$/kWh), respectively. Emission factors for CO2 equivalents of natural gas are based on the Global Warming Potential (GWP) of various GHGs as reported in the IPCC AR6 (2021).
Note 4: Intensity is measured by total annual sales revenue (million NT$) as a metric for usage density and emission intensity.
Note 5: This is the first time Scope 3 emissions are disclosed separately by category.

GHG Emissions Analysis

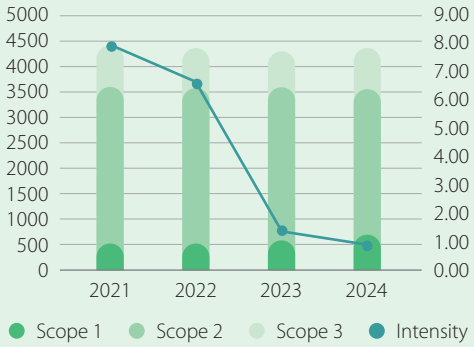
GRI 305-1~305-4

The main production facility in Taichung has implemented the ISO 14064-1: 2018 Organizational Inventory Management System. As of the end of 2023, the Taichung plant has obtained the 2022 SGS verification certificate. Additionally, the greenhouse gas inventory operations for 2023 have been completed, with external verification expected to be passed in Q3 of 2024

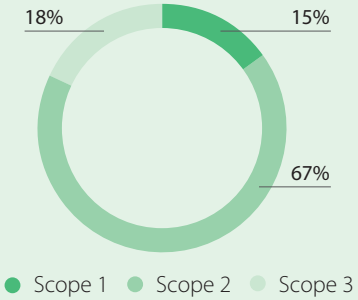

SGS
Greenhouse Gas Verification Statement
PharmaEssentia Corporation
Taichung Plant
ISO 14064-1:2018

Historical Carbon Emissions

Historical Carbon Emissions and Intensity Changes



Distribution of Scope 1-3 Emissions in 2023



Energy Use Analysis GRI 302-1, 302-3 CSA 2.3.1

Our company's energy consumption primarily consists of purchased electricity and natural gas. To comply with Good Manufacturing Practice (GMP) standards, which require maintaining a certain level of cleanliness even during non-production periods, our company has implemented various energy-saving actions. These include investing in suspended ice water chillers and variable frequency drive air compressors to achieve energy savings. As of 2023, the total energy consumption has shown a year-over-year declining trend, with energy intensity decreasing by 52.3% compared to the previous year.

-52.3%

Decrease in Energy Consumption Intensity

PharmaEssentia and Panco - Energy Consumption Statistics for the Past Three Years

Item	Year	2020	2021	2022	2023
Purchased Electricity	Renewable Energy Use (GJ)	0	0	0	0
	Non-Renewable Energy Use (GJ)	24,839.53	27,277.60	23,454.71	19,165.49
Natural Gas	(GJ)	8,395.93	7,339.11	9,045.06	8297.21
Petroleum	(GJ)	-	-	19.58	9.56
Total	Total Energy Consumption (GJ)	33,235.46	34,616.71	32,519.36	27,472.26
Intensity	Energy Intensity (GJ/million NT$)	59.64	52.73	11.28	5.38
	Revenue (million NT$)	557.26	656.51	2,882.04	5,105.62
	YoY Changes	-	-11.6%	-78.6%	-52.3%

Note 1: Energy consumption data includes PharmaEssentia and Panco.
Note 2: Starting in 2022, petroleum (including diesel and gasoline) was added to the statistics.
Note 3: Intensity is measured by the total annual sales revenue (million NT$) as a metric for usage density and emission intensity.

2023 Energy Conservation and Carbon Reduction Achievements GRI 302-4 GRI 305-5

At the Taichung plant, new energy-saving equipment was purchased in March and June 2023, including variable frequency drive air compressors and suspended ice water chillers. These investments resulted in savings of 87.3kWh of electricity, equivalent to a reduction of 43.2135 tones of CO_2e (approximately 314.2 GJ of energy), accounting for a total energy consumption reduction of about 1.7%.

1.7%

Reduction in total energy consumption with installation of new equipment at Taichung Plant

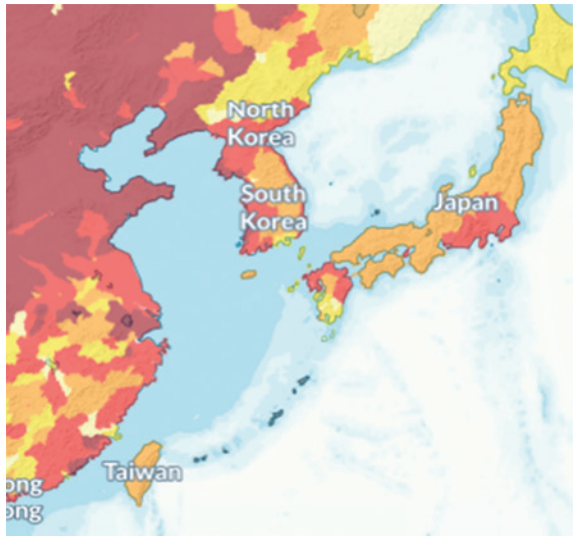
4.4 Water Stewardship

Impact Assessment and Water Resource Risks

GRI303-3, 303-4, 303-5, 304-1 CSA 2.5

PharmaEssentia's production base is located in the Central Taiwan Science Park, Taichung Park. According to statistics, the daily water supply capacity of the Central Taiwan Science Park is 107 million liters, while the Taichung factory of PharmaEssentia withdraws 0.04 million liters per day, which represents a proportion of 0.037%. This level of water use does not have a significant impact on the community.

Furthermore, risk identification conducted using the Water Risk Assessment Tool developed by the World Resources Institute (WRI) indicates that all operational sites of the company are located in areas with low to medium water stress.



Data Source: World Resources Institute (WRI)

Water Intake and Discharge

Although our company's operations do not consume large amounts of water resources, we implement measures to conserve water. Our main production facility, the Taichung Plant, is located within the Taichung Science Park, where the water source is municipal water (third-party freshwater), and the discharge is managed through the Taichung Park's wastewater treatment plant. In compliance with the regulations of the Ministry of Environment, water quality monitoring of the discharge is conducted biannually by an inspection agency authorized by the Environmental Protection Administration, ensuring adherence to the environmental standards set by the Environmental Protection Administration and the Central Taiwan Science Park of Taichung.

Operational Site Nankang Software Park Phase II	Water Source	Water Supplier	Usage		Discharge Point	
			Manufacturing Process	Domestic Use	Wastewater Treatment Plant	Surface Water Bodies
Nangang Software Park Phase II	(Tamsui River Basin)	Municipal Water		✓		
Taichung Plant	(Yongheshan, Mingde, Liyutan, and Deji Reservoirs)	Municipal Water	✓	✓	✓	
Panco (Shimen Reservoir)	(Shimen Reservoir)	Municipal Water		✓		

Water Pollution Control and Wastewater Discharge Management Indicators CSA 2.5.6

The Taichung plant conducts water quality monitoring of its discharge water every six months. The testing is performed in accordance with the standards set by the Ministry of Environment and carried out by an Environmental Protection Administration-approved laboratory. In 2023, all tests met the regulatory standards. The discharged water is properly treated at the Central Taiwan Science Park, Taichung Park's wastewater treatment plant before release, complying with the wastewater treatment system standards for pharmaceutical manufacturing set by the Central Taiwan Science Park Administration. The water quality of the discharge in 2023 met all controlled discharge criteria and limits, with no significant environmental pollution concerns.

Facility Area	Taichung Plant - Operations Center	Taichung Plant - Manufacturing Center
Discharge Handling	Regulated Discharge	Regulated Discharge
Tested Parameters	None	pH, COD, BOD, SS, Water Temperature, True Color, Free Residual Chlorine
Discharge Standards, Source of Standards (Environmental Indicators, Followed Regulations)	Taichung Park Sewerage Discharge Standards	Taichung Park Sewerage Discharge Standards
Discharge Location	Commercial Building	Junhao Factory Area

Water Recycling and Reuse

At the Taichung plant, water recycling and reuse are enhanced through the reclamation of reverse osmosis brine and wastewater, which are redirected into the cooling towers of the air conditioning system to improve the efficiency of water resource cycling. In 2023, a total of 6.62 million liters of water were recycled.

6.62 million liters

Taichung Plant Process Water Recycling and Reuse

PharmaEssentia Water Resource Statistics Table

(in million liters)

Location	2020			2021			2022			2023		
	Intake	Discharge	Consumption	Intake	Discharge	Consumption	Intake	Discharge	Consumption	Intake	Discharge	Consumption
Taipei HQ	10	-	10	7.78		7.78	7.38		7.38	7.63		7.63
Taichung Plant	15.64	9.46	5.18	15.1	5.6	10.5	18.11	9.13	8.98	14.13	5.74	8.39
Panco	0	0	0	0	0	0	0	0	0	1.4		1.4
Total	25.64	9.46	15.18	22.88	5.6	18.28	25.49	9.13	16.36	23.16	5.74	17.42

4.5 Air Pollution Control and Compliance GRI 305-6, 305-7

PharmaEssentia adheres to regulatory requirements for air pollution control. We do not use or emit ozone-depleting substances (ODS) regulated under the "Montreal Protocol," nor do we release any persistent organic pollutants (POPs). Compliance with the Environmental Protection Agency's standards includes regular testing and reporting of stationary air pollution sources. Testing is outsourced to Jichuan Environmental Technology Co., Ltd., an EPA-approved agency, conducted as per regulatory intervals. The test results show that air pollutant emissions are below legal limits, and there were no violations of environmental regulations in 2023.

Despite an increase in total production in 2023 due to global commercialization and sales demand, the emissions of volatile organic compounds (VOCs) have risen but still remain below the legally prescribed emission levels.

PharmaEssentia Air Pollutant Emissions Statistics Table for the Past Four Years

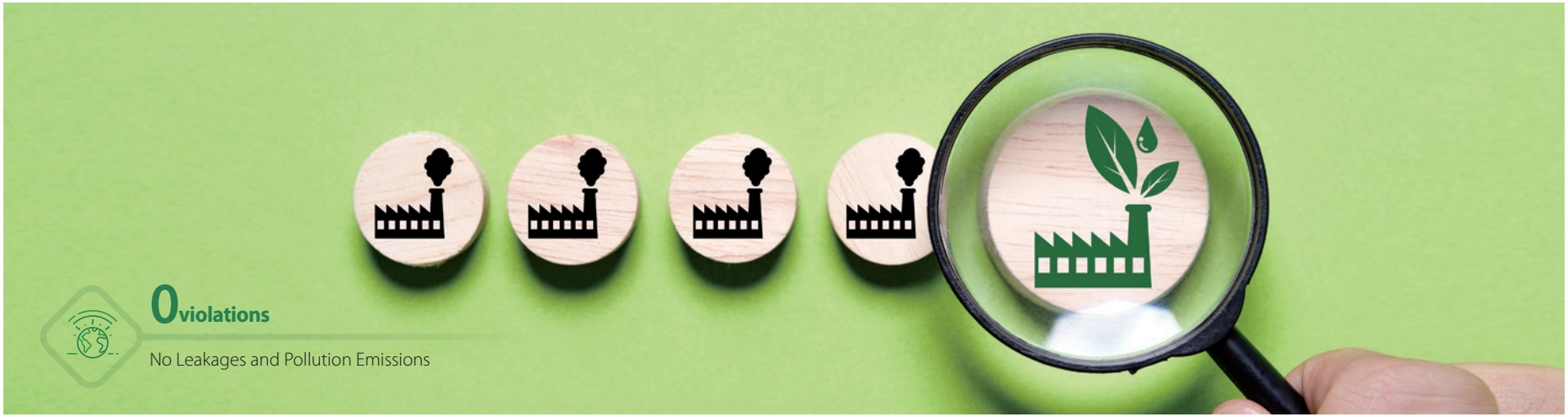
(units: kg)

Air Pollutant	(NOx)	(SOx)	(VOCs)	(HAP)	(PM)	(HCl)
2020	415.70	29.60	13.30	NA	7.00	-
2021	352.41	0	734.31	168.54	14.77	-
2022	444.2	34.0	9.3	434.2	7.8	0.1
2023	425.7	32.3	17.1	607.9	7.4	0.2

Notes1: The data in this table are specific to the PharmaEssentia Taichung Plant; Panco Medical does not emit the air pollutants listed in this table.

Notes2: Nitrogen oxides (NOx), sulfur oxides (SOx), and particulate matter (PM) were not tested in 2022; figures are estimated based on 2020 data. From 2022, statistics for hydrochloric acid have been included.

Notes3: The 2022 data for hydrochloric acid was corrected from 93.4 to 0.1 due to a data entry error.



4.6 Waste Management

PharmaEssentia primarily produces general business waste from operations, including a small amount of chemicals used in R&D and laboratory experiments. The company strictly adheres to legal regulations for waste management to avoid any potential legal issues or risks of environmental pollution. Additionally, PharmaEssentia actively keeps abreast of environmental regulations, promoting waste reduction from the research phase, adjusting process designs, and improving material usage efficiency to achieve environmentally friendly practices.

Waste Output and Disposal GRI 306-1~2

PharmaEssentia examines waste output, elimination, treatment, and recycling from a lifecycle perspective, meticulously recording input materials and waste output. Waste disposal is outsourced to qualified third-party waste treatment firms.

Input & Output

Input Characteristics

Waste Originating from Manufacturing, Quality Control (QC) Analysis, and Laboratory R&D Work: This includes a small amount of hazardous waste comprising toxic substances used in experiments and infectious waste. Initially, these wastes undergo high-temperature sterilization within the factory and laboratories, after which they are considered as general waste. However, to ensure compliance with regulatory control measures, they are subsequently treated as infectious waste for disposal.

Activity Records

Detailed Recording of Toxic Chemicals: Usage and inventory of toxic chemicals are meticulously recorded, along with the statistics on waste output. In 2023, the total waste generated was 33.8 metric tons, an increase from the previous year due to the rise in production batches.

Impact Assessment

Production and QC Inspection in Accordance with Pharmacopeial Standards: Operations in the manufacturing area and QC inspections adhere to pharmacopeial standards and Good Manufacturing Practices (GMP). The materials used, including those containing toxic substances, cannot be substituted arbitrarily, and practices are in place to prevent reuse within the processes that could contaminate and affect the quality of subsequent pharmaceutical products. Efforts are made to manage waste from the back end of the process to minimize environmental impact.

Disposal & Monitoring

Categorized Disposal

Disposal Categorized by Waste Type: Disposal processes are categorized according to the type of waste, including hazardous waste, infectious hazardous waste related to biological medical activities, solid/liquid hazardous waste, and non-hazardous waste, ensuring each type is handled appropriately to mitigate environmental impact.

Multifaceted Monitoring

- Waste Management Contractors: The waste disposal contractors engaged by our company are legally registered as Class A or B waste removal/treatment providers. Operations are conducted using a "three-party check and balance operation," which involves completing stamps from PharmaEssentia, the waste transporter, and the final treatment facility before final reporting on the Environmental Protection Administration's official website. This process is essential to manage and control the final direction of waste disposal.
- Annual Vendor Audits and Inspections: We conduct annual audits of our contractors (during the removal/treatment processes) and accompany them on visits to ensure that waste management is carried out flawlessly. Throughout these audits, there have been no instances of contractors violating legal regulations.

Waste Output Volume GRI 306-3, 306-4. 306-5

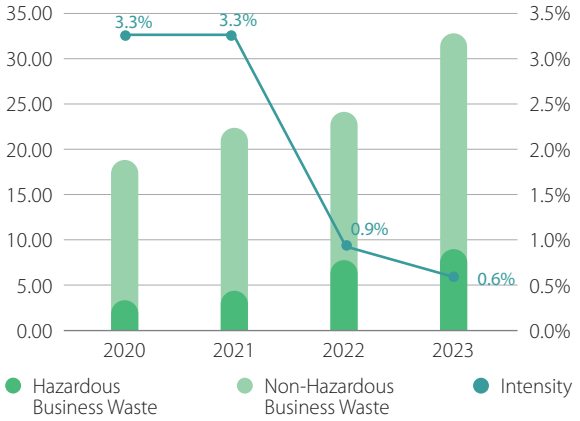
As PharmaEssentia's global footprint expands, our capacity and efficiency continue to improve. We persistently focus on reducing waste volume and enhancing the efficiency per unit of output to decrease the intensity of waste generated. Following short-term, medium-term, and long-term goals and action paths, we refine our management policies and implement concrete actions. The intensity of total waste generation has decreased year over year, with a reduction of 33.3% in 2023 compared to the previous year.

PharmaEssentia (Taipei + Taichung) Waste Statistics for 2023

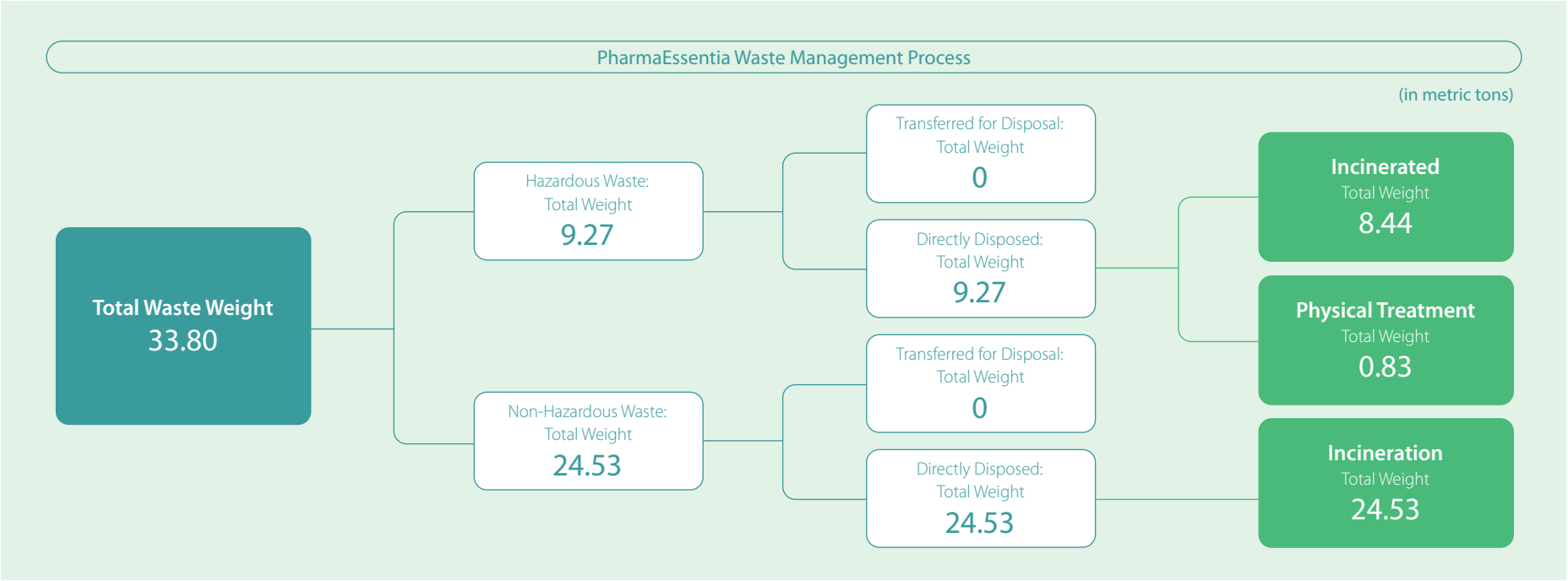
(in metric tons)

Category	Subcategory	Total	Rate	Recycled	Recycling Rate	Landfilled	Landfill Rate	Incinerated	Rate	Total
Non-Hazardous Business Waste	None	24.53	72.57%	0.00	0.00%	0.00	0.00%	24.53	72.57%	100%
Hazardous Business Waste Total Waste Output Category	Biomedical	1.97	5.82%	0.00	0.00%	0.00	0.00%	1.97	5.82%	100%
	Organic Effluents	6.47	19.15%	0.00	0.00%	0.00	0.00%	6.47	19.15%	100%
	Non-Organic Effluents	0.83	2.46%	0.00	0.00%	0.83	2.46%	0.00	0.00%	100%
Total Business Waste		33.80	100.00%	0.00	0.00%	0.83	2.46%	32.97	97.54%	100%

Historical Total Waste Volume and Intensity



Note: The above data includes both Taipei and Taichung facilities. The calculation method for intensity is total waste volume divided by the annual revenue (in million NTD).



