

Major Branch Institutions

- PT. QMB NEW ENERGY MATERIALS CO., LTD.
- SHU POWDERS SA
- GEM Hong Kong International Co., Limited
- Jingmen GEM New Materials Co., Ltd.
- GEM (Wuxi) Energy Materials Co., Ltd.
- Taixing Xinxin Resource Recycling Co., Ltd.
- Fuan Qingmei Energy Materials Co., Ltd.
- GEM (Wuhan) New Energy Vehicle Service Co., Ltd.
- Wuhan Power Battery Regeneration Technology Co., Ltd.
- GEM (Tianjin) Urban Mineral Recycling Industry Development Co., Ltd.
- Jiangxi Green Recycling Co., Ltd.
- Hubei Green Tungsten Resource Recycling Co., Ltd.
- Henan Mutong Environmental Protection Industry Co., Ltd.
- Inner Mongolia Xinchuang Resource Regeneration Co., Ltd.
- GEM Recycling (Hunan) Resource Utilization LLC.

**2023**

**Environmental, Social, and Governance Report**

**GEM Co., Ltd.**

GEM Co., Ltd.

2023 Environmental, Social, and Governance Report



Electronic ESG Report



GEM Co., Ltd. WeChat Official Account

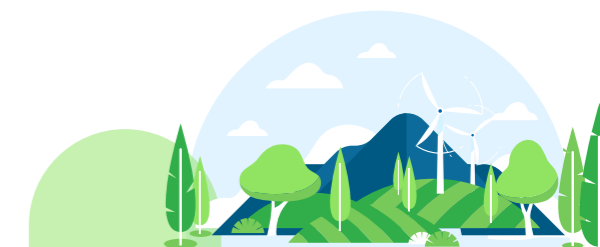


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## About the Report

The Report marks the 14th consecutive annual release by GEM Co., Ltd. since 2010, following the paradigm of annual report to disclose content on sustainable development. The Report is designed to objectively and fairly illustrate the environmental, social and governance (ESG) performance of GEM Co., Ltd. and its subsidiaries in 2023, disclosing the Company's principles, established management methods, implemented initiatives, and achievements in sustainability to stakeholders. For corporate governance, it is recommended that this document be read in conjunction with the 2023 Annual Report of GEM Co., Ltd.

### Report Scope

Organizational scope of the Report: The Report covers GEM Co., Ltd. and its subsidiaries. For ease of expression and reading, "GEM Co., Ltd." in the Report is referred to as "GEM", "the Company" or "We".

### Period of Coverage

The Report covers the period from January 1, 2023 to December 31, 2023. In consideration of continuity and comparability of disclosed information, components of the information extend beyond or prior to this period in terms of disclosure time.

### Report Preparation Basis

The Report is prepared in accordance with the Shenzhen Stock Exchange Social Responsibility Instructions to Listed Companies (2006) and Attachment 1 Disclosure Requirements for Social Responsibility Reports of Listed Companies of the Self-discipline Supervision Guidelines No. 1 for Listed Companies of the Shenzhen Stock Exchange (Revised in December 2023). The Report is prepared with reference to the Global Reporting Initiative (GRI) Sustainability Reporting Standards (2021 edition) (referred to as "GRI Standards"), the Sustainable Development Goals of the United Nations (UN SDGS), Ten Principles of the United Nations Global Compact (UNGCC), IFRS Sustainability Disclosure Standards 2 - Climate Related Disclosures (IFRSS2), and topics highlighted by MSCI ESG ratings.

### Reporting Principles

#### Materiality

The Company identifies material topics related to its own business operation and concerned about by stakeholders and carries out research on ESG matters having a significant impact on stakeholders. For the analysis process and results of the topics, please refer to the "Material Topics" chapter of the Report.

#### Quantitative

The Report discloses ESG quantitative performance indicators during the Reporting Period and discloses the corresponding historical data to the extent possible. The statistical and disclosure methods of the same indicators in different reporting periods are consistent in the Report.

#### Consistency

Any change in statistical and disclosure methods in the Report will be fully explained in the notes to the Report.

### Balance

The Report objectively discloses positive and negative information to ensure that the content impartially shows the Company's ESG performance during the Reporting Period.

### Definition of Report Content and Topics

Referring to relevant regulations and standards at home and abroad, and following the principles of stakeholder participation, the Company adheres to its own socially responsible concept of "realizing the unity of social responsibility and enterprise benefits by high-tech and economic recycling." The Company also follows the global concept of sustainable development, and expounds the specific practices and achievements of environmental protection, carbon reduction, social responsibility and corporate governance during the Reporting Period. Lastly, the Company stands by the material topics disclosed in the Report after review by the Company's management and assessment by stakeholders.

### Reporting Data

The data quoted in the Report are mainly obtained by statistical analysis of relevant information. The operating data are mainly derived from the audited 2023 Audit Report of GEM Co., Ltd. and 2023 Annual Report of GEM Co., Ltd. In case of any discrepancy between the relevant financial data and the annual report, the annual report shall prevail.

### Contact

We value the opinions from our stakeholders, and readers are welcomed to contact us by the following methods.  
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Contact number: 0755-33386666  
E-mail: info@gem.com.cn

### Access to the Report

At present, the Report is available in simplified Chinese, English, Japanese, Korean and Indonesian, including paper and PDF electronic versions. The PDF electronic version can be downloaded from GEM's official website ([www.gem.com.cn](http://www.gem.com.cn)). For the paper version, please call (+86) 0755-33386666.



## GEM Lives up to a Beautiful World!

**GEM 格林美**  
资源有限 循环无限  
Recycling for future!



### **Indonesian President Joko Widodo Met with Professor Xu Kaihua, Board Chairman of GEM**

During the G20 Summit in 2022, President Joko Widodo of Indonesia met with participating representatives of Chinese entrepreneurs. Shaking hands with Professor Xu Kaihua, Board Chairman of GEM, he praised GEM's investment in technology and culture in Indonesia.



**On February 2, Indonesia held a Chinese New Year prayer meeting. Chairman Xu Kaihua attended as the only invited Chinese entrepreneur. Indonesian presidential candidate (now Indonesia's newly elected president) Mr. Prabowo shook hands and exchanged words with the GEM chairman Xu Kaihua.**

# Chairman's Message

## Walking the business path of kindness and green

In 2023, the keyword for the global industry was "intense competition", from China to the whole world.

In the era of intense competition, no one is self-sufficient alone, but we still cannot forget about greenness, kindness, and the disadvantaged.