Material Management in Production and Packaging

The Taichung facility operates as a GMP (Good Manufacturing Practice) compliant plant. To meet regulatory requirements, many materials used in various operational processes are disposable, especially in the packaging of semi-finished or finished products, to prevent cross-contamination and protect the products. The packaging materials used are not reused. In 2023, the main non-renewable materials used during production were disposable process bags, accounting for approximately 87.7% of all materials. Renewable materials primarily consisted of paper boxes and inserts used for packaging.

	2021	2022	2023
Renewable Materials (Metric Tons)			
Packaging Materials (Paper Boxes/Inserts) (FP)	0.05	0.08	0.1
Non-Renewable Materials (Metric Tons)			
Disposable Consumables for Processes (FP)	0.04	0.09	0.09
Packaging Materials (Blister Packs/Syringe Labels/Plungers/Safety Needles) (FP)	0.05	0.09	0.1
Disposable Process Bags	0.54	1.26	1.35
Total	0.63	1.44	1.54

4.7 Management of Toxic and Concerned Chemical Substances

PharmaEssentia uses a limited number of environmentally regulated toxic and concerned chemical substances in its R&D and production processes (including machine cleaning). Therefore, we focus particularly on source control by properly classifying and storing each chemical substance, implementing documented control of usage, tracking the flow of chemicals, and preventing environmental pollution and harm to human health. In 2023, there were no incidents of chemical or waste leakage.

Classification and Control of Toxic Substances

We classify substances according to the "Management Law of Toxic and Concerned Chemical Substances," storing regulated toxic substances in laboratory fume hoods by category. Due to the wide variety of chemicals used, we have established a "Chemical Hazard Management Procedure" that defines clear responsibilities and control measures for the purchasing, usage, storage, and disposal of toxic substances, with precise records of chemical usage and inventory.

Our subsidiary Panco operates as a logistics center, not a manufacturing plant, and does not use chemicals, hence no chemical hazard operation procedures are required. The logistics center engages in processing and labeling operations; during which, accidental breakages of pharmaceuticals may occur, necessitating on-site cleanup. Therefore, we have written a "Cleanup Procedure for the Processing and Labeling Line" to ensure proper handling of any pharmaceutical leaks. No incidents of pharmaceutical breakages occurred during processing in 2023.

Toxic Chemical Disaster Response Actions

The Taichung factory is equipped with one general-level professional emergency responder to maintain safety. We have established a "Chemical Spill Emergency Response Standard Operating Procedure" that allows for quick and effective response actions. To date, no such incidents have occurred. The laboratory is equipped with comprehensive emergency response equipment available for use in emergencies, and equipment conditions and safety stock levels are checked monthly. Annual toxic substance spill drills are conducted to ensure that employees can respond promptly and effectively in emergency situations, minimizing the impact of disasters. In the future, based on the "Management Measures for Professional Responders to Toxic and Concerned Chemical Substances," professional responders will be appointed within the factory to take necessary protective, response, and cleanup actions in the event of an accident, while other unit's professional responders will perform disaster response support tasks, ensuring the implementation of factory-wide toxic disaster response operations and education and training for handlers of toxic substances.

2023 Annual Emergency Response Personnel Suit-Up Training and PEG Process Toxic Substance Spill Disaster Drills

(Response Procedure: Suiting Up → Decontamination → Cleanup)

Emergency Responder Suit-Up Training

Spill Disaster Rescue Drills

4.8 Biodiversity

Conservation of Diverse Species in the Central Taiwan Science Park

PharmaEssentia's production bases are located in the Central Taiwan Science Park in Taichung and the under-construction Zhubei factory in the Hsinchu Biomedical Science Park. Neither site is located in a conservation area or habitat for protected or rehabilitated species. Assessments have determined that there is no direct impact on biodiversity.

However, to ensure water resource protection, the Taichung facility has applied for a water pollution prevention permit and adheres to its regulations for production operations and reporting. Regular sampling and testing reports are within standards, posing no risk of environmental impact. According to the Central Taiwan Science Park Sustainability website, ecological surveys have shown an increase in many species inhabiting the area. Future efforts will continue to enhance conservation actions to attract more species and enrich the habitat of the park. Simultaneously, in 2023, we also sponsored a public welfare project by the international Jane Goodall Institute, indirectly participating in initiatives to protect plant diversity. This contributes to maintaining ecological balance, preventing ecosystem degradation, and promoting soil conservation and water stewardship. (Refer to section 6.4 Philanthropic Activities)

5 Fostering a Corporate Culture of Employee Well-Being

Chapter Highlights

19%	Global Employee Growth Rate, Average Retention Approximately 90%
NT$3.96million	20% Growth Rate in Employee Welfare Expenditure
0complaints	No Complaints of Human Rights Violations
Diverse Employee Structure, Balanced Gender Ratio	Compliance with Equality, Fairness, and Inclusion Policies
1,289hours	Occupational Safety and Health Education Training Totaling 33 Sessions, with 378 Participants Attending
Excellent	Outcomes from Breastfeeding Room Evaluations
9,426hours	of Global Sustainability Knowledge and Key Talent Trainings conducted for Mid-to-Senior Level Employees
100%	Completion Rate for employee Performance Assessment
3.8times	Headquarters Crude Birth Rate 2.2%, Higher than the Average Rate in Taiwan

PharmaEssentia adheres to a people-centric philosophy, providing a safe and friendly work environment for its employees. in 2023, the company participated in the bloomberg gender-equality index (GEI) survey for the first time. pharmaessentia aims to attract more professional talent to form a high-quality team by offering rich learning resources, competitive salaries, and benefits, with a focus on diversity and inclusion.

5.1 Human Rights Assurance

Human Rights Policy and Management Actions

GRI 406-1, GRI407-1, 408-1, 409-1, 410-1, 411-1 | CSA 3.1.1, 3.1.5, 3.2.1

PharmaEssentia adheres to the core principles of the "UN Global Compact," the "UN Universal Declaration of Human Rights," the "International Labor Organization's Tripartite Declaration of Principles," and the "OECD Guidelines for Multinational Enterprises," as well as local regulations. A "Human Rights Policy" has been established and approved by the chairman, and it is publicly available on the company's official website.

Policy Details:PharmaEssentia ensures no discrimination in attitude, behavior based on race, class, language, ideology, religion, party affiliation, origin, place of birth, gender, sexual orientation, age, marital status, appearance, facial features, physical or mental disability, zodiac sign, blood type, or past union membership. The company prohibits all forms of discrimination, strives for equal treatment of all employees, and fosters an inclusive workplace environment where every individual can thrive. PharmaEssentia enforces a strict no forced labor or child labor policy and respects the rights to freedom of association and collective bargaining. The policy is issued by the headquarters in Taiwan, where it oversees the adherence to relevant human rights legislation, and plans are in place to complete mandatory anti-discrimination and anti-harassment training for all employees by Q2 2024.

Management Actions

PharmaEssentia incorporates human rights considerations throughout its operations. The scope of the human rights policy includes the company's operational activities, industrial chain partners, and merger and acquisition entities; it covers employees, non-employees, partners in the value chain, suppliers, contractors, customers, and the communities around PharmaEssentia's operational sites. The company conducts annual audits of suppliers to ensure that significant suppliers implement relevant policies and commitments. Through various advocacy and training initiatives, the company declares a "zero tolerance" stance against all forms of unlawful workplace violations and takes corresponding actions.

Stakeholder opinions are highly valued, and complaint management systems are provided. Going forward, PharmaEssentia will also begin to integrate human rights risk identification and related risk management to prevent potential risks.

The General Manager has signed the "PharmaEssentia Statement Against Workplace Violence."

Human Rights Actions at PharmaEssentia

Human Rights Matters	Specific Management Methods/Measures	Implementation in 2023
Prohibition of All Forms of Discrimination, Respect for Workplace Diversity, Inclusion, and Equality	✓ Compliance with Labor Laws and Company's Human Rights Policy to Eliminate Discrimination ✓ Establishment of 'Work Rules', 'Corporate Sustainability Practices Code', and 'Workplace Sexual Harassment Prevention, Complaint, and Disciplinary Measures' ✓ Implementation of 'Complaint Procedures', Establishment of Internal and External Complaint Channels to Protect the Legal Rights of Employees, Customers, Vendors, and Stakeholders	• No Incidents of Discrimination • Balanced Gender Ratio • Multiple Communication Channels Including Employee Suggestion Boxes, Welfare Committees, and Labor-Management Meetings • Regular Welfare Committee and Labor-Management Meetings Held Quarterly
Prohibition of Forced Labor and Child Labor	✓ Compliance with Labor Laws and Company's Human Rights Policy, Prohibition of Involuntary Labor and Child Labor	• No Incidents of Forced Labor • No Incidents of Child Labor
Freedom of Association for Employees	✓ Implementation of Human Rights Policy, Encouragement of Employee Participation in Organizational Activities	• Internal Employee Clubs such as Badminton and Walking Clubs Established to Promote Healthy Activities Among Staff
Fair and Reasonable Salaries, Benefits, and Working Conditions	✓ Annual Salary Adjustments Based on Business Objectives, Individual Performance Assessments, and External Compensation and Benefits Surveys ✓ Implementation of 'Education and Training Management Policies' and 'Talent Recommendation Incentive Programs' to Train and Retain Talent	• Provision of Paid Sick Leave for Five Days, Exceeding Labor Standards; Flexible Working Hours • Average Employee Retention Rate Exceeds 90% • Global Employee Growth Rate of 19%
Employee Safety, Health, and Hygiene in the Workplace; Promotion of Employee Physical and Mental Health	✓ Implementation of 'Occupational Safety and Health Policy', 'Safety and Health Work Rules', and 'Maternal Health Protection Management Measures' to Enhance Colleagues' Health Management, Marital and Maternity Care, and Health Promotion Initiatives	• Taiwan Received 'Excellent Breastfeeding Room Evaluation Certification' • In Taiwan, Maternity Leave Return and Retention Rates are 100% and 67%, Respectively • Passed 'Healthy Workplace Certification' • Organized Health Screenings and Health Seminars
Prohibition of Unlawful Workplace Infringements and Sexual Harassment	✓ Implementation of Labor Laws, Company's 'Code of Ethical Conduct', 'Workplace Unlawful Infringement Prevention Measures', and 'Workplace Sexual Harassment Prevention, Complaint, and Disciplinary Measures' to Prohibit Workplace Violence ✓ Establishment of a Dedicated Hotline and Email for Sexual Harassment Prevention and Reporting of Unlawful Workplace Infringements (hr@pharmaessentia.com), Protecting Complainants' Information and Safeguarding the Rights of Complaining Colleagues	• No Incidents of Harassment Reported
Protection of Employee Information Privacy and Security	✓ Implementation of the Company's 'Human Rights Policy' and the Addition of 'Information and Communication Security Control Measures', with the Establishment of a Dedicated Unit Responsible for Promoting, Coordinating, Supervising, and Reviewing Information and Communication Security Management Issues	• Implementation of ISO 27001 Information Security Management System, with Third-Party Certification Expected to obtain by June 2024 • Conducted Information Security Education and Training for Employees

Transparent Internal Communication and Grievance Mechanisms GRI 402-1 GRI 2-22

PharmaEssentia's headquarter provides multiple grievance channels. Upon receiving a complaint, the complainant is anonymized and the case is investigated. In 2023, PharmaEssentia did not receive any internal or external complaints. The grievance mechanisms are as follows:

- Stakeholder and Employee Ethics Violation Complaint Channel on the official website, available for external parties to report or file complaints.
- Employee Suggestion Box: voice@pharmaessentia.com
- Workplace Legal Infringement: hr@pharmaessentia.com

Management of Significant Operational Changes and Announcements GRI 402-1

Notifications of significant operational changes are managed in accordance with the notice periods stipulated by labor law for the termination of employment contracts. Internal systems or important information are announced categorically to ensure immediate accessibility for employees; feedback is also collected through satisfaction surveys to enhance the planning of future activities.

Labor-Management Communication GRI 403-4

PharmaEssentia regularly holds labor-management meetings, with equal representation from employee and management sides, complying with relevant regulations. These meetings address employee health, environmental safety, salaries, and benefits, among other topics. The discussions are recorded and shared with employees for transparency. In 2023, the PharmaEssentia Taiwan headquarters and Taichung branch each held four meetings.

5.2 Diversity and Inclusion

Diverse Employee Structure, Balanced Gender Ratio

Compliance with Equality, Fairness, and Inclusion Policies

In 2023, PharmaEssentia participated in the Bloomberg Gender Equity Index(GEI) survey for the first time. The scope covered PharmaEssentia Taiwan headquarters, Taichung branch, Panco , PharmaEssentia Japan, PharmaEssentia USA. We are committed to building a diverse workplace and creating an inclusive environment.

Employee Composition Structure GRI 2-7, 2-8, 202-2, 405-1

In 2023, all employees at PharmaEssentia were full-time (working at least 40 hours per week), reflecting the company's commitment to diversity in the global market and focus on gender equity. The proportion of local residents employed in each country exceeded 95%.

- PharmaEssentia Taiwan (including Taipei headquarter and Taichung plant): The company employed 321 full-time workers, including one employee with disabilities. The gender distribution among all employees was balanced, with 50% male and 50% female. Among management, 61% were male and 39% female. The Taipei headquarter employed a male external IT worker and a female cleaning service worker as non-employee staff, while the Taichung plant employed a female outsourced cleaning worker. The IT contractor at the Taipei headquarters was converted to a permanent position in 2024.
- Panco, mainly responsible for warehousing, logistics, and sales: There were 19 full-time employees, reflecting the job's nature with 63% male and 37% female. The managerial staff was evenly split between males and females. Four male and one female non-employee workers assisted with the previous year's WH (warehousing) project.
- PharmaEssentia USA Subsidiary: The subsidiary had 130 full-time employees, with a gender distribution of 45% male and 55% female. Among management, 49% were male and 51% female.
- PharmaEssentia Japan Subsidiary: The Subsidiary had 45 full-time employees, with 71% male and 29% female due to local conditions. Among management, 78% were male and 22% female. Additionally, two employees identified as LGBTQI.

PharmaEssentia / Panco 2023 Employee Structure Table

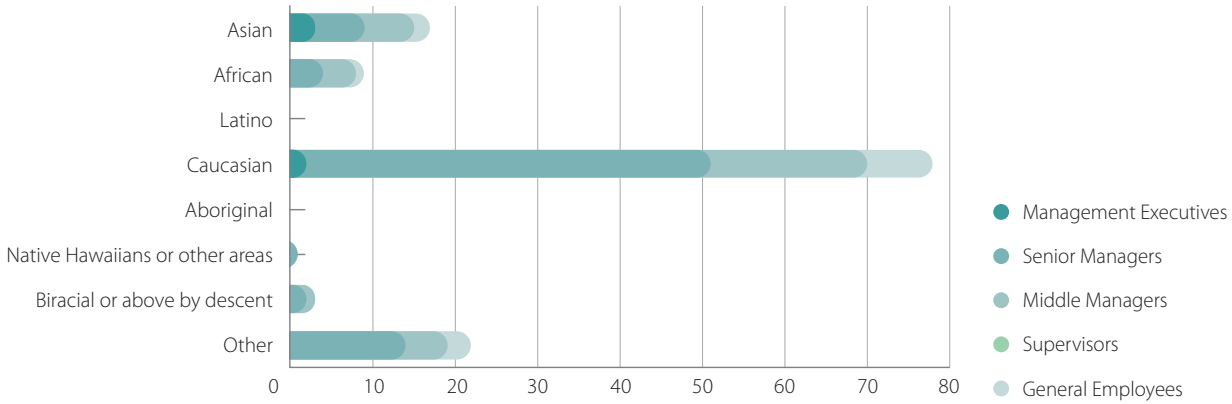
Classification	Category	PharmaEssentia 2023 Employee Structure Table						Panco 2023 Employee Structure Table					
		Male		Female		Total		Male		Female		Total	
		Number of Employee	Percentage	Number of Employee	Percentage	Number of Employee	Percentage	Number of Employee	Percentage	Number of Employee	Percentage	Number of Employee	Percentage
Job level	Management Executives (Vice President and above)	3	75%	1	25%	4	1%	0	0%	1	100%	1	5%
	Senior Managers (Director and above)	12	57%	9	43%	21	7%	0	0%	0	0%	0	0%
	Middle Managers (Manager and above)	27	71%	11	29%	38	12%	2	50%	2	50%	4	21%
	Supervisors (Team leader)	17	52%	16	48%	33	10%	1	100%	0	0%	1	5%
	General Employees	100	44%	125	56%	225	70%	9	69%	4	31%	13	69%
	Total	159	50%	162	50%	321	100%	12	63%	7	37%	19	100%
Age	30 years old and below	28	39%	44	61%	72	22%	0	0%	1	100%	1	5%
	31-50 years old	113	52%	106	48%	219	68%	11	79%	3	21%	14	74%
	51 years old and above	18	60%	12	40%	30	10%	1	25%	3	75%	4	21%
	Total	159	50%	162	50%	321	100%	12	63%	7	37%	19	100%
Education	Doctorate Degree	24	67%	12	33%	36	11%	1	100%	0	0%	1	5%
	Master's Degree	97	49%	103	52%	200	62%	4	67%	2	33%	6	32%
	Bachelor's Degree	36	47%	40	53%	76	24%	7	58%	5	42%	12	63%
	Others	2	22%	7	78%	9	3%	0	0%	0	0%	0	0%
	Total	159	50%	162	50%	321	100%	12	63%	7	37%	19	100%
non-employee workers	Taipei headquarter	1	50%	1	50%	2	67%	-	-	-	-	-	-
	Taichung plant	-	-	1	100%	1	33%	-	-	-	-	-	-
	Total	1	33%	2	67%	3	100%	4	80%	1	20%	5	100%

PharmaEssentia US/ Japan 2023 Employee Structure Table

Classification	Category	US						Japan					
		Male		Female		Total		Male		Female		Total	
		Number of Employee	Percentage	Number of Employee	Percentage	Number of Employee	Percentage	Number of Employee	Percentage	Number of Employee	Percentage	Number of Employee	Percentage
Job level	Management Executives (Vice President and above)	2	40%	3	60%	5	4%	8	100%	0	0%	8	18%
	Senior Managers (Director and above)	38	50%	38	50%	76	58%	10	71%	4	29%	14	31%
	Middle Managers (Manager and above)	17	49%	18	51%	35	27%	13	72%	5	28%	18	40%
	Supervisors (Team leader)	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
	General Employees	2	14%	12	86%	14	11%	1	20%	4	80%	5	11%
	Total	59	45%	71	55%	130	100%	32	71%	13	29%	45	100%

In our subsidiaries in the United States and Japan, we have also expanded the statistics on diversity indicators such as race. Globally, PharmaEssentia upholds the principle of diversity and shared prosperity, continuously working towards a broader set of diversity metrics to attract more global talents. As of December 2023, all employees of the PharmaEssentia subsidiary in Japan were of Asian descent. This demographic reflects the initial staffing focused on management to expand the market following the launch of Besremi in Japan in 2023.

Racial Composition of the Workforce in the USA



2023 PharmaEssentia STEM and Creative Performance DepartmentsDepartments

We continue to track the proportion of talent in basic sciences (STEM) and the ratio of personnel in the creative performance departments, enhancing PharmaEssentia's performance from multiple perspectives. In 2023, across the Taiwan, United States, and Japan regions, PharmaEssentia had 184 employees in the creative performance units, with 54% male and 46% female. There were 235 STEM personnel, with 59% male and 41% female.

2023 PharmaEssentia STEM and Creative Performance Departments

		Headquarter		Panco		US		Japan		Total	
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
STEM	STEM	114	80	1	0	15	13	8	4	138	97
	Non-STEM	45	82	11	7	44	58	22	11	122	158
	Total	159	162	12	7	59	71	30	15	260	255
Creative Performance Units	Managers	1	1	3	1	25	25	17	0	46	27
	Non-Managers	0	2	4	3	35	39	15	13	54	57
	Total	1	3	7	4	60	64	32	13	100	84

Note: ・ Definition of STEM: Refers to roles that require expertise in any of these areas, focusing on the application of scientific, technological, engineering, and mathematical principles.
Creative Performance Units:
・ Taiwan: The creative performance department refers to the sales department that directly interacts with end users.
・ United States: Includes roles such as Hematology Account Manager, Regional Business Director, Senior Area Business Director, and Senior Vice President of Sales and Marketing.
・ Japan: Encompasses Sales and Marketing departments.

New Hires and Employee Turnover Rates SASB HC-BP-330a.1, a.2 GRI 401-1

PharmaEssentia continues to grow globally, actively creating job opportunities. In 2023, the employee growth rate was 19.1%. To stimulate organizational vitality and cultivate well-rounded talent, when new business needs arise or key positions become vacant, we prioritize internal staff rotation assessments and promote from within. This approach fosters a cycle of diversity in promotion and retention. For instance, in 2023, PharmaEssentia Taiwan had 95 job openings, with 40 filled internally and 55 through external recruitment; the retention rate for supervisors and above ranged from 86.3% to 93.6%.

In addition to promoting internal talent, PharmaEssentia is committed to reducing staff turnover by implementing comprehensive retention strategies to stabilize the continuous retention of top talent. In 2023, PharmaEssentia (including subsidiaries) had a total of 559 employees, with 56 departures, resulting in an overall turnover rate of 10%. The voluntary turnover rate was 6.8%, while the involuntary turnover rate was 3.2%.

PharmaEssentia New Employees Statistics Over the Last Four Years

(Unit: Number of People)

Category	Details	2020	2021	2022	2023
Age	Under 30 years old	9	14	40	26
	31-50 years old	21	34	72	72
	Over 51 years old	6	38	15	36
Gender	Male	15	40	62	67
	Female	21	46	65	67

PharmaEssentia Employee Turnover Statistics Over the Last Four Years

(Unit: Number of People)

Category	Details	2020	2021	2022	2023
Age	Under 30 years old	4	4	3	7
	31-50 years old	18	28	25	28
	Over 51 years old	3	18	9	21
Gender	Male	16	27	17	30
	Female	9	23	20	26
Position	Senior Management	-	4	5	20
	Middle Management	-	17	10	17
	Junior Management	-	19	9	4
	General Staff	-	10	13	15

Note: Among the voluntary resignations, there were 13 senior managers, 9 middle managers, 2 junior managers, and 14 general staff.

Compensation System

GRI 2-21, 202-1, 405-2

Our compensation system is based on local labor laws and standards, ensuring no disparities due to race or gender. In addition to considering macroeconomic indicators, our company adjusts salaries based on the achievement of annual operational goals, individual performance evaluations, and third-party compensation and benefits surveys. This approach aims to offer compensation that exceeds industry standards.

In the U.S. market, our compensation policy is not only aligned with local regulations but also references the AoN Radford Lifesciences Benchmarking Data. Beyond offering competitive salaries and bonuses, the company also provides various profit-sharing mechanisms to retain talent, such as the issuance of "Employee Stock Options," "Restricted Stock Units," and "Employee Stock Purchase Plans.

19%

Global Employee Growth Rate, Average Retention Approximately 90%

Full-Time Employee Salaries

Over the past three years, the total and average salaries of full-time employees not in managerial positions at our company have progressively increased. This trend reflects the concrete results of the collective efforts at PharmaEssentia over recent years.

PharmaEssentia Taiwan (Headquarter + Taichung) Salary Information for Full-Time Employees Not in Managerial Positions Over the Last Three Years

(Unit: NTD thousand)

Year	2021	2022 (Note 3)		2023 (Unaudited)	
Number of Employees	198	232		282	
Total Compensation	228,391	270,448		332,713	
Average Salary	1,153	1,166	+1.1%	1,180	+1.2%
Median Salary	918	907	-1.2%	918	+1.21%

Note 1: This table has been audited by Ernst & Young.
Note 2: The denominator for "Average Salary," which is "Number of Employees," is adjusted to the "Weighted Average" number of employees for the full year based on the proportion of months paid.
Note 3: According to the audit results from Ernst & Young, the number of employees for 2022 has been revised from 195 to 232, and the median employee salary has been adjusted from 958 to 907.

Definition Explanation:
Referencing the definition set by the Taiwan Stock Exchange, "full-time employees not in managerial positions" refers to all employed staff of a company (or regular employees) excluding those in managerial roles (executives), employees of overseas branches, part-time employees, and any personnel exempt from this categorization. This includes both local and foreign full-time employees.

Ratio of Basic Salary and Remuneration by Gender GRI 405-2

In 2023, the ratio of the median salaries of non-managerial male employees to female employees at our company was 1.08:1 (946:879).

Annual Total Compensation Ratio GRI 2-21

At PharmaEssentia Taiwan headquarter, the ratio of the highest compensation to the median compensation [Note 1] of other employees is approximately 12.7:1. In the United States, the ratio is 3.6:1 [Note 2].

PharmaEssentia Headquarters [Note 3]: 2023 CEO to Other Employees Compensation Ratio

(Unit: NTD thousand)

Positions	Compensation	Annual Increase Rate	Compensation Ratio
Highest in the Organization (CEO) Compensation	11,652	-26.58% [Note 6]	12.7
Median Compensation of Other Employees [Note 4]	918 [Note 5]	1.21%	1.0

Note 1: Compensation is defined as salary plus bonuses.
Note 2: Japan does not track the median or average employee compensation or the ratio of CEO annual total compensation.
Note 3: Panco has fewer employees; to protect employees' salary privacy, this table only includes data for PharmaEssentia.
Note 4: Other employees at the Taiwan headquarter include all full-time staff excluding the highest-paid individual.
Note 5: According to Ernst & Young's audit, the median compensation for other employees in 2022 was corrected from 958 to 907.
Note 6: Due to the difficulty of obtaining pharmaceutical licenses in the USA, the board decided in 2022 to issue bonuses for achieving significant milestones.

5.3 Talent Cultivation and Career Development

Materiality Assessment

PharmaEssentia firmly believes that "talent" is the foundation of a company and that "investing in talent" is the company's most important responsibility. Therefore, we view talent cultivation and development as crucial projects. We are committed to creating a work environment that can ignite colleagues' passion and maximize the potential of individuals and teams. We encourage employees to proactively explore their potential and create an environment for autonomous, continuous learning.

Strategic Objectives:

PharmaEssentia's talent cultivation and development framework is aligned with corporate culture, core values, and global strategic layout. The talent cultivation system is divided into three functional aspects:

we will provide a rich array of training courses and digital self-learning resources for senior, middle, and junior managers, as well as general colleagues. We plan to design a dual-track, diversified talent development framework to nurture a diverse talent pool.

Action Plan:

PharmaEssentia's employee training methods include comprehensive on-the-job training, diverse learning channels, and sending top talent overseas for training to cultivate professionals in the biopharmaceutical field. This is supported by a workplace mentorship system, enhancing our talent management efficiency and preparing for long-term sustainable leadership. In 2024, we will also strengthen our digital learning platform, introduce a variety of digital self-learning resources, and encourage colleagues to engage in self-directed learning and development. This will allow individuals to tailor their learning agendas to their needs, enabling learning anytime, anywhere.

Materiality Assessment

Talent Cultivation and Career Development

Impact Assessment

In an era of rapid changes and intense competition in the global market, "talent" is a crucial sustainable foundation for any enterprise. Therefore, PharmaEssentia cultivates talent to create more positive outcomes.

Management Policies and Commitments

The framework for talent cultivation and development at PharmaEssentia is centered around three main aspects: establishing diverse training channels, fostering self-directed learning, and nurturing international professional talents. This approach is linked to our corporate culture, core values, and global strategic layout, promoting growth alongside the organization.

Responsible Units

- Sustainability Development Center – Employee Care Team
- Human Resources and Executive Managers
- Department Heads Responsible for Talent Cultivation

Resource Allocation and Management Actions

- Digital Learning Platform Development: Strengthening the human resources cloud management system and implementing a digital learning platform.
- Online English Learning Project: Enhancing the language foundations of international talents, with the Taiwan headquarters achieving an 84% completion rate that meets the set standards.
- Annual Training Investment in Taiwan: Total cost amounted to NT$1,678,000.
- Assessment of New Employees and Annual Performance Reviews.
- Diverse Talent Training for Organizational Development: Conducting internal and external educational training.
- Communication and Leadership Courses for Middle and Senior Management.
- Key Talent Cultivation Plan: Identifying key talents to provide developmental opportunities, including integrating personal potential with career planning and domestic/international rotational training opportunities.

Indicators and Goals

- Hours of Educational Training
- Educational Training Budget Allocation and Execution
- Performance Review Completion Rate
- Internal Promotion Rate
- Implementation Status of the Key Talent Cultivation Plan

Practices to Ensure Effective Actions

Regular performance evaluations and competency assessments are conducted as the basis for training planning and job promotions (employee performance evaluations are implemented every May and November).

Performance in 2023

- Talent Cultivation and Development: Education hours totaled 9,722 hours.
  - Training for Middle and Senior Management and General Staff: Total training hours were 7,744 hours.
  - Key Talent Training Courses: Total training hours were 296 hours.
  - ESG Sustainability and Transformation Training Courses: Total training hours were 1,682 hours.
- Total Investment in Educational Training: Over NT$36 million.
- In the U.S., 37 managers participated in Middle and Senior Management Communication Leadership Courses, and 19 managers participated in StrengthsFinders.
- 100% of new employees in Japan received training.
- Employee Performance Review Completion Rate: 100%.
- Internal promotion rate at the Taiwan headquarter was as high as 42% (In 2023, there were 95 new positions, 40 of which were filled by internal staff).

Communication with Stakeholders

- Regular and irregular communication with employees in various forms.
- Annual regular performance evaluations and various employee surveys.

Future Planning

2024 Goals

- Continuously investing in digital learning platforms and further strengthen sustainability efforts.
- Initiate the Key Talent Cultivation Plan.
  - Enhance the leadership and management knowledge and skills required by managers at all levels, accumulating an average of 16 training hours per managerial staff.
  - Develop and implement a job rotation system to improve talent mobility efficiency.
  - Continuously promoting global linguistic capabilities, with over 50 participants receiving more than 100 hours of English training.
  - Promote and strengthen policies on employee rights and gender equality through related legal courses, with an average of at least 3 hours per person.
- Establish an educational training system and an e-learning platform.
- Allocate annual external training costs for each department's professional areas.

New Employee Training

All new employees undergo pre-employment training courses to quickly grasp the company's business philosophy and culture and to enable them to utilize their skills effectively. Before the end of their probation period, there will be a performance interview and evaluation with the employee. In addition to implementing "pre-employment training" according to the "Educational Training Implementation Policy," a "mentorship system" is also used. This system assigns experienced colleagues to teach professional knowledge and skills, using direct instruction and multimedia teaching materials to aid the learning of necessary job competencies. Supervisors also regularly engage in discussions to help new employees familiarize themselves with the work environment and increase their job involvement. New employee forums or discussions are organized at the Taipei headquarters, Taichung plant, and various subsidiaries, where senior management and HR managers directly address and listen to the adaptation status of new employees.

Middle to Senior-level Executives Education and Training

In accordance with the annual training plan, education and training courses are arranged and implemented for employees within the training system, including training for new employees, hierarchical training, professional training, and sustainable knowledge training, aiming to continuously enhance the abilities and qualities of talents in various fields such as production, research and development, marketing, and management, thereby enhancing the competitiveness of PharmaEssentia.

In 2023, one person (senior executive) participated in the application for the Taipei EMBA program at National Taiwan University and officially enrolled in the program in 2024.

The main professional training conducted by the US subsidiary in 2023 focused on employee coaching and communication, including courses such as GROW and Digital Aid. The "Communicating with Courage" course aims to improve the ability to evaluate performance and provide effective and timely feedback to subordinates, with 37 managers participating. The CliftonStrengths (Strengthfinders) course, attended by 19 middle and senior managers, aims to improve communication and collaboration within teams and departments.

In response to Besremi's listing in Japan, the Japanese subsidiary conducted management training for four new executives in 2023, including training on behavior, work attitude, and advocacy of human rights policies such as the prevention of workplace harassment.

Key Talent Development Plan

As PharmaEssentia continues to thrive globally, the HR department will discuss with senior management to initiate a key talent development plan in accordance with the long-term planning of the organization. The plan aims to systematically cultivate reserve executives at all levels to continuously improve internal promotion rates in response to the future development needs of the organization.

Sustainable Development Knowledge Enhancement Education and Training

In 2023, the fifth year of PharmaEssentia's implementation of the sustainable development blueprint, the direction of talent cultivation is set as sustainable transformation. The Sustainability Center also held a series of education and training sessions to enhance the sustainable literacy of all employees and managers. For example, the first ESG sustainable education and training course held on September 15, 2023, covered the journey and practices of ESG corporate sustainable development, the annual review and recommendations of sustainable execution performance in 2022-2023, and the introduction of the forthcoming implementation of IFRS international financial reporting standards and SROI social impact assessment. A total of 65 ESG project members were invited, with an actual attendance of 41, and an attendance rate of 63.08%. In addition, 51 people participated in autonomous online learning. In 2023, a total of 9 ESG sustainable development and transformation training courses were held, with a total of 373 participants and a total training time of 1,682 hours.

Education and Training Hours Statistics GRI 404-1

In 2023, Panco's main operational sites invested 7,744 hours in education and training for managers and general employees, 296 hours in the key talent development plan, and an additional 1,682 hours in the aforementioned sustainability-related education and training, bringing the total education and training investment to 9,722 hours, with a total investment cost exceeding NT$36 million.

Education and Training Hours Statistics

(Unit: Hours)

	Taipei Headquarter	Taichung	Panco	US	Japan	Total
Managerial and General Employee Education and Training - a	4,288	1,168	211	1,453	624	7,744
Key Talent Development Plan - b	0	0	0	296 (Business Operation)	0	296

Note:

a. Managerial and General Employee Education and Training: In addition to the aforementioned training content in Taiwan, it also includes courses such as QPharma Learning Management System + KnowBe4 IT Training in the United States and Compliance training, PC training, etc. in Japan.

b. The Key Talent Development Plan includes leadership external training courses in the United States such as Courageous Conversations, Communicating with Courage, Radical Candor - Accelerated Leadership Group, etc.

100%
Completion Rate for employee Performance Assessment

2023 employee training hours

Headquarters (including the Taichung plant)

In 2023, employee training hours at the headquarters (including the Taichung plant) according to job level: Average training hours for male Managers in Taipei + Taichung: 26 hours, Average training hours for female Managers in Taipei + Taichung: 15 hours, Average training hours for male Non-managers in Taipei + Taichung: 13 hours, Average training hours for female Non-managers in Taipei + Taichung: 16 hours.

For Panco

Average training hours for male Managers : 10 hours; Average training hours for female Managers: 22 hours; Average training hours for male Non-managers: 20 hours; Average training hours for female Non-managers : 9 hours.

2023 Headquarters Total training hours

(Unit: hours)

	Total training hours			Average training hours	
staff	Male	Female	Total	Male	Female
Managers	1,481	658	2,139	26	15
Non-managers	1,303	2,014	3,317	13	16
Total training hours	2,784	2,672	5,456	38	31

Note: Managers include titles at the managerial level or above (including managers). The hours have been rounded to the nearest integer.

2023 Panco Total training hours

(Unit: hours)

	Total training hours			Average training hours	
staff	Male	Female	Total	Male	Female
Managers	30	67	97	10	22
Non-managers	79	35	114	20	9
Total training hours	109	102	211	30	31

Note: Managers include titles at the managerial level or above (including managers). The hours have been rounded to the nearest integer.

Performance assessment and promotion system adhere to the standards GRI 2-20, 404-3, 405-1

All full-time employees at PharmaEssentia undergo regular performance evaluations and career development assessments, serving as the basis for setting job goals and personal growth. In 2023, both headquarter and Panco achieved a 100% participation rate in performance evaluations and career development assessments among permanent employees, excluding factors such as incomplete probationary periods and leave without pay. Regardless of gender or job category, the completion rate of employee performance assessments reached 100%. In the fiscal year 2023, a total of 49 outstanding employees were recognized at the Taiwan headquarter (including the presentation of awards and monetary incentives), with 40 employees being promoted. The internal promotion rate for mid to senior-level managerial positions reached 22.5%.

New Employee Assessment

- Before the end of the probationary period, unit supervisors should conduct performance interviews and evaluations with new employees.
- For those who do not pass, the company may terminate the employment contract in accordance with relevant legal regulations or extend the probation period with mutual consent.

Annual Performance Assessment

- Two performance assessments are conducted annually to help employees and supervisors reach consensus on job goals, improve employee work capabilities, and achieve company operational objectives through the cyclical process of goal setting, mid-year interviews, and year-end evaluations.
- Through the performance assessment system, employee output performance is managed, and employee potential is discovered, allowing for talent selection. By understanding the shortcomings of employees' work through performance assessments, methods for improvement and efficiency enhancement are provided.
- Human resources units arrange appropriate courses to achieve improvement goals. Training blueprints are also established based on various professional competencies, and individual development plans are provided to enable better communication between each colleague and their supervisor regarding their career development.

5.4 Talent Attraction and Retention

Materiality Assessment

PharmaEssentia adheres to the philosophy of "Better Science, Better Lives." To expand its research and development capacity, PharmaEssentia collaborates with top domestic universities to provide summer internships, fostering talent through industry-academic cooperation. Additionally, diverse recruitment channels are utilized to meet the needs of different regions and departments. PharmaEssentia prioritizes the promotion of internal talent, offering attractive benefits and rotation opportunities to establish a talent pipeline and retain key employees.

Materiality Assessment

Talent Attraction and Retention

Impact Assessment

In an era of rapid global market changes and intense competition, "talent" is the crucial cornerstone of enterprise sustainability. Therefore, talent attraction and retention are regarded as important development projects, dedicated to developing diverse recruitment channels, continuing industry-academic cooperation, optimizing promotions, nurturing talent, and strengthening international competitiveness.

Management Policies and Commitments

Talent development is PharmaEssentia's responsibility and commitment to its employees. PharmaEssentia will continue industry-academic cooperation and expand diverse recruitment channels to attract outstanding talent. It aims to create a friendly and safe working environment that can inspire colleagues' enthusiasm and commit to long-term career development, thereby retaining talent. PharmaEssentia plans to revise its talent development policy in the third quarter of 2024 internally to provide more diverse ways to reward talent.

Responsible Units

- Sustainability Development Center - Employee Care Team
- Human Resources and Management-level Supervisors

Management Actions

- Performance-based salary adjustments, promotion salary adjustments, and structured salary adjustments are conducted based on the achievement of annual business objectives, individual annual performance appraisals, or outsourced compensation and benefits surveys.
- Implementation of the "Education and Training Management Regulations" and the "Talent Recommendation and Incentive Regulations" to provide training and development opportunities for talent retention.
- Providing talent with conditions superior to those stipulated by labor laws and offering flexible working hours to attract talent.
- Holding employee selection programs to acknowledge outstanding performance and enhance a sense of belonging.
- Planning and executing diverse recruitment plans and utilizing AI tools and personality assessments for objective talent selection.
- Long-term planning for female welfare to increase the proportion of female managers.
- Long-term incentive measures: Providing restricted stock for newly recruited talent and key personnel who make significant contributions to the company's development (see PharmaEssentia Prospectus); additionally, offering stock options to attract and retain outstanding talent (see PharmaEssentia Prospectus).
- Establishing long-term organizational development plans.
- Planning to participate in market salary surveys regularly to provide competitive compensation and developing diverse reward mechanisms to timely motivate employees from different groups.
- Promoting employee satisfaction and engagement surveys, scheduled for implementation in Q3 2024.
- Utilizing external professional resources to implement employee assistance programs, providing employees with counseling and guidance in psychological adjustment, career management, health enhancement, and quality of life improvement.
- Regularly organizing employee activities to enhance their quality of life and assist them in leading healthy and happy lives.