In 2023, the story of GEM began with a sudden fire at the factory in Taixing Economic Development Zone, Jiangsu Province, China. At around 12:00 on January 7, the auxiliary manganese-copper comprehensive recovery and purification workshops of the factory in Taixing Economic Development Zone, Jiangsu Province, caught fire due to unauthorized welding operations, temporarily getting out of control. Government leaders stood with us around the clock, jointly dealing with the darkest moments, experiencing mental hardships. We promptly disclosed complete and truthful information to society; we timely treated tens of thousands of tons of solid waste and wastewater, avoiding secondary disasters to society; we transformed the fire-affected area into a Safety and Environmental Protection Park, permanently preserving the traces of the fire and the burnt facilities as a permanent memory and lesson for GEM people. The harrowing experience of fire and firefighting made us deeply reflect on the serious deficiencies in safety management of the Company, deeply reflect on the impact of the fire on society and investors, profoundly promote all GEM people to value safety management from the bottom of our hearts, and once again realize the pivotal role of the government in emergency incidents. The government is always a warm spring, and we must love the government!

In 2023, it is destined to be a year of trials and opportunities.

"Forge ahead by further expanding industry through challenges and breaking through for new opportunities" is the key phrase of GEM for 2023. In 2023, the high-pressure hydrometallurgy (HPAL) project for laterite nickel ore invested by GEM in Indonesia, after four years, successfully completed debugging, ramping up, reaching production, and overproduction, becoming the world's first successful laterite nickel ore high-pressure hydrometallurgy (HPAL) project with independent technology, design, and operation by an enterprise. The project's investment returns and product quality are world-class, with recovery rates for nickel, cobalt, and manganese exceeding 95%, showcasing GEM's tremendous success in HPAL engineering technology.

During the successful development of the laterite nickel ore hydrometallurgy project in Indonesia, we have been contemplating one question: What answers should Chinese companies provide when going global?

Our answer is that Chinese companies should invest in building factories overseas, solve the key contradictions between supply and demand of important minerals in China, and leave behind a flexible force of "technology + culture" to seek long-term development overseas, implementing a balanced development model of "getting and giving".

The flexible force model for overseas expansion of integration of "industry, technology, and culture" advocated by the Company has been proven by three years of practice to be the desire of the people and has been widely recognized by various sectors in China and Indonesia.

In 2023, the GEM-led "Indonesian Government-GEM-Central South University Joint Training Engineering Master International Class" completed the enrollment and commencement of the 28 students in the third phase. So far, 80 students have been recruited in three phases. The first phase of 22 students graduated as scheduled in June 2022 and moved into important metallurgical positions in Indonesia, growing into Indonesia's first batch of hydrometallurgy engineers. In 2023, the Company expanded the "Indonesian Government-GEM-Central South University Joint Training Engineering Master International Class" from "1" to "1+N" training mode, expanding enrollment from the major of new energy materials and metallurgical engineering technology to three majors including transportation and international trade in non-ferrous metals, released the "Hundred Thousand Talent Cultivation Plan" to "cultivate 100 engineering doctoral students, 1,000 engineering masters, and 10,000 skilled workers", creating a highlight of the "Belt and Road" initiative in science, technology, and culture, and providing strong talent support for Indonesia's economic and social development in all aspects.

On November 6, 2023, GEM and Bandung Institute of Technology in Indonesia and Central South University in China signed an agreement to jointly build the "China-Indonesia Joint Research Laboratory for New Energy Materials and Metallurgical Engineering Technology". This is the first joint scientific laboratory in the history of China-Indonesia cooperation, aiming to create a world-class engineering technology joint laboratory, provide key technical support for Indonesia's electrification strategy and high-quality development of mineral resources, and contribute to the construction of a global community of shared future for mankind.

Over the past four years, we have witnessed a phenomenon in Indonesia, that is, Indonesia has abundant nickel resources, but it has always been dominated by European and American companies and Chinese enterprises in developing downstream products. Can Indonesia independently develop downstream products with its own nickel resources? GEM's answer is: Yes. In October 2023, GEM initiated a new cooperation model with local nickel mine owners in Indonesia of "resources + technology". Under the witness of Indonesian President Joko, GEM and Indonesia's local nickel mine owner MDK jointly established a company called ESG, becoming the first project in Indonesian history to produce new energy raw materials from laterite nickel ore controlled by Indonesian local mine owners, promoting the deep integration of Chinese technology and Indonesian resources, conveying the investment concept of GEM of "integration of industry, technology, and culture, and growing together with Indonesia", and achieving a balance of "getting and giving".

During the process of these technological and cultural exchanges, we have always felt the strong support from the Indonesian government, Indonesian business community, Indonesian universities, and Chinese universities. They have always stood with us, jointly promoting this cross-border technological and cultural exchange. Mr. Luhut, the leader of China-Indonesia cooperation and Minister for Maritime Affairs and Investment Coordination of Indonesia, is a staunch promoter of China-Indonesia technological and cultural exchanges. Even when he was hospitalized due to illness, he still cared and worried about the growth of the students. Mr. Garibaldi Thohir, Chairman of the Indonesian Chamber of Commerce in China, and Ms. Lin Youna, Deputy Secretary-General of the Secretariat of the China-Indonesia High-Level Dialogue Mechanism, have always been staunch supporters and disseminators of China-Indonesia technological and cultural exchanges. Professor Yi Hong of Central South University personally led a team to Indonesia in December 2023 to visit the government, universities, and business community, providing a platform for the alumni company - GEM to develop technological and cultural exchanges in Indonesia, spreading the strength of Chinese universities supporting Indonesian education.

No matter how busy or difficult it is, we have not ignored the disadvantaged who need help. In 2023, we invested more than RMB36.26 million, making efforts to assist disadvantaged groups and underdeveloped regions. We supported more than

17,000 people in seven villages in underdeveloped areas of China, helping them to cultivate farmland, build cultural squares, and household roads; we cared for 87 elderly widows and widowers and 221 needy families, helping them out of their difficult living conditions, letting them feel the light of happiness in the festival; we sponsored 36 special needy students, enabling them to successfully enter universities. Bit by bit, we have been striving to make a difference. Do not underestimate small acts of kindness. Let social responsibility be realized, and let the warm sunshine illuminate every corner.

We express our gratitude to all stakeholders in the global industrial chain and their consensus and support for GEM's ESG values! Thanks to all investors, shareholders, and directors of GEM for their support of the global layout of GEM's green industry! We appreciate the hard work and dedication of all GEM employees!

### In 2024, let us join hands to build hope amidst conflicts and competition!

Regional conflicts are escalating, and the industry competition is becoming increasingly bloody;  
Both good and bad are possible;  
The light of hope will never extinguish;  
The green tide is unstoppable;  
Walking the business path of kindness, towards innovation;  
Facing the sea, spring blossoms!

### Professor Xu Kaihua, Founder of GEM

- 40 years of research, teaching, and industrialization experience in the recycling technology industry
- Special allowance expert of the State Council
- National consultation expert in the field of circular economy
- Founder of the National Research Center of E-waste
- Recycling Engineering Technologies
- Part-time Professor in Metallurgy, Central South University
- Part-time Professor, Bandung Institute of Technology, Indonesia
- Winner of National Scientific and Technological Progress Award (for 2010 and 2018)
- Vice President of the China Association of Circular Economy
- Industry Consultant for the Shenzhen Stock Exchange



## Annual Topics

### Topic 1

### Integration of Industry, Technology, and Culture, and Growing Together with Indonesia

Under the guidance of the "Belt and Road" initiative, GEM has seized the opportunity and shouldered significant responsibilities. We have established our own model for overseas expansion, successfully integrating geopolitics, industries, research and development, humanities, culture, and Indonesia deeply.

Since 2019, GEM has been forging ahead and breaking through barriers in its overseas endeavors, adhering to the investment concept of "integration of industry, technology, and culture, and growing together with Indonesia". We have planned to invest a total of USD3 billion (with a production value of USD6 billion) in Indonesia to establish the world-class laterite nickel ore new energy material full industrial chain demonstration park - GEM QMB (Indonesia) Park. By the end

of the Reporting Period, under the witness of President Joko of Indonesia, GEM and MDK have signed a joint venture agreement, reaching a level of operation that is at the forefront globally. GEM's growth alongside Indonesia has contributed significantly to promoting exchanges in industry, technology, and culture between China and Indonesia, becoming one of the highlights of China-Indonesia friendly exchanges and cooperation, attracting worldwide attention.

In September 2023, Mr. Xu Kaihua, Chairman of the Company, accompanied Premier Li Qiang of the State Council on a visit to Indonesia, attending the Indonesia-China Entrepreneur Exchange Conference and reporting to the Premier on GEM's achievements in cultural exchanges in Indonesia.



Premier Li Qiang shakes hands with Mr. Xu Kaihua, Chairman of the Company.

### Topic 1

### Industrial Integration - Pioneering a New Era of Cooperation Between Chinese and Indonesian Enterprises

In 2023, the Company initiated a new cooperation model with Indonesian local mine owners, focusing on "resources + technology". This initiative aims to establish the first demonstration project of laterite nickel ore hydrometallurgy process for new energy raw materials, controlled by an Indonesian local enterprise. It represents a further deepening of cooperation between Indonesia's resource advantages and China's engineering and technical advantages. This effort has achieved historic milestones for the high-quality development of Indonesia's resources.

Under the witness of Indonesian President Joko, GEM and Indonesia's local nickel mine owner MDK jointly established a company called ESG, becoming the first project in

Indonesian history to produce new energy raw materials from laterite nickel ore controlled by Indonesian local mine owners, promoting the deep integration of Chinese technology and Indonesian resources, achieving mutual accomplishments between GEM and Indonesian local enterprises, consolidating the historic cooperation between GEM and the Indonesian business community, conveying the investment concept of GEM of "integration of industry, technology, and culture, and growing together with Indonesia", and contributing to Indonesia's industrial upgrade of direct production of new energy raw materials from laterite nickel ore, thereby advancing Indonesia's development process in the field of new energy.



Under the witness of President Joko of Indonesia, GEM and MDK sign a joint venture agreement.

Topic 1

### Technological Integration - Empowering Innovation in Indonesian Metallurgical Engineering and New Energy Materials

Since 2019, GEM has established the first world-class Laterite Nickel Ore Hydrometallurgy and New Energy Material Technology Research Center in Indonesia. This initiative has facilitated advancements in Indonesian metallurgical engineering and new energy material innovation to reach world-class levels. Additionally, the Company has built Indonesia's first world-class nickel industry museum.

On November 6, 2023, GEM and Bandung Institute of Technology in Indonesia and Central South University in China jointly built the "China-Indonesia Joint Research Laboratory for New Energy Materials and Metallurgical Engineering Technology". This is the first joint scientific laboratory in the history of China-Indonesia cooperation, aiming to create a world-class engineering

technology joint laboratory, engaging in innovative research in key areas such as mineral resource development, new energy materials, resource recycling, green technology, ESG and sustainable development. Furthermore, GEM and Bandung Institute of Technology signed a scholarship donation agreement, marking the first scholarship program established by a Chinese enterprise in an Indonesian university. This initiative supports outstanding students at Bandung Institute of Technology to study in China and assists financially disadvantaged students in completing their education. These efforts provide key technical support for Indonesia's electrification strategy and high-quality development of mineral resources, and contribute to the construction of a global community of shared future for mankind.



Professor Xu Kaihua, Chairman of GEM (left), and Prof. Reini Wirahadikusumah, Ph.D., President of Bandung Institute of Technology (right), sign the Memorandum of Understanding (MoU) for the Tripartite Joint Construction of the "China-Indonesia New Energy Materials and Metallurgical Engineering Technology Joint Research Laboratory" between GEM, Bandung Institute of Technology, and Central South University.

On January 17, 2024, the Analysis and Testing Center of QMB (Indonesia) was accredited by the China National Accreditation Service for Conformity Assessment (CNAS), making it the first laboratory in Indonesia to simultaneously obtain the four CNAS certifications of "laterite nickel ore, crude nickel hydroxide, and nickel sulfate and water quality". It is also one of the laboratories in Indonesia to obtain the CNAS international laboratory qualification certification in the shortest time, taking only six

months and five days from registration to certification. QMB will use its CNAS certification as a new starting point to continuously improve the quality management and technical level of its laboratories, led by the Analysis and Testing Center. It will further enhance international exchanges and cooperation, and strive to build the world-class Laterite Nickel Ore Hydrometallurgy and New Energy Material Engineering Technology Research Center through innovation-driven approaches.

Topic 1

### Cultural Integration - Cultivating Local Talents in Indonesia

In 2023, the GEM-led "Indonesian Government-GEM-Central South University Joint Training Engineering Master International Class" completed the enrollment and commencement of the third phase. The Company transitioned from "1" to "1+N" training mode, expanding enrollment from the major of new energy materials and metallurgical engineering technology to three majors including transportation and international trade in non-ferrous metals, released the "Hundred Thousand Talent Cultivation Plan" to

"cultivate 100 engineering doctoral students, 1,000 engineering masters, and 10,000 skilled workers", creating a highlight of the "Belt and Road" initiative in science, technology, and culture, offering Chinese language training crash courses for Joint Training Master Class's students and GEM Indonesian youth, and providing strong talent support for Indonesia's economic and social development in all aspects.



Professor Guo Xueyi, Vice President of Central South University (6th from right in the front row), Prof. Cheng Qiongwen of the School of Metallurgy and Environment of Central South University (6th from left in the front row), Prof. Min Xiaobo, Dean of the School (4th from right in the front row), and Dr. Zhang Kun, Deputy General Manager of GEM (5th from right in the front row), Etc., take a group photo with 28 new students of the third GEM-Central South University-Indonesian Government Joint Training International Metallurgical Engineering Master Class.