Indicators and Targets

- Employee turnover rate <10%
- Occupational health and safety: 0 violation cases
- Employee care and friendly working environment: 0 violation cases
- Compensation and benefits: Maintained at levels superior to the industry standard

Practices to Ensure Effective Actions

- Performance appraisals and career development assessments conducted regularly serve as the basis for education, training, promotion, counseling, and rewards (employee performance evaluations are conducted in May and November each year).)
- Employee satisfaction surveys

Performance in 2023

- Global employee average retention rate reaches 90.7%.
- Global employee growth rate reaches 19.1%.
- 100% of employees undergo performance appraisals.
- Employee care and friendly working environment: Zero violations.
- Average satisfaction score of US employees is 4 points, with an 80% satisfaction rate; 114 participants.
- Average satisfaction score of Japanese employees is 66.4 points, higher than the industry average of 48.9 points; 52 participants.

Communication with Stakeholders

- Regular/irregular communication with employees in various forms.
- Annual regular performance appraisals and various employee survey questionnaires.

Future Planning

2024 Targets

- Talent Attraction:
  - Establish diverse recruitment plans, including job platforms, social media, campus recruitment events, industry-academic cooperation, internships, and talent recruitment consultants, to attract potential talent and enhance company competitiveness.
  - Utilize "AI tools" and "personality assessments" to provide more objective selection criteria, assisting HR in streamlining the recruitment process and improving interview efficiency.
  - Offer conditions superior to labor laws and flexible working hours to attract talent.
- Talent Retention:
  - Continuously optimize mechanisms such as promotions, performance evaluations, and employee development plans to provide employees with career development opportunities.
  - Regularly conduct training courses to nurture and develop outstanding talent and provide opportunities for job rotations.
  - Regularly participate in market salary surveys to provide competitive compensation and develop diverse reward mechanisms to timely motivate employees from different groups.
  - Hold annual selection of outstanding employees to acknowledge their outstanding performance and enhance their sense of belonging.
- Support colleagues in long-term career development within PharmaEssentia to help them broaden their horizons and gain diverse experiences, fostering cross-departmental talent and further achieving talent retention goals.
- Future plans include commissioning a third-party independent unit to conduct an employee opinion survey report, identify key retention indicators, identify areas for improvement, and implement talent development projects.

NT$3.96million

20% Growth Rate in Employee Welfare Expenditure

Employee Benefits and Care

GRI 401-2, 404-2, 401-3, 411-1

PharmaEssentia offers employee benefits and care that exceed market standards to attract talent. In addition to providing employees with five days of paid sick leave and flexible working hours, the company also offers bonuses for festivals, project achievements, and long-term employee incentive programs, such as employee stock options, restricted stock units, and cash increases in employee shares. Furthermore, comprehensive insurance plans including labor insurance, health insurance, group insurance, and overseas travel insurance are provided.

Since the establishment of the Employee Welfare Committee (EWC) in 2013, PharmaEssentia has held four regular meetings annually to jointly plan employee-related welfare activities with the company and the EWC. In 2023, PharmaEssentia and Panco's total welfare expenditure was approximately NT$3.96 million, a 20% increase from the previous year, with a total of 945 people benefiting from various welfare schemes. In 2024, a hardship relief policy will be established, allowing employees facing difficulties due to major illnesses or other factors to apply for emergency relief funds from the company to ensure basic living needs.

Employee Activities

- Health check-ups
- Weight loss programs
- Stress-relief massages
- General leave of absence without pay
- Employee Assistance Program (EAP) health seminars
- Recognition of outstanding employees
- Discounts at affiliated stores
- Free taxi rides for employees working late shifts

Flexible Leave Policy

- Flexible working hours
- Comprehensive leave system (some of which exceed the legal requirements of labor laws)

Female-Friendly Workplace Environment

For female employees, the company provides care and support including maternity benefits and childcare services, which include:

- Marriage subsidy and marriage leave system
- Pregnancy, childbirth, and maternity leave without pay, for example, PharmaEssentia pays full salary, provides 10.975 weeks of maternity leave and paternity leave
- Comfortable breastfeeding room setup, with a childbirth subsidy of NT$6,000
- Providing friendly parking spaces for pregnant women
- Providing regulations for "maternal health protection" before and after childbirth, allowing female employees to feel convenient and valued in terms of "maternal health protection"
- Collaboration with nurseries for childcare

Our company adheres to government policies regarding the care of maternal and infant health and safety. We do not employ underage workers, nor do we assign tasks to pregnant or lactating female employees that may pose risks to infants. For breastfeeding mothers from the date of pregnancy to one year postpartum, nurses provide counseling and follow-up, addressing physical, ergonomic, work-related stress, and personal health risk factors to prevent potential maternal hazards. The breastfeeding room in our company received an excellent rating in the evaluation.

Excellent

Outcomes from Breastfeeding Room Evaluations

3.8 times

Headquarters Crude Birth Rate 2.2%, Higher than the Average Rate in Taiwan

Reinstatement and retention after parental leave GRI 401-3

Both the Taiwan headquarter and the subsidiaries in Japan and the United States provide relevant benefits to employees applying for parental leave, allowing them to achieve a balance between work and family life. For example, in Japan, employees may have more flexible working hours, apply for telecommuting, and primary caregivers are entitled to over 30 weeks of paid leave, while non-primary caregivers can apply for at least 4 weeks of paid leave. The statistics for 2023 show that the return-to-work rate and retention rate for female and male employees in Taiwan after parental leave were 100% and 67%. Additionally, there were a total of 7 newborns in the Taiwan headquarter, with a crude birth rate of approximately 2.2%, which is about 3.8 times higher than Taiwan's crude birth rate of 5.82%. In the United States, there were 3 newborns, with a crude birth rate of 2.3%, which is higher than the U.S. average crude birth rate of 1.22%.

Maternity Leave Statistics for PharmaEssentia Headquarters and Panco in the Past 3 Years

	2021			2022			2023		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Number of Employees Eligible for Maternity Leave in the Current Year (A)	18	16	34	11	12	23	9	16	25
Number of Employees who Actually Applied for Maternity Leave in the Current Year (B)	0	5	5	0	5	5	2	2	4
Maternity Leave Application Rate (B/A*100%)	0%	31%	15%	0%	42%	22%	22%	13%	16%
Number of Employees Expected to Return to Work after Maternity Leave in the Current Year (C)	0	4	4	0	4	4	1	3	4
Number of Employees who Returned to Work after Maternity Leave in the Current Year (D)	0	4	4	0	3	3	1	3	4
Return-to-Work Rate after Maternity Leave (D/C100%)	0%	100%	100%	0%	75%	75%	100%	100%	100%
Number of Employees who Returned to Work after Maternity Leave in the Previous Year (E)	0	3	3	0	4	4	0	3	3
Number of Employees who Continued Working for One Year after Returning to Work from Maternity Leave in the Previous Year (F)	0	3	3	0	4	4	0	2	2
Maternity Leave Retention Rate (F/E100%)	0%	100%	100%	0%	100%	100%	0%	67%	67%

Retirement Benefits and Welfare GRI201-3

For retirees, we organize retirement farewell dinners and provide retirement benefits in accordance with the law. Under the old system, retirement benefits are calculated at 2% of the monthly salary for each year of service and deposited monthly into the employee's account at the Taiwan Bank. After the implementation of the new retirement system, the company contributes 6% of the employee's salary to their individual retirement account based on their retirement benefit level.

Employee Assistance Program (EAP) GRI 404-2

PharmaEssentia extends its employee assistance program primarily to include on-site health services and has enhanced EAP psychological counseling services. Qualified professionals with appropriate certifications assist employees in addressing various issues affecting work efficiency through psychological counseling services. As of September 30, 2023, a total of 9 employees have participated in counseling sessions. Additionally, we provide labor re-employment assessments to assist in suitable job matching.

For colleagues who experience significant accidents or illnesses, we provide the following measures:

- We offer care for employees with major illnesses and assistance to the families of deceased employees to meet their living needs.
- We provide funeral allowances for the families of deceased employees and show concern for their living conditions.

Notice Period for Termination GRI 402-1

PharmaEssentia values the factors contributing to employee turnover and adheres to statutory notice procedures. Therefore, each case of termination is followed by an exit interview conducted by supervisors or HR personnel to gather reasons and make necessary improvements to provide a more conducive work environment and system to enhance employee stability. In the event of job reassignment, discussions with the immediate supervisor are held several weeks prior to the reassignment, and the reassignment is announced only after mutual agreement.

Employee Satisfaction Survey

For key focus areas or events organized by the company, we also utilize survey questionnaires to understand the actual situation, grasp the needs of employees, and use them as a basis for improvement in benefits and activities. In 2023, Taipei conducted a monthly survey on "abnormal workload" among employees three times a month, with a total of 93 employees participating and receiving counseling guidance. In Taichung, a "workload questionnaire" survey was conducted during employee health checks, with a total of 139 responses received. The U.S. subsidiary conducted an employee satisfaction survey, with 114 employees participating, achieving an average score of 4 out of 5. The Japanese subsidiary also conducted an employee satisfaction survey in 2023, with 52 participants, achieving an average satisfaction score of 66.4, compared to the industry average of 48.9.

5.5 Occupational Safety and Health

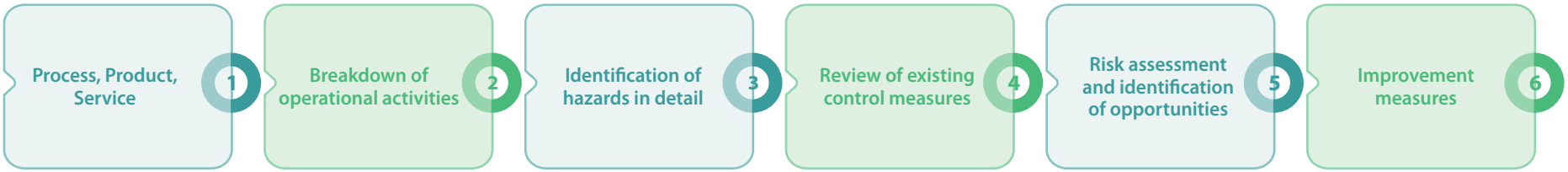
Occupational Safety and Health Management GRI 403-1

In 2018, PharmaEssentia issued the "Environmental Health and Safety Policy," which explicitly outlines the commitment to protect employee safety and health, preserve the environment, prevent disasters, and enhance safety and health awareness among all employees, with the goal of sustainable corporate development. Additionally, the Taipei headquarter established an Occupational Safety and Health Committee task force in 2023 to develop the "Occupational Safety and Health Policy," which was approved by the general manager and implemented. This policy covers key aspects such as occupational safety and health management, health promotion, hazard identification, and risk assessment. It applies to all employees, including the 321 full-time employees at the Taipei headquarter and Taichung plant, achieving a coverage rate of 100%. Currently, non-employees are not included.

The Taipei headquarter plans to pioneer the adoption of the ISO 45001 Occupational Health and Safety Management System in 2024, with the Taichung plant following suit. This initiative aims to establish a more comprehensive framework for hazard identification, risk assessment, accident investigation, and related measures, in order to foster a safe, healthy, and accident-free workplace environment. PharmaEssentia has also established various complaint mechanisms, including direct feedback channels to environmental safety personnel in each plant, workplace misconduct complaint email and hotline, sexual harassment prevention and control complaint email and hotline, as well as labor rights complaint procedures/email and hotline.

Hazard Identification, Risk Assessment, and Incident Investigation GRI 403-2

Although ISO 45001 has not yet been implemented, PharmaEssentia refers to the Job Safety Analysis (JSA) method to construct existing management processes. This involves steps such as hazard identification and risk assessment management models to ensure operational continuity. Regular occupational safety and risk education training sessions are also conducted to enhance personnel awareness of hazard identification and management practices. The process includes:



Regular Employee Meetings and Department Meetings

While our company does not have a labor union, we have established an "Employee Welfare Committee," where employees can discuss work reports and proposals every quarter to enhance smooth communication between labor and management. Additionally, through regular department meetings, besides communicating important company matters and operational goals, senior management can directly discuss company vision, culture, consensus building, and goals with supervisors and employees. Furthermore, the company encourages employees to express their demands directly to their immediate supervisors.

Occupational Health Services GRI 403-3, 403-4

We are committed to reducing occupational injury risks and creating a work environment that promotes physical and mental balance and happiness among employees. PharmaEssentia has obtained "Healthy Workplace Certification/Health Promotion Mark" for both the Taichung Plant and the Taipei Headquarter, with a validity period of 3 years, affirming the company's efforts in protecting the health of its employees.

PharmaEssentia provides various occupational health services in accordance with the "Labor Health Protection Regulations" and the "Occupational Safety and Health Act." These services include annual physical examinations, periodic health promotion seminars, special health check-ups, workplace maternity health protection, prevention of diseases induced by abnormal workloads, workload questionnaires, 10-year cardiovascular disease risk management assessments, and prevention of human factor hazards. Every year, professional psychologists or physicians/nurses are arranged to provide on-site services. In 2023, a total of 39 sessions of physician/nurse on-site services were provided in Taichung and Taipei, with a total of 135 employees participating in health education activities and receiving counseling sessions, reducing or eliminating potential health risks. Quarterly labor-management meetings are also established as a smooth communication channel for employees to raise health concerns at any time.


Certificate No.: HPAA1100257

Badge of Accredited Healthy Workplace

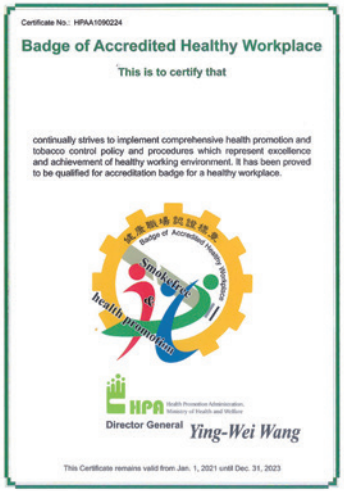
This is to certify that

continually strives to implement comprehensive health promotion and tobacco control policy and procedures which represent excellence and achievement of healthy working environment. It has been proved to be qualified for accreditation badge for a healthy workplace.

Director General Chao-Chun Wu

This Certificate remains valid from Jan. 1, 2022 until Dec. 31, 2024

PharmaEssentia Headquarters health workplace certification/health promotion label


Certificate No.: HPAA1090224

Badge of Accredited Healthy Workplace

This is to certify that

continually strives to implement comprehensive health promotion and tobacco control policy and procedures which represent excellence and achievement of healthy working environment. It has been proved to be qualified for accreditation badge for a healthy workplace.

Director General Ying-Wei Wang

This Certificate remains valid from Jan. 1, 2021 until Dec. 31, 2023

Taichung plant health workplace certification/health promotion label

Implementing health services and promotion activities to reduce health risks GRI 403-3

PharmaEssentia is committed to creating a work environment where employees enjoy physical and mental balance and happiness. Regardless of age, all employees undergo an annual general health checkup, with parameters exceeding regulatory requirements, enabling employees to understand their health condition early and manage it proactively. Additionally, contracted healthcare professionals are stationed on-site to provide health education services. When necessary, arrangements are made for physician consultations or referrals to hospital outpatient clinics to reduce or eliminate potential health risks. In 2023, a total of 389 employees benefited from these services.

Employee health promotion GRI 403-6

We organize a variety of health promotion activities to cultivate healthy habits among employees outside of work and provide diverse ways to relieve physical and mental stress, thereby safeguarding each other's health.

Activity Details	2023 Achievements
Providing health check-ups that exceed legal requirements	• Implemented once annually regardless of age. • Added abdominal and cervical ultrasound, lung function, bone density, cancer screening, and electrocardiogram tests.
Conducting health check-ups in compliance with regulations	Implemented according to occupational safety regulations by age group; conducted annually according to GMP regulations.
Subsidies for sports clubs and courses	Established walking and table tennis clubs, with club operating expenses subsidized every six months.
Organizing hiking and trekking activities	The walking club organizes hiking and trail walks periodically. In 2023, three outings were organized in collaboration with the health promotion activities and the walking club, exploring hidden gems in the Central Science Park.
Providing massage services	Massage Station: Since 2014, we have established a "Massage Station" to promote both public welfare and employee health. We employ one visually impaired massage therapist. Recognized by both employees and external parties, it has successfully created a model of a healthy workplace. In 2023, it was utilized by approximately 1,000 individuals.
Implementing flexible working hours	The flexible working hours are primarily implemented to accommodate the balance between employees' work and family life. The flexible working hours are from 8:00 to 9:30 in Taipei and from 8:00 to 8:30 in the Taichung plant, allowing all employees to utilize their time more efficiently.
Medical professionals stationed or contracted	According to the contract signed with the management consulting company based on the company's workforce:: • doctor visits the premises three times a year for a duration of two hours each visit. • A nurse visits the premises three times a month for a duration of two hours each visit. • Psychologists and rehabilitation doctors provide irregular on-site services. In total, 41 employees from the Taichung plant participated in health education activities and received counseling sessions in 2023.
Subsidies for influenza vaccinations	Five days of paid sick leave per year, with a subsidy of NT$ 600 dollars per person for flu vaccinations, and included in the 2023 health promotion points reward program.

Workplace Safety and Accident Prevention Mechanism / Impact Assessment

GRI 403-5, 403-7, 403-9, 403-10

PharmaEssentia established its Safety Committee in 2023 and is planning to implement ISO 45001 in 2024. Each plant follows the spirit of ISO occupational health and safety management, formulating the "Labor Safety and Health Work Guidelines" and "Emergency Response Procedures", standardizing various inspection measures, and conducting regular emergency drills to respond to various emergencies and prevent work safety incidents. Employees regularly receive occupational safety and health education and training. For operations subject to regulatory requirements, personnel are allocated in accordance with the law, and it is stipulated that non-operators are not allowed to operate their operating items. The plant also specifies "Important Facility Operator Testing", "Plant Safety and Health Regulations", and "Contractor Entry Procedures", regulating entry, facility operation, plant safety, etc., to ensure the safety and health of all personnel in the plant.

Panco Logistics Center has established "Logistics Center Safety Management Procedures" and "Emergency Response Handling Procedures" to prevent the occurrence of occupational safety and health-related injuries and ensure that all equipment operates normally. In the event of an emergency, the logistics center manager is immediately notified, and the emergency response team is activated to rescue and evacuate personnel or report injured persons for medical treatment.

1,289 hours

Occupational Safety and Health Education Training Totaling 14 Sessions, with 378 Participants Attending

In terms of occupational safety and health training in 2023, PharmaEssentia conducted pre-employment training for new employees and on-the-job training for employees on relevant legal certificates, with a total of 62 participants and a total training time of 407 hours. Every year, it also participates in regulatory advocacy and international new knowledge dissemination activities organized by local government authorities, as well as irregular internal and external training seminars (including general training, specific occupational hazards, dangerous activities, dangerous situation training, etc.) to optimize environmental education and training on internal management measures. In 2023, a total of 14 internal and external training sessions were held, with a total of 378 participants and a total training time of 1,289 hours.

Plant	Item	Total Sessions	Participants	Total training hours	Notes (Frequency)
Taipei / Panco	Emergency evacuation & first aid skills training (internal training)	3	130	845	Irregular
	General occupational health and safety education training (internal training)	1	33	99	Irregular
	Hazardous chemical labeling and general rules (internal training)	1	19	57	Irregular
	Park evacuation training (external training)	1	80	80	Once a year
Taichung	Self-defense fire brigade training (internal training)	2	86	172	Every six months
	Toxic chemical disaster response drill (internal training)	2	6	12	Every six months
	Biosecurity response drill (internal training)	1	18	18	Once a year
	Central Taiwan Science Park toxic disaster seminar and disaster prevention and rescue response drill review meeting (external training)	1	1	1	Irregular
	Chemical inspection and disaster response management and safety and health inspection guidance plan expert discussion meeting (external training)	1	1	1	Irregular
	Toxic substance response personnel training general level (internal training)	1	4	4	Initial training
Total		14	378	1,289	-

Risk Assessment

Before the implementation of ISO 45001, the company followed the system for managing risks and opportunities outlined in ISO 45001. Employees in each plant have the right to retreat, and procedures for hazard identification, risk assessment, and opportunity evaluation are established. All workers in each unit participate in hazard identification and risk assessment for operational activities within the unit. These workers have completed pre-job training, on-the-job training, and necessary certification training (for specialized operations) to possess the ability for hazard identification and risk assessment.