The GEM-Central South University-Indonesian Government Joint Training Metallurgical Engineering Master Class Chinese-language Training Project (Phase I) Commencement Ceremony.



Chorus of the song "Friendship Forever"



Outstanding students of the Chinese language training crash course receive recognition on stage.

Looking ahead, GEM will expand its nickel resource projects in Indonesia and develop high-tech entities such as ternary precursor materials as leverage. We will continue to actively implement the "Eight Actions", promote high-quality joint construction of the "Belt and Road" initiative between China and Indonesia, compose a new chapter in China-Indonesia

exchanges in technology and culture, contribute positively to the construction of a new era China-Indonesia community with a shared future and a global community of shared future for mankind, and jointly promote the next golden decade of high-quality development of the "Belt and Road".

Topic 2

## Towards "Greenness", Towards Innovation

For over 20 years, GEM has been moving towards "greenness" and innovation.

We utilize innovative technologies to turn waste into green products, employing recycled metals such as nickel, cobalt, and manganese. Based on different downstream application scenarios, we arrange elements in a structured manner to transform them into precursor materials with different structures and properties as needed. We integrate the green concept into every aspect of ecological construction in the park, extensively designing artificial wetlands and using recycled plastic to recreate ecological wood, achieving the integration of production, life, and ecology. We have established a large-scale environmental monitoring center to monitor the disposal of wastewater, waste residue, and solid waste, conducting 24/7 online monitoring and real-time uploading to the internet, disseminating information to the entire society.

We have vigorously advanced the upgrading of environmental protection facilities and refined management practices, from retrofitting equipment and precisely controlling air valves in front-end collection

systems to managing the operation of end-treatment facilities, ensuring that environmental control systems always operate effectively and that pollutant emissions consistently meet low concentration standards. In 2023, the environmental management control center of GEM was upgraded, integrating systems such as environmental cloud, online monitoring, and video surveillance to build a digital environmental information management platform. This realized the visualization and informatization of park environmental management, playing a supervisory, inspection, coordination, dispatch, and command center role in the Group's environmental operation management process. It safeguarded the Company's green and high-quality development.

The Company actively carried out energy conservation and emission reduction projects, such as replacing motors with permanent magnet versions, converting forklifts from diesel to electric, improving processes by reducing water usage in washing processes, centralizing supply of materials by implementing a centralized cooling system, and building a pure water plant.



GEM Environmental Monitoring Center

Topic 2



GEM "Dual Carbon" Building

GEM has constructed a 5000-square-meter green park dedicated to bringing joy to families and building harmonious parent-child relationships. The entire green park is made from recycled automobile parts, embodying the green circular concept of 100% waste recycling. The overall design concept of the park is to use old resources to create stylish and artistic amusement facilities through artistic creation. The park gate is composed of more than 200 discarded car

tires, forming an "M" shape, symbolizing GEM's determination to adhere to the exploitation of "urban mines". The giant gorilla "King Kong" on the left is also made from discarded car tires, symbolizing humanity as the righteous defender of the Earth's environment. The cute "Big-eyed Dolls" on the right are made from automotive parts and represent a happy family of three.



Opening Ceremony of the Green Park



GEM Park Ecological Environment



Topic 3

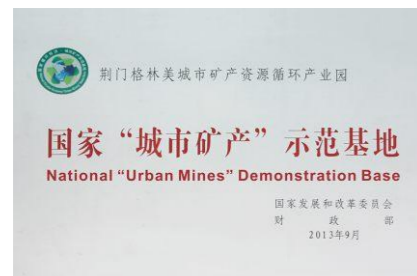
## Deepening Circular Economy, Promoting Trillion-level "Trade-in" Implementation

For over 20 years, GEM has been committed to the construction of a recycling system, a green disposal system, and a resource utilization system for resource circulation. We have become a world-class electronic waste recycling and disposal enterprise, a green disposal enterprise for scrapped automobiles, and a green recycling and disposal enterprise for retired power batteries, creating globally leading models such as the full life cycle industrial chain of "scrap products - recycling and

dismantling - resource utilization - modified regeneration - new products" for electronic waste and the new energy full life cycle value chain of "used battery recycling - material remanufacturing - material remanufacturing - battery pack remanufacturing - reuse - cascade utilization". We have deepened the culture of recycling for many years and become a base for the promotion of the social circular economy in China.

### The Base for the Promotion of the Social Circular Economy in China

- National Green Factory and Environmental Facility Open Unit
- National Circular Economy Education Demonstration Base
- National "Urban Mines" Demonstration Base
- National Primary and Secondary School Environmental Education Social Practice Base
- National Eco-environmental Popular Science Base



The Company is a pioneer in China's urban mining and a leader in global urban mining. After over 20 years of efforts and accumulation, the Company has built a leading multi-level, cross-regional waste recycling, logistics, and green disposal system in China, possessing globally leading technologies for harmless disposal and resource utilization. It enjoys a high reputation in China's waste recycling field and serves as an excellent base for promoting and popularizing China's circular economy and ecological civilization education. The Fourth

Meeting of the Central Financial and Economic Committee proposed the strategy of "promoting large-scale equipment renewal and the trade-in of consumer goods" and issued the Action Plan for Promoting Large-scale Equipment Renewal and the Trade-in of Consumer Goods. GEM's extensive layout of waste recycling networks, globally leading green recycling technologies, and urban mining extraction system will be well-aligned with this new historical opportunity for the "trade-in" initiative.

Topic 3

On the morning of April 2, 2024, Zheng Shanjie, Director of the National Development and Reform Commission, chaired the first thematic seminar on large-scale equipment renewal and the trade-in of consumer goods. As the only private enterprise in the recycling field, GEM, along with strategic partners such as JD Group, Midea Group, Haier Group, Gree Electric Appliances, and Yadea Technology, attended the seminar. They engaged in in-depth discussions and exchanges on the demands and suggestions for the consumer goods trade-in work.

As of April 2024, GEM and JD Group signed the Strategic Cooperation Agreement on Co-building Circular and Digital Supply Chain and Waste Recycling Platform, and GEM's subsidiary, GER, signed the Cooperation Agreement on Midea's China Regional User Service Green Recycling Project, creating a powerful green recycling circle. Leveraging resource and capability advantages, we will jointly build a circular and digital supply chain and waste recycling platform, promoting green recycling of waste household appliances.



GEM signs a strategic cooperation agreement with JD Group.



GER receives and processes waste home appliances recycled by Midea Group.

Topic 4

## High-Quality Governance, Constructing a Company Culture of Integrity

As a member of the United Nations Global Compact (UNGC), we firmly believe that business ethics are the cornerstone of corporate development and a key element for societal harmony. With the deepening of globalization, enterprises need to operate in different cultural and legal backgrounds.

While pursuing economic performance, it is imperative to adhere to ethical principles, ensuring fairness, transparency, and legality in business practices. Only with steadfast moral convictions, upright intentions, and vigorous energy can enterprises sustainably develop.



GEM launched the "Procurement Management, Project Management" Inspection Storm Conference.

In 2023, The Company initiated a comprehensive "Procurement Management, Project Management" inspection storm, establishing a special working group led by the Group's chairman, with full participation from the Board of Supervisors. The Intendance Department, Internal Audit Department, along with the Finance Department and Human Resources Department, jointly launched an unprecedented campaign to rectify discipline and promote integrity. Through comprehensive management inspections and rectifications, the combat effectiveness and fighting spirit of management personnel were significantly enhanced. This action effectively

curbed various forms of corruption, improved corporate management efficiency, and normalized such management practices. Through a series of actions, eight cases of corruption were verified and handled, with severe penalties imposed on 14 implicated individuals, including the dismissal of 11 individuals. Additionally, two contracts related to corruption were terminated or not renewed, and six categories totaling 1095 unqualified suppliers were removed, successfully recovering a total of RMB4.885 million in economic losses caused by corrupt practices.

Topic 4

In 2023, to strengthen the anti-corruption front, we focused on cultivating employees' awareness of integrity and self-discipline from the source. Through organizing thematic training sessions, legal publicity campaigns, and other series of activities, we continuously reinforced employees' understanding and adherence to upright behavior. In particular, for key position employees, we implemented one-on-one integrity education to ensure that each employee maintains high standards in their professional conduct. We comprehensively implemented anti-unfair competition agreements in all subsidiary companies, ensuring that all employees 100% completed anti-corruption training, demonstrating our firm determination to combat corruption. GEM's anti-corruption efforts are not confined to internal management; our journey of integrity extends to external relations. We continuously improve procurement regulations to ensure transparency and fairness in bidding and tendering, advocating anti-corruption policies and procedures to 945 cooperation partners. We conduct regular reviews of all suppliers, expose non-compliant suppliers,

thereby strengthening compliance management in the supply chain. Utilizing digitalization in anti-corruption efforts, we launched an advanced digital procurement collaborative platform (SRM system) to manage supplier admission and review. Through on-site inspections and assessments, supplier lists are released regularly to ensure the cleanliness and efficiency of supply chain management. Each firm step taken has fortified the Group's unassailable reputation and set a clean example for the entire business ecosystem. The Company was awarded the "2023 Outstanding Practice Case of Listed Company Board of Directors" and "Best Practice Case of Listed Company Board of Directors Office in 2023" by the China Association for Public Companies. In 2024, the Company successfully joined the China Enterprise Anti-Fraud Alliance (CEAFA) through review, aiming to collaborate with the alliance to combat fraud and promote the construction of a culture of integrity.



GEI 格林美  
资源有限 循环无限  
Recycling for future!

格林美股份有限公司

GEM joined the CEAFA.

Topic 5

## Taixing Park's Rebirth from the Ashes, Embarking on a High-Quality Development Journey

GEM Co., Ltd.'s subsidiary, GEM (Jiangsu) Cobalt Industry Co., Ltd. (hereinafter referred to as Taixing Park), experienced a fire in the manganese-copper comprehensive recovery and purification workshops, an auxiliary process for cobalt production, on January 7, 2023, around 12:00. The local fire department promptly arrived to rescue. Professor Xu Kaihua, and Ms. Wang Min, Co-founder of the Group and Director, rushed to Taixing immediately, activating the emergency response plan and mobilizing various forces including the Group's Safety and Environmental Protection

Department to assemble at the scene. The fire was extinguished on the same day. The fire was caused by unauthorized hot work by contractor units, resulting in the destruction of the plant and surrounding ancillary structures. The incident did not spread to other companies and did not cause casualties or environmental pollution events. After days and nights of active rectification, the core production line of Taixing Park resumed production on February 27, 2023.

### Facing the problem squarely, timely disclosure of progress

After the accident, GEM faced reality, did not evade problems, actively responded to the fire, and promptly disclosed progress. On January 9, 2023, and February 27, 2023, respectively, GEM publicly released the Announcement on the Fire in Some Auxiliary Workshops of the Subsidiary Company

and Announcement on the Progress of the Fire in Some Auxiliary Workshops of Subsidiary Company and the Resumption of Core Production Lines, informing investors and the public of the progress in a timely manner.

### Preventing environmental leaks and secondary disasters

Starting from January 8, Taixing Park implemented a full plant closure, launching a battle to "prevent environmental leaks, prevent secondary disasters, quickly clean up the scene, and resume work and production rapidly". More than 100 engineering vehicles and various emergency supplies were urgently mobilized to clean up the burnt area, completely open the factory area roads; completed a 2.6-kilometer-long "one large and three small" sandbag enclosure in one day and night, consuming more than 30,000 sandbags to prevent the leakage of heavy metal-containing fire-fighting water and environmental risks; drained all the accumulated water in the factory, with a pumping capacity exceeding 20,000 cubic meters; urgently established an

emergency hazardous waste transfer and disposal process, relocating more than 7,500 tons of hazardous waste. On January 17, Taixing Municipal Government issued an opinion on "Terminating the Environmental Emergency Response to the GEM (Jiangsu) Company's Fire Accident", stating that "the atmospheric environment and river water quality have stabilized and met the standards, and the environmental risks caused by the fire accident of GEM (Jiangsu) Company have been eliminated. It is recommended to terminate this environmental emergency response". As of April, Taixing Park has standardized the disposal of secondary hazardous waste totaling 16,465.43 tons and treated 66,237 tons of wastewater.

### Learning from pain, never forgetting the lessons of the fire

On January 14, the Group held a reflection meeting on the accident in Taixing Park, never forgetting the lessons of the "0107" fire, and designated January 7th of each year as a day of reflection, deeply pondering the lessons, keeping the alarm bell ringing, ensuring safety, and preventing accidents. At the same time, the Group's various parks immediately launched a special campaign of "safety rectification, green transformation, and embarking on a new journey of high-quality development", conducting comprehensive rectification activities from eight aspects, including "ideology, facilities, supervision, design, full-process protective measures, construction management, hazardous chemical manufacturing processes, and safety training", to prevent fire accidents from happening again.