Permit Management

At PharmaEssentia's Taichung plant, employees and contractors are required to apply for permits and complete relevant protective measures before executing high-risk operations. In 2023, a total of 134 fire permits (high-risk operations) were issued at the Taichung plant to control fire operations and ensure the safety of equipment and personnel.

Contractor Management

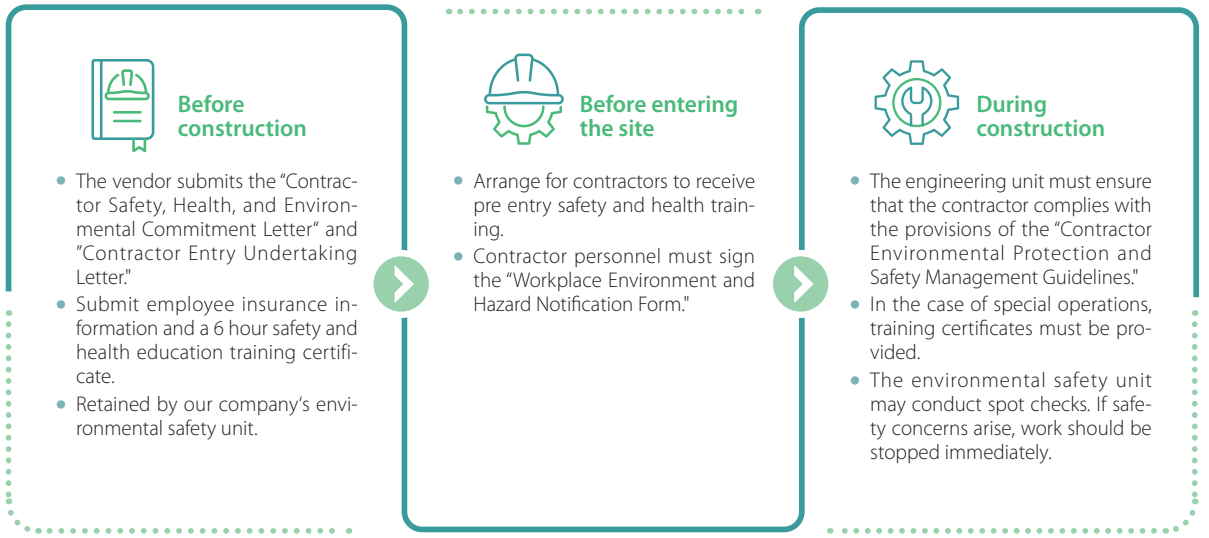
We have established contractor management procedures to ensure the safety of contractors entering our company premises. Management mechanisms are set up for pre-construction, entry, and during construction to safeguard the safety of both company employees and contractors. In 2023, neither PharmaEssentia nor Panco had any occupational injury accidents involving contractors working at our company premises, nor were there any recorded cases of occupational diseases. We will continue to ensure the safety of contractors' construction activities in the future, protecting their interests and promoting a safe and reliable working environment.

Chemical Management

PharmaEssentia has gradually established a chemical inventory to improve operational procedures.

Equipment and Other Management

All plants comply with regulatory requirements for the entry inspection of machinery or tools, which must be verified as qualified and have safety certification before use.



Regular Fire Emergency Drills

On-site roll call and report command sheet

Broadcast for evacuation

Evacuation of personnel

Close down vital facilities

water shooting training

Guide people away

Fire extinguishing squads

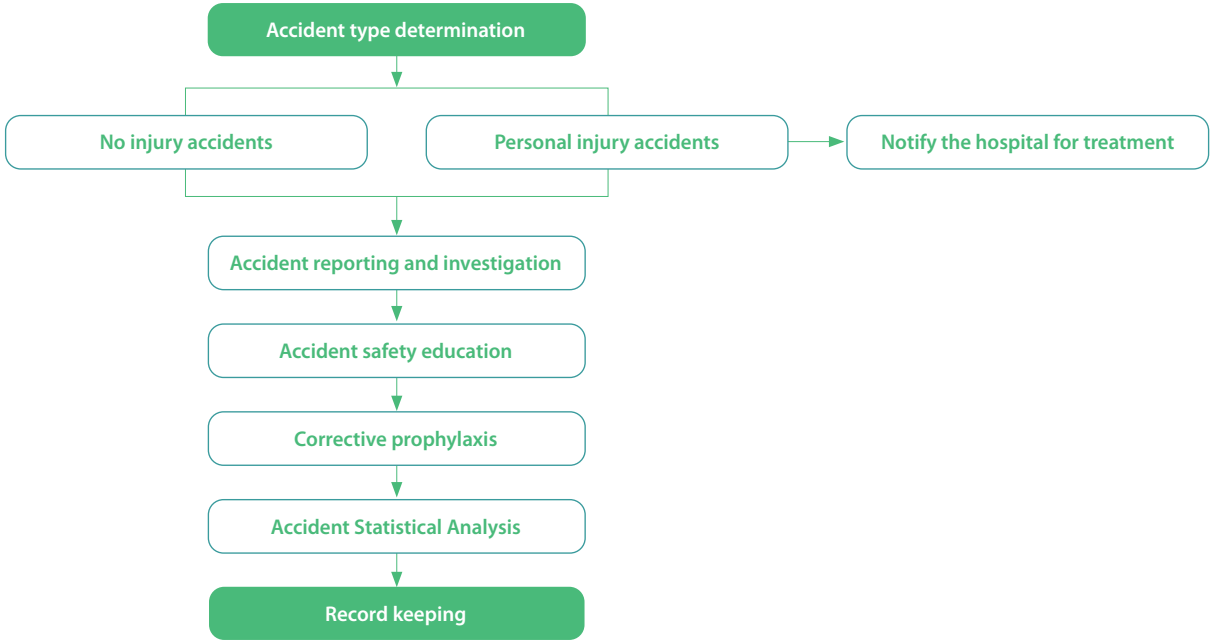
Emergency Medical Training: AED & CPR Practical Training

Our company tracks occupational injuries at PharmaEssentia, Panco, and our subsidiary in the United States. We conduct investigations and follow-up improvement measures in accordance with the "Accident Investigation and Handling Measures." In 2023, there were two occupational injury incidents that occurred at the Taichung plant in Taiwan. One incident involved a colleague scratching their cornea while operating a machine due to unfamiliarity with it. The colleague returned to work four days later after recovering. The other incident occurred when an operator failed to wear silicon gloves or heat-resistant gloves as required, resulting in a minor scald from hot water. After receiving treatment, the colleague returned to work without any impact on work hours.

In response to these isolated incidents, equipment inspections were conducted according to the incident investigation management regulations. Relevant personnel were convened by responsible supervisors to investigate the causes and review improvements. Measures such as adding warning signs, conducting safety discussions and training for personnel, and strictly enforcing equipment safety operating instructions were implemented to ensure the safety of our colleagues.

Accident Investigation Procedure

1. In the event of a fire, explosion, chemical spill, or natural disaster, emergency response procedures are implemented according to the emergency response plan. The priority is to prevent the situation from escalating, minimize casualties, and ensure the safety and well-being of individuals affected.
2. Immediately after the accident occurs, notify the unit supervisor and the environmental safety unit for support either by phone or verbally. Determine whether external agencies such as the fire department or environmental accident response teams need to be contacted for assistance.
3. Follow up with the subsequent accident investigation process.



False Alarms

In 2023, there were eight false alarm incidents and six safety incidents (two within the site premises and four outside) at the Taichung plant of PharmaEssentia. These incidents did not result in casualties or property damage and were unrelated to the production process. Personnel sustained minor injuries with no loss of work hours or need for medical treatment.

Occupational Accident Rate GRI 403-9, 403-10

In 2023, there were two cases of temporary disability in Japan, resulting in a total loss of approximately 5 months of workdays. In the Taiwan region of PharmaEssentia, there were a total of 2 cases of temporary total disability events, resulting in a loss of approximately 4 days.

Item	Definition	2023
Total working Days	Total working days for all employees in 2023	249days
Absenteeism Rate (AR)	Absenteeism Rate (AR): (Total Absence Days / Total Working Days) × 100%, rounded to the nearest thousandth. Absence Days: Days when employees are unable to work due to various reasons, including sick leave (general sick leave, hospitalization sick leave, menstrual leave), personal leave (personal leave, family care leave), work injury leave, and occupational disease leave; excluding approved holidays (such as annual leave), maternity leave, paternity leave, and bereavement leave.	1.6%
Total Recordable Occupational Accident Count	Number of recordable occupational injuries	Taichung Plant: 2 incidents
Total Recordable Occupational	(Number of Accidents × 200,000) / Total Working Hours. (200,000 is based on an annual rate of 50 weeks, 40 hours per week, per 100 employees. Work-related accidents exclude accidents occurring during commuting).	Taichung Plant: 1.26
Accident Frequency (TRIR)	Number of recordable occupational disease cases: Cases of occupational diseases caused or aggravated by work conditions or practices, including but not limited to (1) repetitive tasks leading to musculoskeletal disorders, (2) diseases of the skin and respiratory system, (3) malignant cancers, (4) diseases caused by physical factors (e.g., hearing loss induced by noise, diseases induced by vibration), and (5) mental disorders.	0
Number of Occupational Diseases	Occupational Disease Rate (ODR): (Total Occupational Disease Cases / Total Working Hours) × 1,000,000, rounded to the nearest thousandth.	0
Occupational Disease Rate (ODR) Injury Incident Rate (IR)	Serious Occupational Injury Incident Rate: (Number of Serious Occupational Injury Incidents / Total Exposure Hours) × 1,000,000, rounded to the nearest thousandth. Serious Occupational Injury Incidents: Total number of permanent total disability incidents and permanent partial disability incidents.	0
	Occupational Injury Incidents / Total Working Hours) × 1,000,000, rounded to the nearest integer. Recordable Occupational Injury Incidents: Total number of temporary total disability incidents, incidents with loss of days within one day, and incidents involving red medicine.	6.31
Lost Day Rate (LDR)	Lost Day Rate (LDR): Lost Day Rate (LDR) = (Total Disability Loss Days / Total Working Hours) × 1,000,000, rounded to the nearest thousandth. Lost Work Days: Total number of days lost due to temporary total disability, permanent partial disability, permanent total disability, and death.	12.62

Note: Temporary Disability Incident Definition: Temporary disability is defined as an injury where the affected person is neither deceased nor permanently disabled but is unable to continue normal work, requiring time off from work for one day or more (including national holidays, scheduled days off, or days when work is suspended), and the worker is temporarily unable to resume work.

Occupational Accident Rate of Japanese Employees (First disclosed by Japanese subsidiary in 2023)

Lost Time Injury Frequency Rate (LTIFR)	(Total number of disabling events / Total Working Hours) x 1,000,000	22.31	Days Away, Restricted, or Transferred Rate (DART)	(Total number of disabling events / Total Working Hours) x 200,000	4.46
Lost Time Injury Rate (LTIR)	(Total number of disabling events / Total Working Hours) x 200,000	4.46	Lost Workday Rate (LWR)	(Total number of days lost due to disabling events / Total Working Hours) x 200,000	223.11

6 Contributors Participating In Society

Chapter Highlights

Besremi.com/ What's Next PV	U.S. Patient Education Support Platform
6,200+	BESREMi® cumulative global patients usage since launch
MPN	Taiwan Patient Education Support Platform "Good Medicine, Close to the Marro"
5 groups	Support international educational activities for North American MPN patient groups
NCCN	BESREMi® upgraded in the U.S. NCCN Treatment Guidelines to PV2A category preferred drug for patients
No.1	Assisted Chiayi Chang Gung in establishing the first MPN treatment center and the Taiwan Myeloproliferative Neoplasms Care Association (TMPNA)
3	Sponsors biodiversity, health, and cultural social welfare initiatives, reducing carbon emissions by 18,841 kilograms of CO_2e.
1,332 patients	Global cumulative clinical trial patient usage
700+ participants	From 17 health education events hosted by Panco
43 patients	Patients benefiting from compassionate use therapy
3 events	Taiwan participates in local community empowerment activities

PharmaEssentia tirelessly commits to new drug development and through its Access of Medicine strategy plan, continuously promotes the acquisition of new drugs by patients worldwide. This enhances 'accessibility', ensures 'affordability', and improves 'availability'. These are our core philosophies and commitments. We follow the framework of the 2024 Access to Medicine Index to formulate the group's strategic guidelines, solely to address unmet medical needs.

6.1 Access to Healthcare Management

Materiality Assessment

1,332 patients

Global cumulative clinical trial patient usage

PharmaEssentia follows the framework of the 2024 Access to Medicine Index (ATMI). Under good access to healthcare governance, the company provides product development rooted in scientific innovation. By increasing medicine accessibility, accelerating the promotion of drug certification acquisition, and market distribution, PharmaEssentia helps more MPN patients obtain better treatment with Besremi, thereby improving their quality of life.

Materiality Assessment

Access to Healthcare

Impact Assessment

The core mission of the biotechnology industry is to promote human health and well-being. PharmaEssentia focuses on patient-centric care, achieving unmet patient needs through research and innovation. Before products are marketed, compassionate use therapies and clinical trial participation opportunities are provided; after marketing, the company accelerates drug certification in different markets through subsidiaries and strategic partners, enhancing the accessibility and equitable availability of medications.

Management Policies and Commitments

We are committed to providing high-quality medications to more patients whose medical needs are currently unmet. Through innovative research and development efforts, and by accelerating drug certification with market supply chain partners, we can meet the needs of more patients requiring solutions. Additionally, we are considering how to implement reasonable pricing strategies to reduce the burden of healthcare costs, demonstrating the cost-effectiveness of Besremi through cost analysis.

Governance Structure

- Taiwan headquarters along with the marketing departments and medical affairs teams of subsidiaries.
- Materiality Assessment: Managed and integrated by the members of the Access to Healthcare team from the Center for Sustainable Development.

Management Actions

Research and Development	Clinical Trial Participation	Compassionate Use Therapy	Marketing Authorization
Beyond MPN, PharmaEssentia is also investing in PEG-IL-2 technology for the treatment of inflammatory and immune diseases; and through external collaborations, jointly developing TCRT cell therapies.	In 2023, global clinical trials (multi-country, multi-ethnic) added 453 participants, bringing the total to 1,332 patients.	In 2023, a total of 43 patients received compassionate use therapy.	Obtained drug licensing in over 40+ countries.

Indicators and Goals

- In accordance with the spirit of the Access to healthcare guidelines, we use (1) the number of products developed/clinical trial participants, (2) the number of patients using Besremi, and (3) the timing of drug approvals in various countries as indicators to demonstrate how the company serves more unmet medical needs.

Practices to Ensure Effective Actions

- Continuously advancing milestones for various programs, including drug approvals, equitable access to healthcare strategies, and outcomes.
- Improving the affordability of new drugs: fair and reasonable pricing, pricing policies, drug delivery, and drug donations.

Performance in 2023

- Scientific innovation in product development: In 2023, global R&D expenses reached NT$2.22 billion, a 55.5% increase from the previous year, and marketing expenses amounted to approximately NT$2.13 billion, a 38.2% increase from last year. PharmaEssentia has recently accelerated the development of BESREMi® for various indications, in collaboration with partners for new drug development and expansion into new therapeutic areas, with four new indications currently under trial; additionally, six new drugs and drug combinations are being rapidly developed.
- Number of patients using the medication: In 2023, over 6,200 patients benefited from Besremi.
- Beneficiaries of compassionate use therapy: 43 patients.
- Drug approvals: Obtained in over 40 countries.

43 patients

Patients benefiting from compassionate use therapy

1. Committed to providing high-quality medicines to more patients whose medical needs are currently unmet.

Compassionate Use Therapy

For regions where the drug has not yet been approved and for patients who do not qualify for clinical trials but are in severe or life-threatening situations due to MPN, PharmaEssentia conducts internal reviews and complies with regulations and ethics committees to provide compassionate use therapy to eligible patients.

Mechanisms and Progress of Compassionate Use Therapy

Operating Mechanisms

PharmaEssentia has established a standard operating procedure (PEC-MA-SOP-001) to manage the provision and execution of medications under compassionate use. As of the end of 2023, 43 patients have utilized this program.

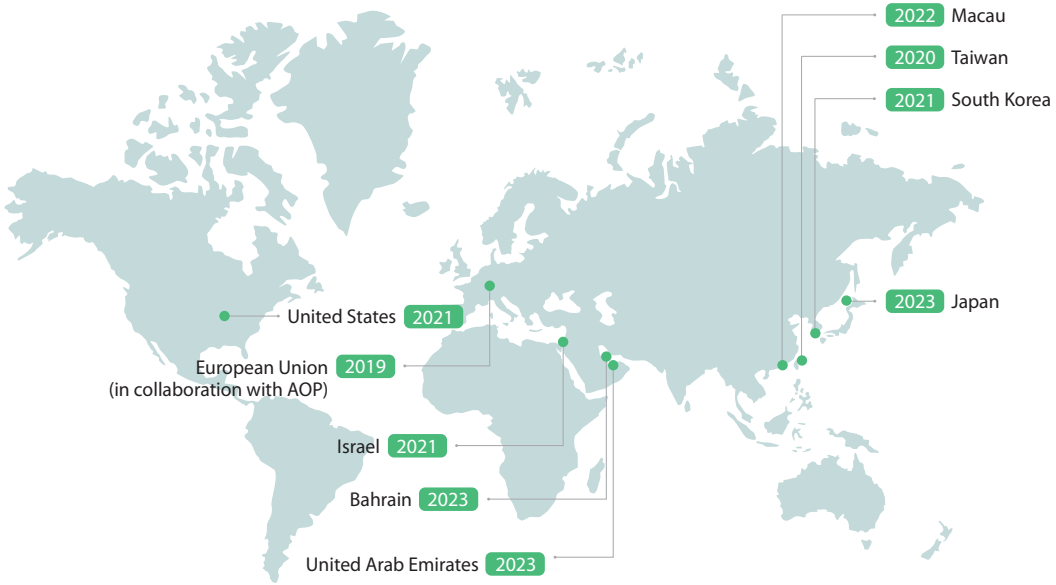
	Type of Donated Medications	Indications	Cumulative Number of Benefiting Patients
2020	P1101	• MPN (PV, ET, MF)	38
2021	P1101	• Taiwan : MPN (PV, ET, MF) • South Korean : ECD	40
2022	P1101	• Taiwan : MPN (PV, ET, MF) • South Korea : ECD	40
2023	P1101	• Taiwan : MPN (PV, ET, MF), EHE • Singapore and Malaysia : PV	43

Note: For content related to clinical trials, please refer to Section 3.1, New Drug Research and Innovation Management.

Accelerating Drug Registration

BESREMi® has obtained marketing authorization in over 40 countries globally since its first drug license in 2018. This includes multiple European countries, as well as the United States, Japan, South Korea, Israel, and Taiwan where it is already on the market; drug licenses are currently being applied for in China, Singapore, and Malaysia. Through the establishment of subsidiaries and partnerships with strategic partners, PharmaEssentia continues to expand its global market share, providing new options for the treatment of rare diseases and reducing the burden of such treatments.

Year and Countries of BESREMi® Drug Registration



Year	Indications	Countries
2019	PV	European Union (in collaboration with AOP)
2020	PV	Taiwan
2021	PV	United States, South Korea, Israel
2022	PV	Macau
2023	PV	Japan, United Arab Emirates, Bahrain

Product Delivery

Product delivery is equally important under the premise of access to healthcare; given the different regulations on drug packaging and labeling in various countries, PharmaEssentia collaborates with local stakeholders. In countries like the USA, Germany, and Japan, PharmaEssentia has signed outsourcing manufacturing contracts with local manufacturers who comply with GMP standards to enhance the smooth delivery of products. Additionally, measures are taken to combat counterfeiting. (For more details, see 3.4 Sustainable Supply Chain Management).