GEM's "0107" Fire Accident Reflection and Safety Day Activities

Topic 5

## Focusing on fire rectification, vigorously promoting resumption of work and production

Taixing Park built a Safety and Environmental Protection Square on the site of the fire, with a large screen playing firefighting safety education videos regularly to remind all employees to remember the lessons of the fire and keep the alarm bell ringing. To strengthen fire safety management, Taixing Park invested more than RMB1.3 million to purchase a high-expansion foam fire truck, established a dedicated fire brigade, implemented a 24-hour patrol system in shifts, conducted monthly comprehensive emergency drills for all employees, and improved the emergency response capabilities of all frontline employees. All hazard sources in the park are included in the fire alarm system and connected to the central control center, enhancing firefighting facilities. Additionally, a 100m<sup>3</sup> foam fire station was added to the factory area, foam fire cannons were installed inside and outside the factory buildings, significantly improving firefighting

management facilities. Meanwhile, the Company carried out a special campaign of "safety rectification, green transformation, and embarking on a new journey of high-quality development" across the entire group, conducting in-depth inspections and rectifications from "eight major aspects" to eliminate hidden fire hazards. During the Reporting Period, GEM equipped a total of 19 firefighting vehicles in various chemical parks and core parks, established professional (part-time) fire brigades, and implemented a 24-hour firefighting patrol mechanism. Monthly firefighting training and emergency drills were conducted, effectively enhancing fire awareness and emergency skills. As of March 2024, all core production lines of Taixing Park have resumed production, fully recovering their vitality, and embarking on a new journey of high-quality development!



Panoramic view of the former factory area before the fire



Safety and Environmental Protection Square construction at the site of the Taixing Park fire

The United Nations, with its Sustainable Development Goals (SDGs), calls on the world to act together to eliminate poverty, protect the earth, and improve the lives and future for all peoples world-wide. GEM has fully responded to the SDGs of the United Nations, and has made unremitting efforts to build a global community of shared future for mankind for 22 years.

## Annual ESG Highlights

### Sustainable Operation



- Improved corporate governance system
- Independent directors account for 33% of the Board of Directors
- Female directors account for 33% of the Board of Directors
- Continuous optimization of corporate governance, improvement of internal risk control and external communication, and creation of a sustainable operating ecosystem
- Purchased director and officer liability insurance
- Established a dedicated team responsible for anti-corruption, anti-fraud, and whistleblower acceptance
- Promoted anti-corruption training throughout the entire group, established multiple forms of reporting channels and whistleblower protection mechanisms, and built a clean corporate culture
- Employee anti-corruption training coverage rate of 100%
- External cooperation partner anti-corruption system and procedure coverage rate of 100%.
- Conducted comprehensive rectification activities to promote integrity and discipline, thoroughly checked and rectified all aspects
- Joined the China Enterprise Anti-Fraud Alliance (CEAFA), aiming to collaborate with the alliance to combat fraud and promote the construction of a culture of integrity

### Addressing Climate Change



- Actively promoted a full-circle plan, implemented the concept of recycling, and advanced carbon reduction efforts for core products
- Obtained ISO14067:2018 "Carbon Footprint Certification" for 20 products, and was awarded the title of "Green Design Product" for one product
- 23 companies passed ISO 14001 certification
- 22 companies passed ISO 9001 certification Four companies passed IATF 16949 certification
- Three green supply chain demonstration enterprises; six green factories; one zero-carbon factory
- Used clean energy and implemented energy conservation and emission reduction measures to promoted carbon reduction throughout the product full life cycle
- Cumulative photovoltaic power generation: 21,610 megawatt-hours; purchased green electricity 51,000 megawatt-hours, producing 110,000 tons of steam using biomass as fuel, reducing carbon emissions by approximately 74,250.42 tons in total
- Carbon reduction from recycling business exceeded 715,600 tons

### Innovation and Technology



- R&D investment of RMB1.446 billion
- Continuously build the "Five-in-One" innovation platform
- Established the Group's Central Research Institute
- Jointly established the China-Indonesia Joint Research Laboratory for New Energy Materials and Metallurgical Engineering Technology with Bandung Institute of Technology and Central South University
- Innovated traditional compound system, tackled common technological bottlenecks in the industry, and built an international advanced green leader

### Environmental and Energy Management



- Improved environmental management system and digital platform to achieve comprehensive intelligent management of the park
- Implemented a mechanism for full staff participation in environmental protection management to timely detect and rectify environmental risks and hidden dangers
- Vigorously promoted the upgrading of environmental protection facilities and innovation of environmental management techniques
- Environmental investment of RMB551 million
- Zero environmental accidents; compliance rate of 100%

## Annual ESG Highlights

### Health, Safety, and Quality



- Improved safety management system and digital platform to achieve comprehensive intelligent management of the park
- The digital hazard detection and management system to encourage employees to actively participate in the hazard detection and management work
- Continued to improve the working environment in the workshop to reduce the generation of occupational hazards
- Equipped the park with fire trucks and mini fire stations
- Safety production investment of RMB96.9918 million
- Safety education and training for nearly 217,400 person
- Improved quality management system and built a digital quality management system
- Quality of Magnetic Foreign Matter in the High-nickel Industry Showcases the Leadership in Maintaining Quality Standards in the Industry

### Sustainable Supply Chain



- Promoted forward supplier management to improve the quality of supplier product delivery
- Actively developed circular economy industries such as waste power batteries, electronic waste, scrapped vehicles, and strategic resource recycling of nickel, cobalt, lithium, and tungsten
- Opened up advantageous business equity platforms to achieve integration and symbiosis with upstream and downstream
- Improved service system and enhanced customer satisfaction
- 100% low-risk access to suppliers
- Zero product recall incidents

### Employee Development and Support



- Invested in the Indonesian new energy industry to promote the high-value utilization of mineral resources and drive Indonesian economic growth
- Employed more than 2,000 foreign employees, providing employment for more than 2,000 locals in Indonesia
- Built exclusive dormitories, cafeterias, and prayer rooms for Indonesian employees
- Implemented employee mentorship, conducted talent selection and cultivation for Indonesian youth
- Encouraged female participation in corporate governance to achieve governance diversification
- Employees come from 21 ethnic minorities
- Average employee training time per person is 66 hours
- Conducted three sessions of joint training in metallurgical engineering master's degree, cultivating 80 senior engineering talents in the field of metallurgical engineering and new energy materials business in Indonesia

### Corporate Citizenship and Social Responsibility



- Established Indonesian Master of Metallurgical Engineering and China-Indonesia Language Learning Classes to promote cultural exchanges between China and Indonesia
- Conducted Chinese-Indonesian language courses: 666 hours
- Established a joint laboratory to support innovation in Indonesian metallurgical engineering and new energy materials
- Established factories to spread green energy
- Supported rural revitalization, provided assistance to villagers, and improved the quality of life for farmers
- Invested a total of RMB36.26 million in industrial assistance, rural revitalization, employee assistance, and educational support, benefiting a total of 17,000 people
- Served surrounding communities, conducted language teaching, garbage cleaning, and agricultural technology teaching activities
- Sent more than RMB1 million in gratitude and Spring Festival gifts to employees working abroad
- Organized more than 1,544 public open days, receiving 200,369 visitors

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# About GEM



## Industry Position

In 2023, the Company ranked 484th in China's Top 500 Private Enterprises, and maintained its positions in China's Top 500 Manufacturing Enterprises (371st) and China's Top 500 Private Manufacturing Enterprises (315th). It was also listed in the 2022 Forbes China Sustainable Development Industrial Enterprises TOP50 and the 2022 Hurun China Top 100 Private Enterprises for Sustainable Development (ranking 7th), consolidating its leading position in the global recycling industry and the core position in the new energy industry chain.

- 8 Power battery recycling centers
- 7 Scrapped vehicle recycling and processing centers
- 7 E-waste green processing centers
- 5 Battery material manufacturing centers
- 3 Remanufacturing centers for plastics waste
- 2 Solid waste processing centers
- 1 Cobalt-Nickel-Tungsten Resource Recycling and Utilization Center

**[Name of the Company]** GEM Co., Ltd.  
**[Date Established]** December 28, 2001  
**[Headquarters Address]** 20th Fl, Block A, Rongchao Marina Bay Center, Xinghua Rd, Baoan Dist, Shenzhen, Guangdong, China  
**[Stock Code]** 002340.SZ (Shenzhen Stock Exchange)  
 GEM (SIX Swiss Exchange)

Founded on December 28, 2001, GEM was established in Shenzhen by Professor Xu Kaihua, based on the ideal of Green Eco Manufacture (GEM), listed on the Shenzhen Stock Exchange (stock code: 002340) and the SIX Swiss Exchange. With over **10,000 employees**, it has an annual output value of over **RMB30 billion**. The Company is a pioneer in China in promoting the concept of "limited resources, unlimited recycling" in the green low-carbon industry. It actively advocates for a circular economy by promoting the commercial model of urban mining to "eliminate pollution, recycle resources," and advance the development of a circular society. GEM is a pioneer in urban mining and a promoter of the world's new energy industry. It is a leading global waste recycling industry group, a core supplier of the world's new energy industry, and a leading enterprise in China's circular economy.

In 2003, GEM started from Shenzhen in the south of China and expanded northward and eastward, establishing 19 waste recycling and new energy material manufacturing bases in 11 provinces and cities in China, including Hubei, Hunan, Guangdong, Jiangxi, Henan, Tianjin, Jiangsu, Zhejiang, Shanxi, Inner Mongolia, Fujian, as well as in Indonesia, South Korea, South Africa, and other countries along the "Belt and Road" initiative. Its green development footprint spans the world, covering over **3,000 kilometers** from north to south in China, and over **40%** of China's land area, with cooperation in waste disposal established with over **500 million** people.

## Globalization of GEM

**SHU POWDERS LIMITED**  
Annual production of 1,000 tons of cobalt powder, annual sales income of 30 million US dollars.

**GEM South Africa Durban Park**

**Hungary**

**Korea ECOPRO GEM**

**PT.QMB New Energy Materials**  
GEM plans to build a 150K tons metal basis battery-grade nickel raw material project in Indonesia. The production line of Phase I project (30KT Nickel/a) has been put into operation on September 26, 2022.

**ECOPRO PERMATA CO.,LTD.**  
In 2022, the sales revenue of precursor raw materials for ternary power batteries reached 500 million US dollars.

On 21st Oct. 2019, GEM signed a memorandum of cooperation with the Pohang Government of South Korea and ECOPRO to jointly promote strategic cooperation in the field of new energy vehicle battery cascade utilization and recycling.

GEM plans to build a 100KTA of new generation superior Hi-nickel multi-variant PCAM Plant for secondary power batteries in Saemangeum, South Korea, and 43KTA of this project will be built in phase I.

**G20 INDONESIA 2022**  
17th Nov.2022, Indonesian president Joko Widodo met with Professor Xu Kaihua, Board Chairman of GEM and other Chinese entrepreneurs attending the G20 Summit.

## Development History

December 28, 2001: Registered as Shenzhen Green Eco High-Tech Co., Ltd., witnessed by Professor Yamamoto Ryoich

April 2002: Set up in Taohuayuan Science and Innovation Park, Baoan District, Shenzhen.

January 22, 2010: Listed on the Shenzhen Stock Exchange (A-share).



2010: Nationwide layout initiated to build a core circular industry group.  
2011: Scrap car recycling business started.  
2013: Ternary power battery material remanufacturing business started.

July 28, 2022: Listed on the SIX Swiss Exchange.



September 26, 2022: The QMB (Indonesia) Nickel Resources project went into operation smoothly.



MHP shipments reached 27,050 tons of metal with an overproduction rate of over 30%, and nickel-cobalt-manganese recovery rate exceeded 95%. The second phase of the nickel resource project was fully launched, with the planned total capacity increased from 123,000 metal tons/year to 150,000 metal tons/year.



2003: Started waste battery and cobalt-nickel-tungsten recycling business.  
October 2004: Phase I project of ultra-fine nickel powder production line completed in Jingmen Park.



July 2007: Phase II project of ultra-fine cobalt powder production line completed in Jingmen Park.



2007: Electronic waste recycling business started.  
October 2009: Domestic first process-oriented electronic waste green processing line completed in Jingmen Park.



November 2015: Signed a cooperation agreement with South Korea's ECOPRO on automotive power battery materials, entering the international leading supply chain of new energy industry.



October 2016: Acquired South Africa's SHU POWDERS, becoming the world's largest cobalt powder manufacturer.



2017: Ternary power battery materials entered the international mainstream supply chain.  
September 2018: Cooperated with Tsingshan Industrial, Brup Recycling (CATL holding), Indonesia IMIP Park, and Japan's HANWA to jointly build Indonesia's nickel resource battery material industry park, binding resources and core markets.