Product Donation

Given that Besremi (P1101) can be applied in multiple disease areas, we actively collaborate with governments and the academic community to make an impact. During the severe COVID-19 pandemic, considering patient needs, PharmaEssentia donated medication to the Health and Welfare Department's Shuang Ho Hospital for clinical use in treating mild to moderate COVID-19 patients. Out of 22 patients, 21 successfully recovered and were discharged after their test results changed from positive to negative. Based on this success, PharmaEssentia invited National Taiwan University Hospital to lead a Phase III multicenter clinical trial of P1101 for treating COVID-19, aimed at providing treatment options for mild to moderate cases. Although the pandemic subsided and the trial was not completed, PharmaEssentia will continue to adhere to its patient-centered philosophy and spirit, investing in research and collaborating with medical professionals to provide drug donations for independent clinical research based on clinical needs, accelerating the expansion of the drug's potential benefits to help more patients in need.

Focusing on patient needs, providing comprehensive support

- Patient Support SOURCE Program: Applicable to patients currently using BESREMi® prescription medication. This program provides comprehensive support, from insurance information and self-pay discount programs to medication guidance and ongoing medication ordering processes. It aims to offer more convenience to patients who might not use the medication due to insurance payment delays or insufficient insurance coverage, including providing free medication for uninsured or underinsured patients. The goal is to ensure a stable supply of PharmaEssentia medications to patients, reducing their financial burden.

PharmaEssentia SOURCE™
Your resource for patient support & education

- In Japan, beginning in 2024, a patient support program will be established, including a website, professional medical education, and customer service centers. This program will also cover insurance and self-pay discount programs to medication guidance, assisting patients in reducing their out-of-pocket financial burdens.

NCCN

BESREMi® upgraded in the U.S. NCCN Treatment Guidelines to PV2A category preferred drug for patient

2. Responsible Pricing Strategy, Creating Medical Value and Cost-Effectiveness

Equitable Access to Healthcare Strategy and Outcomes: Enhancing product medical efficiency

GRI 416-1 SASB HC-BP-240a.1

Providing innovative drugs with medical contributions to alleviate the burden on healthcare insurance systems and meet medical needs is a crucial goal for PharmaEssentia. The medical value of BESREMi® has been included in the guidelines of the European LeukemiaNet (ELN) [Note 1] since 2021. Additionally, the National Comprehensive Cancer Network (NCCN) [Note 2] has also incorporated BESREMi® into its guidelines as the preferred medication for treating adults with Polycythemia Vera (PV), regardless of previous treatments or high-risk status. We have completed a comprehensive health economic evaluation (including cost-benefit, cost-utility, and cost-effectiveness analysis) of BESREMi® upon its launch in Europe to analyze its impact on healthcare costs. We are actively collecting data to support subsequent health technology assessments, thereby certifying the medical value of BESREMi®.

Note 1: ELN is a platform of 44 countries and 220 institutions involving over 1,000 researchers and clinical personnel, aimed at integrating pioneering leukemia clinical trial groups across Europe. ELN's goal is to integrate 120 pioneering leukemia clinical trial groups in Europe, along with associated service cooperation institutions, industry, and corporate resources to promote the importance of treating leukemia.

Note 2: NCCN is a nonprofit organization in the USA, comprised of a coalition of 31 cancer centers, most of which are designated as Comprehensive Cancer Centers by the National Cancer Institute.

Improving New Drug Affordability: Fair and Reasonable Pricing

SASB HC-BP-240b.2, b.3

BESREMi® is the first interferon approved by the U.S. FDA for Polycythemia Vera (PV) and has been granted orphan drug status. It is also listed as the preferred medication in the U.S. NCCN guidelines. Developing orphan drugs requires significant investment in research and financial resources. Based on the principle of accessibility, we have committed substantial resources to ensure that patients can access the necessary medication as soon as it becomes available on the market.

Step 1 Tiered pricing

Implement tiered pricing for sales regions based on the level of national development.

Step 2 Evaluate the registration results

Evaluate the registration results and decide on a strategy for Step 3a or 3b

Step 3.a The prices of medications determined by national insurance agencies

For example, in Taiwan, pricing is set according to the principles established by the National Health Insurance. This involves considering clinical opinions, evidence of efficacy, current treatment costs, and other factors. A payment standard is proposed along with a five-year budget plan for drug pricing, an analysis of financial impact, and a pharmacoeconomic analysis. The goal is to establish medication prices that benefit the maximum number of patients.

Step 3.b Pricing Strategy for Private Health Insurance Systems

1. Affordability: Set prices based on affordability of each country.
2. Economic Data: Refer to each country's domestic GDP, private medical insurance costs, and drugs with the same indications.
3. Product Value Analysis: According to pharmacoeconomics, health technology assessment (HTA) and other methods.
4. Medical Contribution Assessment: Analyze the benefits and risks of products on the medical and economic systems of various countries.

Responsible Pricing Strategy

PharmaEssentia prioritizes patient interests in its drug pricing, also considering factors such as research and development costs, the number of patients targeted during the patent period, competitive product pricing, expected profits, reimbursements from third-party insurance companies, and health insurance payments by regulatory authorities in different countries. Prices are then set based on each country's ability to afford medical costs, economic development, pharmaceutical costs, and referencing the "WHO Guideline on Country Pharmaceutical Pricing Policies" to establish fair and reasonable drug prices.

Evidence-Supported Reasonable Pricing

PharmaEssentia evaluates the impact of its products on medical costs using health economics assessment methods (such as cost-benefit, cost-utility, and cost-effectiveness analyses) to assess the costs associated with using Besremi versus standard therapies and other competitive innovative products. This approach has been validated in its major markets.

Ireland

BESREMi has passed the HTA review in Ireland, analyzing the drug's safety, efficacy, and quality of life data, confirming it is more cost-effective compared to standard treatment options.

U.S.

In the U.S. market, the U.S. subsidiary has conducted cost-effectiveness analyses from the perspective of U.S. healthcare payers, also confirming greater cost-effectiveness compared to standard treatments.

Japan

PharmaEssentia subsidiary in Japan is analyzing the cost-effectiveness of BESREMi to submit to the Japanese Ministry of Health, Labour and Welfare (MHLW) as evidence for HTA. Strengthening the treatment with Besremi offers more reasonable cost-effectiveness compared to traditional therapies and competitive products.

6.2 Caring for patient journeys, enhancing health outcomes

Patient Journey

PharmaEssentia contributes to health outcomes across various stages of the patient journey, including disease awareness and screening, MPN diagnosis confirmation and treatment, as well as comprehensive patient care post-treatment, providing holistic support.

Disease Awareness and Screening
- Understanding the Disease
- Knowing the Medical Specialties to Consult
- Seeking the Right Medical Attention and Screening

Diagnosis and Treatment
- Confirming the Disease
- Immediate Treatment
- Correct Medication Use

Comprehensive Patient Care Cycle
- Complete Treatment Course
- Monitoring and Improvement

Disease Awareness and Screening

PharmaEssentia not only continues to invest in ongoing professional education for healthcare professionals in the countries where its products are marketed but also supports healthcare professionals in conducting patient education events. Additionally, in accordance with local laws, online websites are established in the marketing countries such as:

- WHAT'S NEXT PV:
  Serving as the main patient education website for the U.S. region, this platform helps the public understand disease-related knowledge and recognize disease risks. It aims to connect the patient community through the platform, providing comprehensive support for the body, mind, and spirit during treatment, and promoting smooth communication with medical professionals.
- www.Besremi.com:
  Offers information for U.S. patients about medication use and treatment options.

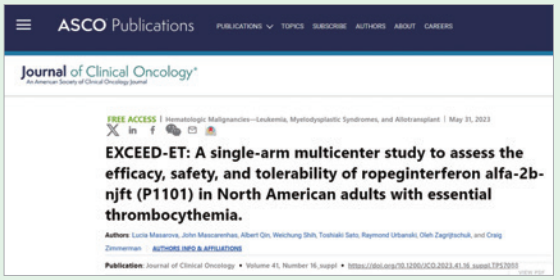
Diagnosis and Treatment

In addition to being included in national and international treatment guidelines, PharmaEssentia conducts ongoing professional education for healthcare providers in the countries where its products are marketed. This is aimed at enhancing their understanding, diagnosis, treatment, and care of MPN. PharmaEssentia also collaborates with medical associations in the marketing countries and internationally to host seminars and continuously publish significant research findings.

In disease diagnosis and treatment, PharmaEssentia has organized numerous medical professional disease education events in global markets and published various research and development achievements in professional medical journals, enhancing breakthroughs in public health and healthcare outcomes.

Key Events for 2023:

- **2023 ASCO Annual Meeting:** Presentation of the EXCEED-ET study methodology.
- **2023 ASH Annual Meeting:** Presentation on the progress of research into Primary Myelofibrosis (PMF).
- **MPN Asia Annual Meeting:** Since 2016, PharmaEssentia has been a long-term sponsor of the MPN Asia Medical Annual Meeting, aiming to promote sustainable health and social inclusion. As of 2023, six editions have been successfully he ld, touring four cities in Asia, showcasing PharmaEssentia's innovative contributions and social impact in the field of rare MPN diseases, highly recognized by the external community.
- **Review by Japan's MHLW for Standard of Care (SOC):** Whether to include biomarker tracking in standard treatments to confirm the reduction in risk of deterioration and even the possibility of cure.
- **Collaboration and Academic Exchange with Associations in Taiwan:** Events with the Hematology Society of Taiwan, the Pharmacists Association, etc., to enhance physicians' knowledge of the MPN field and the effectiveness of long-acting interferon treatments.
- **Chiayi Chang Gung Memorial Hospital MPN Center:** PharmaEssentia and Chiayi Chang Gung Memorial Hospital have both been deeply involved in the MPN field for many years. In addition to promoting the importance of disease treatment through the center, they also conduct clinical research for genetic mutation testing to improve the accuracy of disease diagnosis and technology.
- **Education Training for Healthcare Providers in the USA:** The U.S. subsidiary provides sponsorships to Continuing Medical Education (CME) providers to offer more medical education, including medical conferences and on-demand educational content.



PharmaEssentia provides continuous and systematic education and training for healthcare professionals, as well as patient interaction events, to improve the overall care throughout the patient treatment journey. For example, in 2023, Panco hosted 17 seminars for healthcare professionals and patients to enhance understanding of diseases and medication treatment options, thereby enhancing professional medical knowledge. These events had a total of approximately 700+ participants.

Activity ame	Target name	Purpose	Timeline (Short, Medium, Long Term)	Frequency	Benefits
MPN Asia	Healthcare Professionals	Increase understanding of the disease and medication treatment options	Long-term	Annually	Enhance professional medical knowledge
MPN Workshop	Healthcare Professionals	Increase understanding of the disease and medication treatment options	Long-term	Annually	Enhance professional medical knowledge
Patient Activities	Patients and Healthcare Professionals	Increase disease awareness	Medium-term	Quarterly	Enhance disease management knowledge
Regional Seminar	Healthcare Professionals	Increase understanding of the disease and medication treatment options	Medium-term	Quarterly	Enhance professional medical knowledge
Hospital Seminar	Healthcare Professionals	Increase understanding of the disease and medication treatment options	Short-term	Every two months	Enhance professional medical knowledge
Hematology Society Annual Conference Seminar	Healthcare Professionals	Increase understanding of the disease and medication treatment options	Long-term	Annually	Enhance professional medical knowledge

Comprehensive Patient Cycle Care

To assist in comprehensive cycle care for patients, PharmaEssentia has established patient support programs, actively supports patient education and case management, continues safety monitoring, helps reduce financial burdens for patients, and promotes complete treatment. In Taiwan, it has helped establish the Taiwan Myeloproliferative Neoplasms Care Association (TMPNA), and also supports the American Patient Power Foundation program and the MPN Research Foundation in the USA. Key outcomes include:

- **Post-Marketing Safety Monitoring:**
  PharmaEssentia continuously collects safety information for BESREMi® from all countries where it is marketed to update the Drug Safety Update Report (DSUR/PSUR) and assess the risk-benefit profile of BESREMi®. To date, there have been no incidents of non-compliance with product and service health and safety regulations.
- **Establishment of the Taiwan Myeloproliferative Neoplasms Care Association (TMPNA):**
  Enhances patient awareness of disease treatment.
- **Establishment of MPN:**
  Serves as a platform for MPN-related disease information in Taiwan, sharing new treatment knowledge and care recommendations.

TMPNA
台灣骨髓增生性腫瘤關懷協會
Taiwan Myeloproliferative Neoplasms Association

- **American Patient Power Foundation Program:**
  Supports the treatment journey for PV patients and promotes correct treatment concepts through online digital programs, facilitating patient education, promoting doctor-patient dialogue, and enhancing public understanding.
- **MPN Patient Group Assistance and International Educational Activities:**
  Provides support for major North American patient-related group activities, including MPN Research Foundation, Canadian MPN Research Foundation, MPN Advocacy & Education International, Patient Power, and PV Reporter. Offers online information sharing and physical events to enhance patient education and exchange of opinions, spread information about disease diagnosis, treatment goals, and disease progression, while also increasing the MPN community's understanding of the medical benefits of BESREMi.
- **American MPN Research Foundation and Clinical Trial Search Engine:**
  Helps establish a disease clinical trial search tool for MPNRF, providing a matching channel to assist MPN patients and their treating physicians in finding suitable clinical trials for subsequent treatment.

MPN RESEARCH FOUNDATION

- **Patient Case Management Support:**
  - Taiwan Case Management Care: Tracks patient treatment progress and subsequent medication reactions through a project-based approach.
  - U.S. Medication Adherence Tracking: If a patient discontinues medication due to adverse drug reactions, PharmaEssentia can receive discontinuation information through a specialty pharmacy database and accurately record it in the drug monitoring program for follow-up.
- **Patient Support Plan:** (See detail in 6.2 Caring for patient journeys, enhancing health outcomes)
- **Compassionate Use Program:** (See detail in 6.1 Access to Medicine Management)

6.3 Global Localization Empowerment and Medical Advancement

Materiality Assessment

PharmaEssentia upholds a patient-centered philosophy, planning various actions and support programs to implement drug accessibility and meet patients' health-related needs. Starting in Taiwan, caring for MPN patients through patient education, financial and medical support, and academic exchanges, the company provides a comprehensive integrated plan that penetrates every stage of the cycle of care. In 2023, the patient education program reached over 700 healthcare professionals and patients. Looking internationally, PharmaEssentia has been a long-term sponsor of MPN Asia and actively participates in renowned international societies (such as the American Society of Hematology, ASH), vigorously presenting the latest research findings to help medical professionals understand empirical evidence and new options for treating patients. In 2023, PharmaEssentia made significant research presentations at ASH, ASCO (American Society of Clinical Oncology), and other prestigious societies and international journals.

Materiality Assessment

Doctor-Patient Relationships and Local Empowerment

Impact Assessment

PharmaEssentia adopts a patient-centered approach, enhancing healthcare professionals' knowledge about diseases, strengthening doctor-patient relationships to aid in the appropriate use of medications, and through industry empowerment, helps more patients access high-quality medications.

Management Policies and Commitments

Implement actions related to patient health, including:

- Ensuring comprehensive collection of safety data through multiple adverse event reporting channels, and legally required notifications.
- Ensuring all patients using PharmaEssentia medications are well-informed about disease characteristics, drug effects, and medication outcomes.
- Promoting disease-related knowledge, providing treatment consultation and referral services.
- Caring for patient health during treatment and providing ongoing monitoring.
- Promoting local medical care and healthcare industry empowerment to expand PharmaEssentia's social external impact.

Responsible Units

- Taiwan headquarter, all subsidiaries' marketing departments, and medical affairs teams.
- Materiality Assessment: Managed and integrated by the Access to Healthcare team within the Center for Sustainable Development.

Management Actions

- Taiwan headquarter and all branches actively participate in medical industry-related lectures, sharing knowledge to promote local empowerment.
- Panco subsidiary has set up the MPN patient education and interaction platform and has assisted the Taiwan Myeloproliferative Neoplasms Care Association in organizing World MPN Day educational seminars and the first general assembly to implement patient education support activities in Taiwan.
- The U.S. subsidiary has launched the Patient Support SOURCE program and BESREMi.com.
- The Japanese subsidiary, using the U.S. patient support program as a benchmark, has established a Japanese version of the patient support program, including websites and related support activities.

Indicators and Targets

- Number of healthcare professionals (HCPs) reached.
- Number of participants in industry sharing events.

Practices to Ensure Effective Actions

- Regular review of the annual marketing and seminar activity budgets and execution by the Taiwan headquarters and all subsidiary marketing departments and medical affairs teams.
- Regular review of the planning and execution of industry sharing events.

Performance in 2023

- Panco hosted 17 large and small seminars for healthcare professionals and patients to increase their understanding of the disease and medication options, enhancing professional medical knowledge, with a total participation of about 700+ people.
- PharmaEssentia was invited to 3 local empowerment activities.
- Provide summer internship program to nurture new talent in the industry.

Communication with Stakeholders

- Regular and irregular communications with patients/public/community/industry stakeholders in various formats including social media updates.
- Regular and irregular continuing education events for healthcare professionals

Future Planning

2024

Taiwan:
- Continuously to provide the latest educational messages through MPN.
- Continue collaborating with TMPNA to organize patient education events.
- Collaborate with Chiayi Chang Gung Memorial Hospital to provide educational support activities.

USA:
- Continue promoting the "Patient Support Program SOURCE" to serve American patients.

Japan:
- Promote patient support program plans to help patients understand diseases and reduce out of pocket expenses.

Mid-Term Goals for 2025-2027:

- Continue collaborating with patient groups in various countries to promote BESREMi® and related educational activities, strengthening the correct concepts of disease treatment.
- Continuously to enhance diverse activities and stakeholder reconciliation, reaching more local medical organizations.
- Promote patient support programs in other countries where BESREMi® is marketed to increase global coverage.
- Accelerate research and development of BESREMi® in other MPN disease areas to expand BESREMi® treatment options.
- Track international initiatives, review resources and benefits that can be invested.
- Assist Taiwan patient groups in connecting with international patient groups and share treatment experiences.

Long-Term Goals for 2030:

- Expand the establishment of comprehensive rare disease medical care and community participation in all countries where BESREMi® is marketed, enhancing the company's positive contribution and impact on the global rare disease healthcare system and the overall social i ndustry.
- Assist Taiwan patient groups in connecting with international patient groups and share treatment experiences.

Empowerment Programs along the Value Chain GRI 413-1, 413-2

PharmaEssentia actively participates in empowerment programs and key activities at every stage of the value chain, such as establishing an innovation research center utilizing artificial intelligence for new drug development, helping the American MPN Research Foundation to establish a clinical trial search tool, setting up patient support programs in Taiwan, the USA, and Japan, and enhancing drug accessibility for financially needy patients, gradually expanding to other countries. For patients already using BESREMi, a series of health promotion activities are planned to extend their medication period and perfect the overall treatment process.

Medicine Accessibility Program

This initiative aims to assist patients experiencing financial difficulties in accessing medical resources, thereby enhancing their right to access medication.

Health Promotion

For patients already using BESREMI, comprehensive care is provided to extend the duration of medication use. This includes guidance on medication knowledge and strategies to prolong the usage period effectively.

PharmaEssentia aspires to be a pioneer driving industry growth and has always been committed to participating in community co-learning and sharing initiatives. For example, the plant manager was invited to speak at the "Innovative Pharmaceutical Industry Chain Link International Competitiveness Promotion Project" seminar to exchange practical GMP process change management, promoting industry quality enhancement and to BIO Asia–Taiwan 2023, the largest biotech exhibition in Asia and a key industry exchange platform, to discuss biotechnology techniques and trends, fostering learning and sharing in the biotechnology field. The director of the Sustainability Center was invited to the "Biomedical Products Industry Low Carbon Transformation Initiative - Green Manufacturing Technology and Carbon Reduction Practice Community" to share experiences in promoting sustainable development, fostering co-operation and symbiosis in the biotech industry, while also offering a summer internship program to cultivate new industry talent. To date, the company's operations have not caused any negative impacts on the local community.

6.4 Public Welfare Activities

3

Sponsors biodiversity, health, and cultural social welfare initiatives, reducing carbon emissions by 18,841 kilograms of CO_2e.

Since the establishment of the Sustainability Development Center, PharmaEssentia has responded to the United Nations SDG3 initiative through internal educational training and external social participation. In 2023, we contributed to society by sponsoring funds and investing human resources. The following project sponsorship details:

1

Sponsorship of the International Jane Goodall Institute for Biodiversity Advocacy Activities

Environmental awareness starts young, beginning with elementary school students on campus, striving to inspire their passion for diverse plant conservation education. The goal is to cultivate like-minded young green leaders, encouraging everyone to take action from a young age to care for the Earth and improve the environment. In 2023, PharmaEssentia sponsored the Jane Goodall Institute with NT$100,000, and staff from the Sustainability Development Center actually visited to help advocate for biodiversity. The activity involved four elementary schools, impacting over 152 students and teachers.

This activity not only creates a positive corporate image of the company, but also echoes the goals of the United Nations SDGs 3, 4, 13 and 15, as well as the WHO One Health Initiative and the Convention on Biological Diversity, such as promoting the conservation of plant diversity to ensure sustainable medical resources and ecosystems, educating people about the importance of plant diversity to promote sustainable use of natural resources, and protecting plant diversity to help maintain ecological balance and prevent ecosystem degradation, while promoting soil conservation and water management.

2 Sponsor the OneSong Orchestra New Year Charity Concert for 5 consecutive years to support the promotion of local culture

In order to support enterprises to promote the development of local culture and practice the Code of Practice for Corporate Sustainable Development of Listed and OTC Companies, PharmaEssentia has sponsored the OneSong Orchestra New Year Concert for 5 consecutive years. By supporting the development of culture and arts, it can not only cultivate employees' personal body and mind, combine work and rest, balance life and workplace relationships, but also promote a new ecology of integration and common good, and shape the positive image of the company. In 2023, we sponsored about NT$1 million for this philanthropic activity and invited the company's employees participating in the planning of the marketing department, with a total of 26 participants.

Music is an integral component of the cultural sector. Hosting music concerts and cultural events not only draws tourists and audiences but also generates economic value and job prospects, while fostering urban economic growth and cultural and social progress. Consequently, this philanthropic endeavor is in alignment with the objectives of both United Nations Sustainable Development Goals (SDGs) 8 and 11.

3 Continuing to sponsor the Digital Humanitarian Association's Rural Elderly Health Promotion Charity Events

Adhering to our entrepreneurial mission and commitment to access to healthcare, we prioritize patients and strive to transform innovative science into medical solutions that bring shared value to patients, aiming to promote human health and well-being. We have chosen to adopt telemedicine to support regions with insufficient medical service capacity, particularly focusing on the elderly population in rural areas, which aligns with our MPN -PV service group. This initiative aims to facilitate patients' timely and equitable access to healthcare resources.

Through the Rural Telehealth Elderly Health Promotion Charity Project proposed by the Wacare team of the Digital Humanitarian Association, in the remote tribal communities of Taitung County, Taiwan, which are most lacking in medical resources, we provide diversified medical resource services such as telemedicine, health promotion applications, online LIVE courses, and consultations with medical experts through digital technology. This initiative aims to provide more comprehensive support and timely care to the elderly vulnerable groups in rural areas. In 2023, a total of NT$450,000 was sponsored, and staff from the Sustainable Development Center visited the sponsored locations, reaching over 60 individuals. The project estimates a Social Return on Investment (SROI) of 5.438 for the current year.

In the Rural Elderly Health Promotion Charity Project, we have also addressed several United Nations goals, including SDGs 3, 4, 5, 8, 10, 11, 13, and 17. By utilizing digital platform resources and introducing services, we have significantly increased the accessibility of medical resources at project sites while eliminating disparities in medical care resources. Through monthly remote health promotion courses and online discussion forums, we provide educational empowerment courses for caregivers, eradicate gender discrimination, enhance caregivers' gender awareness and sensitivity, and increase employment opportunities for online health instructors. Additionally, through online teaching methods, we have significantly reduced transportation carbon emissions. According to statistics, emissions can be reduced by approximately 18,841.40 kilograms of CO_2e.

Appendix 1 GRI Standards Index

- Statement of Use: PharmaEssentia has reported in accordance with the RI Standards for the period from 1/1/202 to 12/31/2023
- GRI 1 used:Foundation 2021
- Applicable GRI sector standard(s):None

GRI 2: General disclosures 2021		
Disclosure	Location	Page
2-1 Organizational details	Forward 3. ABOUT PHARMAESSENTIA	6
2-2 Entities included in the organization's sustainability reporting	Forward 1. ABOUT THIS REPORT	3
2-3 Reporting period, frequency and contact point	Forward 1. ABOUT THIS REPORT	3
2-4 Restatements of information	Forward 1. ABOUT THIS REPORT	3
2-5 External assurance	Forward 1. ABOUT THIS REPORT	3、134
2-6 Activities, value chain and other business relationships	Forward 3. ABOUT PHARMAESSENTIA	7
2-7 Employees	5.2 DIVERSITY AND INCLUSION	88
2-8 Workers who are not employees	5.2 DIVERSITY AND INCLUSION	89
2-9 Governance structure and composition	2.1 CORPORATE GOVERNANCE FRAMEWORK	29
2-10 Nomination and selection of the highest governance body	2.1 CORPORATE GOVERNANCE FRAMEWORK	29
2-11 Chair of the highest governance body	2.1 CORPORATE GOVERNANCE FRAMEWORK	29
2-12 Role of the highest governance body in overseeing the management of impacts	1.2 SUSTAINABLE GOVERNANCE ORGANIZATIONAL STRUCTURE	13
2-13 Delegation of responsibility for managing impacts	1.3 MANAGEMENT OF MATERIALITY ASSESSMENT	15
2-14 Role of the highest governance body in sustainability reporting	1.2 SUSTAINABLE GOVERNANCE ORGANIZATIONAL STRUCTURE	13
2-15 Conflicts of interest	2.1 CORPORATE GOVERNANCE FRAMEWORK	30

GRI 2: General disclosures 2021		
Disclosure	Location	Page
2-16 Communication of critical concerns	1.3 MANAGEMENT OF MATERIALITY ASSESSMENT 1.4 STAKEHOLDER ENGAGEMENT AND ALIGNMENT	15 23
2-17 Collective knowledge of the highest governance body	1.2 SUSTAINABLE GOVERNANCE ORGANIZATIONAL STRUCTURE 2.1 CORPORATE GOVERNANCE FRAMEWORK	13 29
2-18 Evaluation of the performance of the highest governance body	2.1 CORPORATE GOVERNANCE FRAMEWORK	32
2-19 Remuneration policies	2.1 CORPORATE GOVERNANCE FRAMEWORK	32
2-20 Process to determine remuneration	2.1 CORPORATE GOVERNANCE FRAMEWORK 5.2 DIVERSITY AND INCLUSION	32 92
2-21 Annual total compensation ratio	5.2 DIVERSITY AND INCLUSION	93
2-22 Statement on sustainable development strategy	Forward 2. MESSAGE FROM MANAGEMENT TEAM	4-5
2-23 Embedding policy commitments	2.3 RISK MANAGEMENT 2.7 ETHICAL MARKETING OF PHARMACEUTICALS CH3 DRUG QUALITY AND SAFETY MANAGEMENTS 4.1 ENVIRONMENTAL IMPACT AND MANAGEMENT IN PRODUCTION PROCESS CH5 FOSTERING A CORPORATE CULTURE OF EMPLOYEE WELL-BEING CH6 CONTRIBUTORS PARTICIPATING IN SOCIETY	36 43 44 63 84 112

GRI 2: General disclosures 2021		
Disclosure	Location	Page
2-24 Processes to remediate negative impacts	2.3 RISK MANAGEMENT 2.7 ETHICAL MARKETING OF PHARMACEUTICALS CH3 DRUG QUALITY AND SAFETY MANAGEMENTS 4.1 ENVIRONMENTAL IMPACT AND MANAGEMENT IN PRODUCTION PROCESS CH5 FOSTERING A CORPORATE CULTURE OF EMPLOYEE WELL-BEING CH6 CONTRIBUTORS PARTICIPATING IN SOCIETY	36 43 44 63 84 112
2-25 Processes to remediate negative impacts	1.3 MANAGEMENT OF MATERIALITY ASSESSMENT 2.3 RISK MANAGEMENT 3.4 SUSTAINABLE SUPPLY CHAIN MANAGEMENT	17 37 60
2-26 Mechanisms for seeking advice and raising concerns	2.3 RISK MANAGEMENT 3.4 SUSTAINABLE SUPPLY CHAIN MANAGEMENT	36 58-59
2-27 Compliance with laws and regulations	2.4 COMPLIANCE WITH LAWS AND REGULATIONS	38
2-28 Membership associations	2.1 CORPORATE GOVERNANCE FRAMEWORK	32
2-29 Approach to stakeholder engagement	1.4 STAKEHOLDER ENGAGEMENT AND ALIGNMENT	23
2-30 Collective bargaining agreements	The company has not established a labor union, so there is no group agreement. Regular labor-management meetings have been held as one of the communication channels for employees	-

GRI standard	Disclosure	Location	Page
Material topics			
GRI 3: Material topics 2021	3-1 Process to determine material topics	1.3 MANAGEMENT OF MATERIALITY ASSESSMENT	16
	3-2 List of material topics	1.3 MANAGEMENT OF MATERIALITY ASSESSMENT-List of material topics	21
1. Drug Safety and Quality Management			
GRI 3: Material topics 2021	3-3 Management of Material topics	1.3 MANAGEMENT OF MATERIALITY ASSESSMENT 3.2 DRUG QUALITY AND PRODUCT SAFETY	15 49
GRI 416: Customer Health and Safety 2016	416-2 Incidents of non-compliance concerning the health and safety impacts of products and service	3.2 DRUG QUALITY AND PRODUCT SAFETY 3.3 DRUG SAFETY MANAGEMENT AND PATIENT SAFETY MONITORING	49 54
GRI 417: Marketing and Labeling 2016	417-2 Incidents of non-compliance concerning product and service information and labeling	3.3 DRUG SAFETY MANAGEMENT AND PATIENT SAFETY MONITORING No incidence happened	54
2. Talent Attraction and Retention			
GRI 3: Material topics 2021	3-3 Management of Material topics	1.3 MANAGEMENT OF MATERIALITY ASSESSMENT 5.4 TALENT ATTRACTION AND RETENTION	15 99
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	5.2 DIVERSITY AND INCLUSION-Ratio of new employees to new employees	92
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	5.4 TALENT ATTRACTION AND RETENTION	101
	401-3 Parental leave	5.4 TALENT ATTRACTION AND RETENTION	102

GRI standard	Disclosure	Location	Page
2. Talent Attraction and Retention			
GRI 202: Market presence 2016	202-1Ratios of standard entry level wage by gender compared to local minimum wage	5.2 DIVERSITY AND INCLUSION-Remuneration system	92
3. Business Ethics and Integrity			
GRI 3: Material topics 2021	3-3 Management of Material topics	1.3 MANAGEMENT OF MATERIALITY ASSESSMENT 2.7 ETHICAL MARKETING OF PHARMACEUTICALS	15 43
4. Human Capital Development			
GRI 3: Material topics 2021	3-3 Management of Material topics	1.3 MANAGEMENT OF MATERIALITY ASSESSMENT 5.3 TALENT CULTIVATION AND CAREER PROGRESSION	15 94
GRI 404: Training and education 2016	GRI 404-1Average hours of training per year per employee	5.3 TALENT CULTIVATION AND CAREER PROGRESSION-Statistics on the number of hours of education and training	98
	GRI 404-2Programs for upgrading employee skills and transition assistance programs	5.4 TALENT ATTRACTION AND RETENTION-Employee Assistance Program	103
	GRI 404-3Percentage of employees receiving regular performance and career development reviews	5.3 TALENT CULTIVATION AND CAREER PROGRESSION-Performance appraisal and promotion system	98

GRI standard	Disclosure	Location	Page
5. Access to Healthcare			
GRI 3: MATERIAL TOPICS 2021	3-3 Management of Material topics	1.3 MANAGEMENT OF MATERIALITY ASSESSMENT 6.1 ACCESS TO HEALTHCARE	15 113
6. Innovation & Business Models			
GRI 3: MATERIAL TOPICS 2021	3-3 Management of Material topics	1.3 MANAGEMENT OF MATERIALITY ASSESSMENT 3.1 NEW DRUG RESEARCH AND DEVELOPMENT AND INNOVATION MANAGEMENT	15 45
7. Patient Engagement and Community Empowerment			
GRI 3: MATERIAL TOPICS 2021	3-3 Management of Material topics	1.3 MANAGEMENT OF MATERIALITY ASSESSMENT 6.3 GLOBAL LOCALIZATION EMPOWERMENT AND MEDEICAL ENHANCEMEMNT	15 121
GRI 413: Local communities 2016	413-1Operations with local community engagement, impact assessments, and development programs	6.3 GLOBAL LOCALIZATION EMPOWERMENT AND MEDEICAL ENHANCEMEMNT	122
	413-2Operations with significant actual and potential negative impacts on local communities	6.3 GLOBAL LOCALIZATION EMPOWERMENT AND MEDEICAL ENHANCEMEMNT	122
8. Environmental Impact Assessment during drug Manufacturing Processes			
GRI 3: MATERIAL TOPICS 2021	3-3 Management of Material topics	1.3 MANAGEMENT OF MATERIALITY ASSESSMENT 4.1 ENVIRONMENTAL IMPACT AND MANAGEMENT IN PRODUCTION PROCESS	15 63

Appendix 2 United Nations Global Compact Comparison Table

Category	10 principles	Referenced chapter/description	Page
Human rights	(1) Businesses should support and respect the protection of internationally proclaimed human rights	5.1 HUMAN RIGHTS ASSURANCE The Company abides by the UN Global Compact, Universal Declaration of Human Rights and"International Labour Convention" and other international human rights convention	85-86
	(2) Make sure that they are not complicit in human rights abuses		
Labor	(3) Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining	5.1 HUMAN RIGHTS ASSURANCE Hold regular labor-management meetings	86
	(4) The elimination of all forms of forced and compulsory labor	5.1 HUMAN RIGHTS ASSURANCE There were no incidents of forced labor, child labor, or discrimination	86
	(5) The effective abolition of child labor		
	(6) The elimination of discrimination in respect of employment and occupation		
Environment	(7) Businesses should support a precautionary approach to environmental challenges	4.2 CLIMATE ACTION We have introduced an ISO management system related to the environment and a Climate-related Financial Disclosure Recommendation (TCFD) as a disclosure framework	65
	(8) Undertake initiatives to promote greater environmental responsibility	4.6 WASTE MANAGEMENT, 4.7 MANAGEMENT OF TOXIC AND CONCERNED CHEMICAL SUBSTANCES In addition to complying with laws and regulations, we will do a good job in waste management and control, and require manufacturers to implement and prevent the leakage of chemical poisons, and fulfill our commitment to environmental friendliness	79 82
	(9) Encourage the development and diffusion of environmentally friendly technologies		
Anti-corruption	(10) Businesses should work against corruption in all its forms, including extortion and bribery	2.2 BUSINESS INTEGRITY AND CODE OF CONDUCT, 2.4 WITH LAWS AND REGULATIONS Leverage (United Nations Convention against Corruption, UNCAC) to be guiding principle for the setup of Company's anti-corruption guidance	35 38

Appendix 3 SASB Index

Code	Accounting metrics	Referenced Chapter & Page Number / Disclosure	Corresponding SDGs	Page
		Topic: Safety of Clinical Trial Participants		
HC-BP-210a.1	Discussion, by world region, of management process for ensuring quality and patient safety during clinical trials	3.3 DRUG SAFETY MANAGEMENT AND PATIENT SAFETY MONITORING Monitoring activities are currently carried out by external commissioned research institutes (CROs) and are managed under internal standard operating procedures. There are currently no clinical trial cases with CROs for violating Good Clinical Practice (GCP).		54
HC-BP-210a.2	Number of FDA Sponsor Inspections related to clinical trial management and pharmacovigilance that resulted in: (1) Voluntary Action Indicated (VAI) and (2) Official Action Indicated (OAI)	not happened in 2023		-
HC-BP-210a.3	Total amount of monetary losses as a result of legal proceedings associated with clinical trials in developing countries	not happened in 2023		-
		Topic: Access to Medicines		
HC-BP-240a.1	Description of actions and initiatives to promote access to health care products for priority diseases and in priority countries as defined by the Access to Medicine Index	6.1 ACCESS TO HEALTHCARE In accordance with the framework of the Access to Medicine Index, the Group's access to healthcare strategy, implementation plan, annual results and future goals are formulated, and implemented through drug license acquisition, application, medical and patient exchanges and academic seminars		113~116
HC-BP-240a.2	List of products on the WHO List of Prequalified Medicinal Products as part of its Prequalification of Medicines Programme (PQP)	After BESREMi® is listed in the United States, the company's products were not listed		-
		Topic: Affordability & Pricing		
HC-BP-240b.1	Number of settlements of Abbreviated New Drug Application (ANDA) litigation that involved payments and/or provisions to delay bringing an authorized generic product to market for a defined time period	Not happened in 2023		-
HC-BP-240b.2	Percentage change in: (1) average list price and (2) average net price across U.S. product portfolio compared to previous year	6.1 ACCESS TO HEALTHCARE Besremi went public in the U.S. in 2022, with 2023 being its first full year on the market. Weighted Average Cost and net price change % for2023 vs 2022 is: (3) List price: 7.46% (4) Net price: 5%		116~117
HC-BP-240b.3	Percentage change in: (1) list price and (2) net price of product with largest increase compared to previous year			

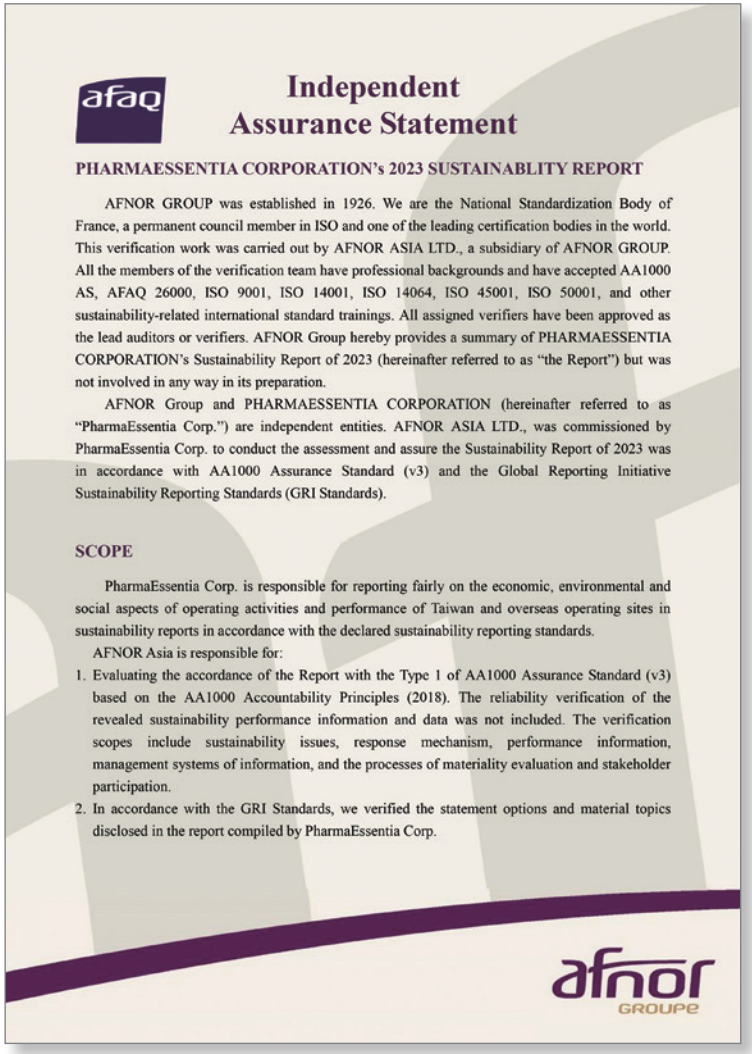
Code	Accounting metrics	Referenced Chapter & Page Number / Disclosure	Corresponding SDGs	Page
		Topic: Drug Safety		
HC-BP-250a.1	List of products listed in the Food and Drug Administration's (FDA) MedWatch Safety Alerts for Human Medical Products database	3.3 DRUG SAFETY MANAGEMENT AND PATIENT SAFETY MONITORING Not happened in 2023		54~56
HC-BP-250a.2	Number of fatalities associated with products as reported in the FDA Adverse Event Reporting System			
HC-BP-250a.3	Number of recalls issued; total units recalled			
HC-BP-250a.4	Total amount of product accepted for takeback, reuse, or disposal			
HC-BP-250a.5	Number of FDA enforcement actions taken in response to violations of current Good Manufacturing Practalsoics (cGMP), by type			
		Topic: Counterfeit Drugs		
HC-BP-260a.1	Description of methods and technologies used to maintain traceability of products throughout the supply chain and prevent counterfeiting	3.3 DRUG SAFETY MANAGEMENT AND PATIENT SAFETY MONITORING Establish a product traceability mechanism for the global supply chain, standardize the part number, batch number and factory activity records of each batch of drugs, ensure the basic principles of product batch code such as batch flow and traceability, and the operating procedures for product batch release. At present, drug serialization has been introduced, and the packaging and serialization operation process of outsourcing factories has been standardized, so as to achieve the purpose of completely tracing the flow direction and use records of individual products.		56
HC-BP-260a.2	Discussion of process for alerting customers and business partners of potential or known risks associated with counterfeit products	3.3 DRUG SAFETY MANAGEMENT AND PATIENT SAFETY MONITORING When the drug notification is received, the clinical assurance department will conduct an investigation and initiate the product recall procedure and recall action. According to the hazard level of the drug, remove the product from the use within the time limit, properly dispose of the recycled, and take the initiative to notify the local competent authority		55~56
HC-BP-260a.3	Number of actions that led to raids, seizure, arrests, and/or filing of criminal charges related to counterfeit products	Not happened since BESREMi® listed in the US		-
		Topic: Ethical marketing		
HC-BP-270a.1	Total amount of monetary losses as a result of legal proceedings associated with false marketing claims	2.7 ETHICAL MARKETING OF PHARMACEUTICALS Not happened since BESREMi® listed in the US		43
HC-BP-270a.2	Description of code of ethics governing promotion of off-label use of products	2.7 ETHICAL MARKETING OF PHARMACEUTICALS PharmaEssentia strictly adheres to the WHO and pharmaceutical marketing ethics standards of various countries, and advocates through education, training and laws and regulations to ensure that employees interact with medical professionals in accordance with reasonable norms and relevant drug and medical regulations.		43

Code	Accounting metrics	Referenced Chapter & Page Number / Disclosure	Corresponding SDGs	Page
		Topic: Employee Recruitment, Developing & Retention		
HC-BP-330a.1	Discussion of talent recruitment and retention efforts for scientists and research and development personnel	5.2 DIVERSITY AND INCLUSION, 5.4 TALENT ATTRACTION AND RETENTION Through remuneration and benefits, friendly environment, humanized management, smooth internal rotation and training and development, etc., we create a stable working environment for talent retention. We recruit biomedical and R&D talents in various professional fields, and actively recruit medical clinical and global management professionals.		91 99
HC-BP-330a.2	(1) Voluntary and (2) involuntary turnover rate for: (a) executives/senior managers, (b) midlevel managers, (c) professionals, and (d) all others	5.2 DIVERSITY AND INCLUSION In 2023, a total of 515 employees will be reported at the border, and 52 will leave. 10% turnover rate; The voluntary turnover rate was 6.8 per cent and the involuntary turnover rate was 3.2%		92
		Topic: Supply Chain Management		
HC-BP-430a.1	Percentage of (1) entity's facilities and (2) Tierl suppliers' facilities participating in the Rx-360 International Pharmaceutical Supply Chain Consortium audit program or equivalent thirdparty audit programs for integrity of supply chain and ingredients	3.4 SUSTAINABLE SUPPLY CHAIN MANAGEMENT At present, there is no plan to join the Rx-360 International Pharmaceutical Supply Chain Alliance, but official institutions (such as EMA and TFDA) have their relevant GDP specifications to ensure the operation of the drug distribution, storage, management supply chain, and conduct regular audits, certification and certification updates, and regularly conduct suppliers/contractor assessments every year, and adopt two major systems: internal assessment and on-site audit.		57
		Topic: Business Ethics		
HC-BP-510a.1	Total amount of monetary losses as a result of legal proceedings associated with corruption and briber	2.2 BUSINESS INTEGRITY AND CODE OF CONDUCT PharmaEssentia currently does not have any such incidents or associated costs.		35
HC-BP-510a.2	Description of code of ethics governing interactions with health care professionals	2.2 BUSINESS INTEGRITY AND CODE OF CONDUCT, 2.7 ETHICAL MARKETING OF PHARMACEUTICALS The Company strictly complies with the provisions of all applicable industry norms when marketing and sales, and ensures that all relevant personnel receive appropriate training and comply with the spirit of ethical norms.		35、43
		Activity Metrics		
HC-BP-000.A	Number of patients treated	6.1 ACCESS TO HEALTHCARE As of the end of 2023, the total number of patients using BESREMi® has exceeded 6,200.		113
HC-BP-000.B	Number of drugs (1) in portfolio and (2) in research and development (Phases 1-3)	3.1 NEW DRUG RESEARCH AND DEVELOPMENT AND INNOVATION MANAGEMENT		45~48

Appendix 4 TCFD Index

Elements	code	TCFD recommended disclosures	Referenced chapters/descriptions	Page
Governance	TCFD 1(a)	Describe the board's oversight of climate-related risks and opportunities	4.2 CLIMATE ACTION-Governance The Board of Directors is the highest governance, supervision and decision-making unit. Make climate governance a material theme, and integrate existing operating models to manage climate-related risks and opportunities	65
	TCFD 1(b)	Describe management's role in assessing and managing climate-related risks and opportunities	4.2 CLIMATE ACTION- Governance The Sustainable Development Center and its five functional groups are responsible for identifying climate-related risks and opportunities, implementing and promoting climate-related plans, and the Center for Sustainable Development reports to the Board of Directors on a quarterly basis	65
Strategy	TCFD 2(a)	Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term	4.2 CLIMATE ACTION-Strategy	65
	TCFD 2(b)	Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	4.2 CLIMATE ACTION-Strategy To explore the potential financial impact of climate risks and opportunity categories on PharmaEssentia, and to establish corresponding response/adaptation actions	65
	TCFD 2(c)	Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	4.2 CLIMATE ACTION-Strategy Based on the results of major climate risk identification, the resilience of PharmaEssentia's climate governance was reviewed	65
Risk management	TCFD 3(a)	Describe the organization's processes for identifying and assessing climate related risks	4.2 CLIMATE ACTION-Risk management The Sustainable Development Center and the five functional groups will assess the likelihood, impact degree, and occurrence time of climate-related risks and opportunities	72
	TCFD 3(b)	Describe the organization's processes for managing climate-related risks.	4.2 CLIMATE ACTION-Risk management With the goal of integrating climate governance into sustainability management and operation planning, and listing climate governance as a material topic the climate risk control authority and responsibility units include the board of directors, the audit office, the head of corporate governance, the environmental friendliness team of the Center for Sustainable Development, the greenhouse gas inventory promotion team of the Taichung plant, and external professional consultants	72
	TCFD 3(c)	Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.		
Metrics and targets	TCFD 4(a)	Disclose the metrics used by the organization to assess climate related risks and opportunities in line with its strategy and risk management process.	4.2 CLIMATE ACTION-Indicators and targets Regularly track energy use and greenhouse gas emissions.	73
	TCFD 4(b)	Disclose Scope 1, Scope 2, and, if appropriate, Scope 3	4.3 ENERGY MANAGEMENT The Taichung Plant, the main production base, was the pilot plant for the ISO 14064-1:2018 GHG inventory, revealing GHG emissions in Category 1, Category 2, Category 3 (raw material transportation, product transportation, waste transportation, employee travel), and Category 4 (raw material upstream and waste disposal).	74
	TCFD 4(c)	Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	4.2 CLIMATE ACTION-Indicators and targets The intensity of energy use and greenhouse gas emissions is used as a tracking indicator, and various energy conservation and carbon reduction measures are used to improve the efficiency and effectiveness of energy conservation. Subsequent analysis of risk and	73

Appendix 5 Statement of Independent Assurance OPINION



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Independent Assurance Statement

PHARMAESSENTIA CORPORATION's 2023 SUSTAINABLITY REPORT

AFNOR GROUP was established in 1926. We are the National Standardization Body of France, a permanent council member in ISO and one of the leading certification bodies in the world. This verification work was carried out by AFNOR ASIA LTD., a subsidiary of AFNOR GROUP. All the members of the verification team have professional backgrounds and have accepted AA1000 AS, AFAQ 26000, ISO 9001, ISO 14001, ISO 14064, ISO 45001, ISO 50001, and other sustainability-related international standard trainings. All assigned verifiers have been approved as the lead auditors or verifiers. AFNOR Group hereby provides a summary of PHARMAESSENTIA CORPORATION's Sustainability Report of 2023 (hereinafter referred to as "the Report") but was not involved in any way in its preparation.

AFNOR Group and PHARMAESSENTIA CORPORATION (hereinafter referred to as "PharmaEssentia Corp.") are independent entities. AFNOR ASIA LTD., was commissioned by PharmaEssentia Corp. to conduct the assessment and assure the Sustainability Report of 2023 was in accordance with AA1000 Assurance Standard (v3) and the Global Reporting Initiative Sustainability Reporting Standards (GRI Standards).

SCOPE

PharmaEssentia Corp. is responsible for reporting fairly on the economic, environmental and social aspects of operating activities and performance of Taiwan and overseas operating sites in sustainability reports in accordance with the declared sustainability reporting standards.

AFNOR Asia is responsible for:

1. Evaluating the accordance of the Report with the Type 1 of AA1000 Assurance Standard (v3) based on the AA1000 Accountability Principles (2018). The reliability verification of the revealed sustainability performance information and data was not included. The verification scopes include sustainability issues, response mechanism, performance information, management systems of information, and the processes of materiality evaluation and stakeholder participation.
2. In accordance with the GRI Standards, we verified the statement options and material topics disclosed in the report compiled by PharmaEssentia Corp.

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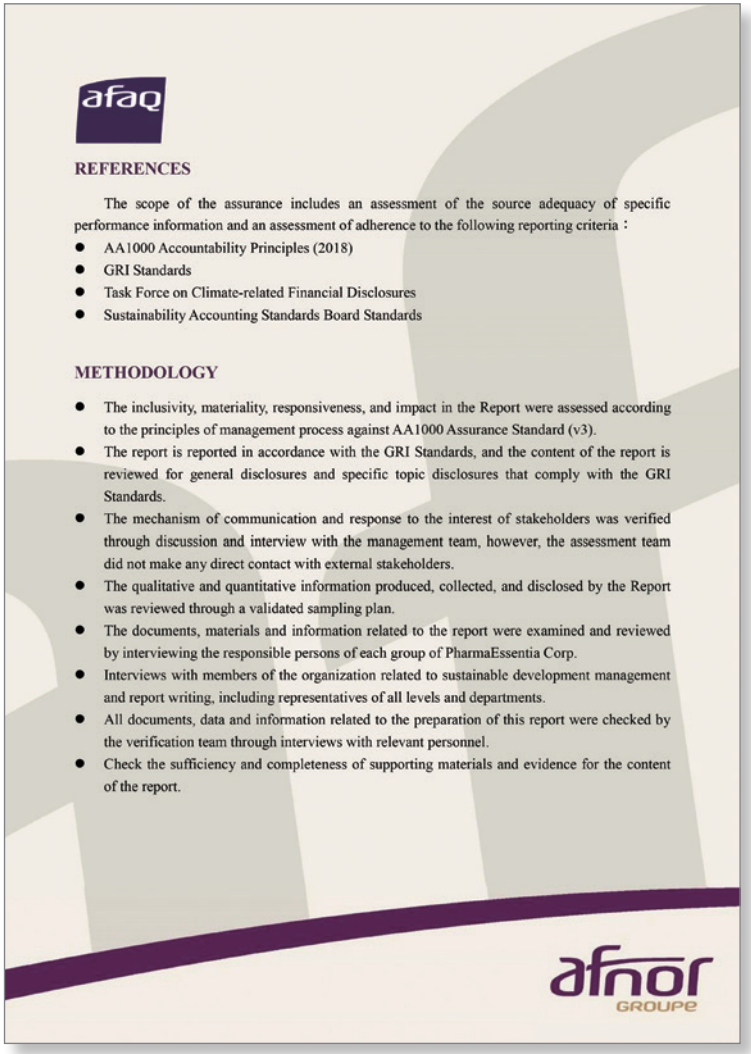

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REFERENCES

The scope of the assurance includes an assessment of the source adequacy of specific performance information and an assessment of adherence to the following reporting criteria：

- AA1000 Accountability Principles (2018)
- GRI Standards
- Task Force on Climate-related Financial Disclosures
- Sustainability Accounting Standards Board Standards

METHODOLOGY

- The inclusivity, materiality, responsiveness, and impact in the Report were assessed according to the principles of management process against AA1000 Assurance Standard (v3).
- The report is reported in accordance with the GRI Standards, and the content of the report is reviewed for general disclosures and specific topic disclosures that comply with the GRI Standards.
- The mechanism of communication and response to the interest of stakeholders was verified through discussion and interview with the management team, however, the assessment team did not make any direct contact with external stakeholders.
- The qualitative and quantitative information produced, collected, and disclosed by the Report was reviewed through a validated sampling plan.
- The documents, materials and information related to the report were examined and reviewed by interviewing the responsible persons of each group of PharmaEssentia Corp.
- Interviews with members of the organization related to sustainable development management and report writing, including representatives of all levels and departments.
- All documents, data and information related to the preparation of this report were checked by the verification team through interviews with relevant personnel.
- Check the sufficiency and completeness of supporting materials and evidence for the content of the report.

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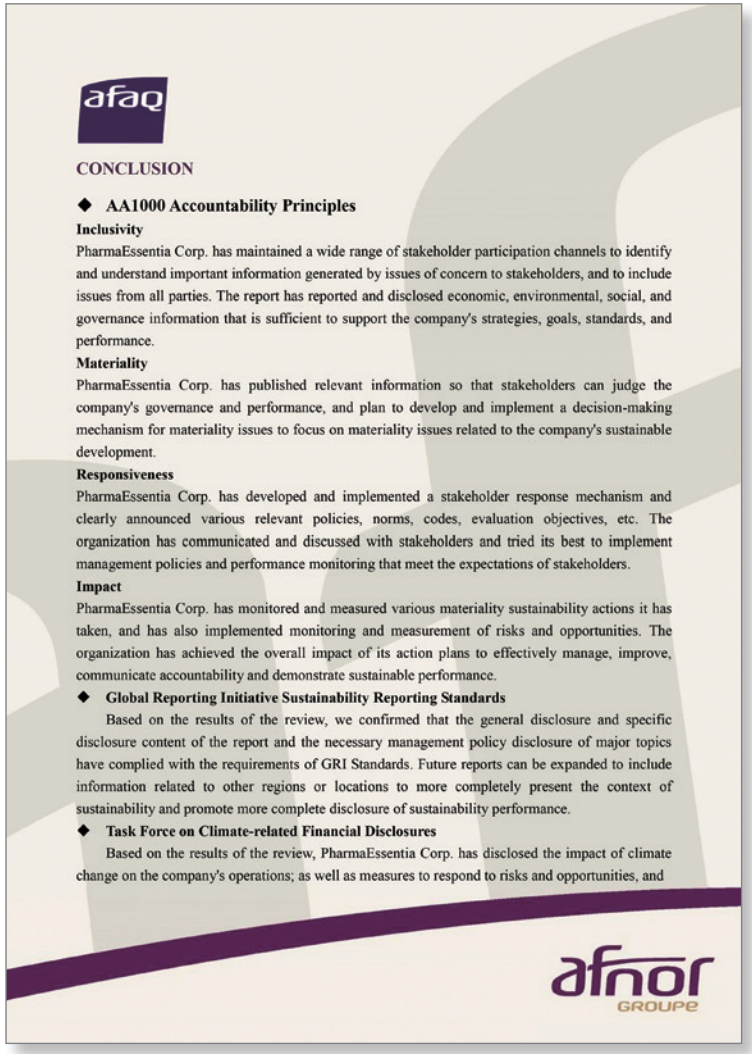
Appendix 5 Statement of Independent Assurance OPINION



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CONCLUSION

◆ **AA1000 Accountability Principles**

Inclusivity

PharmaEssentia Corp. has maintained a wide range of stakeholder participation channels to identify and understand important information generated by issues of concern to stakeholders, and to include issues from all parties. The report has reported and disclosed economic, environmental, social, and governance information that is sufficient to support the company's strategies, goals, standards, and performance.

Materiality

PharmaEssentia Corp. has published relevant information so that stakeholders can judge the company's governance and performance, and plan to develop and implement a decision-making mechanism for materiality issues to focus on materiality issues related to the company's sustainable development.

Responsiveness

PharmaEssentia Corp. has developed and implemented a stakeholder response mechanism and clearly announced various relevant policies, norms, codes, evaluation objectives, etc. The organization has communicated and discussed with stakeholders and tried its best to implement management policies and performance monitoring that meet the expectations of stakeholders.

Impact

PharmaEssentia Corp. has monitored and measured various materiality sustainability actions it has taken, and has also implemented monitoring and measurement of risks and opportunities. The organization has achieved the overall impact of its action plans to effectively manage, improve, communicate accountability and demonstrate sustainable performance.

◆ **Global Reporting Initiative Sustainability Reporting Standards**

Based on the results of the review, we confirmed that the general disclosure and specific disclosure content of the report and the necessary management policy disclosure of major topics have complied with the requirements of GRI Standards. Future reports can be expanded to include information related to other regions or locations to more completely present the context of sustainability and promote more complete disclosure of sustainability performance.

◆ **Task Force on Climate-related Financial Disclosures**

Based on the results of the review, PharmaEssentia Corp. has disclosed the impact of climate change on the company's operations; as well as measures to respond to risks and opportunities, and

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the financial performance affected by scenario settings. In the future, it will continue to describe the performance of related measures to respond to risks and opportunities.

◆ **Sustainability Accounting Standards Board Standards**

Based on the results of the review, PharmaEssentia Corp. has made disclosures with reference to the sustainable accounting indicators and activity indicators of SASB standards; in the future, periodic statistics on quantitative activity indicators can be carried out to make the disclosed information more comparable.

ASSURANCE OPINION

Afnor Group has developed a complete sustainability reporting assurance standard based on the verification guidelines of the AA1000 Assurance Standard (v3) and the GRI Standards. Based on the sufficient evidence provided by PharmaEssentia Corp. and the facts seen during on-site verification, we adhere to the principle of fairness and issue a statement on the global sustainability reporting standards followed by the organization.

In our opinion, the information and data presented in the Report by PharmaEssentia Corp. provides a fair and balanced representation. We believe the focuses on economic, social, and environmental matters in PharmaEssentia Corp. in 2023 are well represented.

ASSURANCE LEVEL

In accordance with the AA1000 Assurance Standard (v3), we verified this assurance statement corresponding to a moderate level. The scope and methods are as described in this statement.

LIABILITY

This assurance statement is intended for the use of PharmaEssentia Corp. only. AFNOR is not responsible for any other uses. Our responsibility is only based on the scope and methodology described, and to provide stakeholders an independent assurance statement.

For and on behalf of AFNOR：

Patrick Ni

Patrick Ni
The Director for Certification and Assessment
APR.26.2024

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AFNOR Asia Ltd.—20F, No. 102, Chung Ping Rd., Taoyuan, Taiwan
Tel.：+886 3 2208080, Fax：+886 3 2204866, http://www.asia.afnor.org

afnor GROUPE

PharmaEssentia

PharmaEssentia Corporation

Address	13F., No. 3, Park St., Nangang Dist., Taipei City 115, Taiwan (R.O.C) (Nangang Software Park, Building F)
Phone	+886-2-2655-7688
Email	CSR-ESG@pharmaessentia.com
Company	www.pharmaessensentia-esg.com