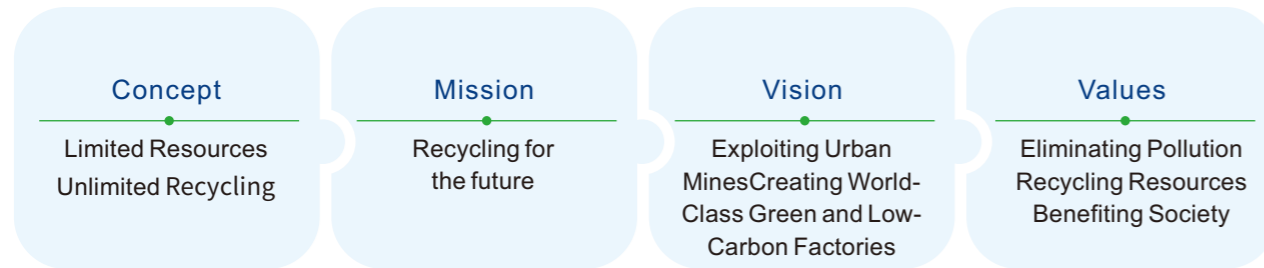


## Corporate Strategy

Green Eco Manufacture (GEM) will adhere to the industry strategy of "urban mining extraction + new energy material manufacturing", implementing super-technological innovation, quality prioritization, and extreme cost reduction plans to enhance the global competitiveness and profitability of its core business. GEM aims to expand the scale of urban mining extraction, mainly focusing on retired power batteries, electronic waste, and scrapped cars, playing a core role in the national strategy of equipment renewal and trade-in. The Company will also expand the manufacturing scale of nickel resources and ternary precursor materials in Indonesia, consolidating its global market position in new energy materials. GEM will steadily implement the zero-carbon plan, nickel-cobalt-lithium resource full-circulation plan, and ESG value enhancement plan to create a world-class green and low-carbon industrial group with a trillion-dollar scale, providing global investors with excellent investment returns and green value.



## Corporate Culture

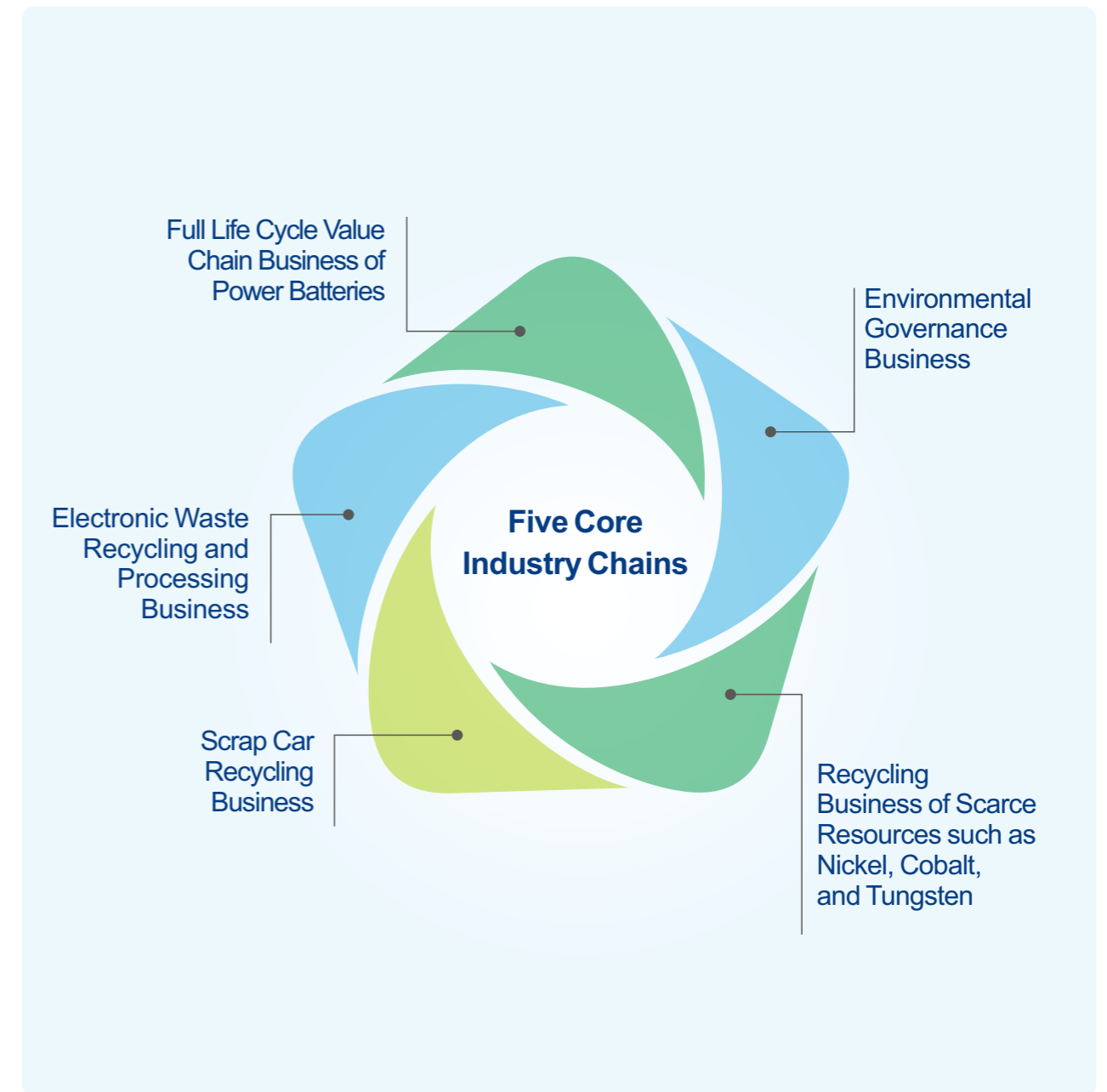


The ten spirits of GEM embrace green development, care about the society, fulfill social responsibilities, display the courage to fight, the boldness to innovate and create a circular culture, which constitutes the unique green culture system of GEM, enabling GEM to stand at the forefront of global industry competition.



## Core Business

In the field of urban mining extraction, the Company focuses on the recycling and processing of typical waste such as retired power batteries, electronic waste, scrapped cars, and plastics, as well as strategic resources including nickel, cobalt, lithium, tungsten, gold, silver, platinum, gallium, germanium, and indium. It mainly engages in the remanufacturing of nickel, cobalt, lithium, tungsten, gold, silver, platinum, palladium, and rare earth resources, as well as the production of ultra-fine cobalt-nickel-tungsten powder materials and modified plastics. In the new energy material manufacturing field, the Company manufactures ternary precursor materials for power batteries, ternary cathode materials, and cobalt tetraoxide for 3C digital batteries, as well as nickel-cobalt-lithium metal products. These are high-quality mainstream products in the global new energy industry, making the Company a core enterprise in the global new energy supply chain.





**Global Leading Position**

- The world's leading e-waste recycling company
- The world's leading enterprise for recycling cobalt, nickel, tungsten,
- The world's leading power battery recycling company
- The world's leading manufacturer of ultra-fine cobalt powder
- The world's leading scrapped car processing company



<h2 style="margin: 0;">Honors and Certifications</h2>		National Green and Low-Carbon Advanced Technology Achievement	Fortune China 500 (Ranked 434th)	Forbes China Lithium Battery Industry Chain TOP100 in 2023
2023 Listed Company Board Excellent Practice Case		Hurun China Energy Private Enterprise TOP100 in 2023	2023 Listed Company ESG Best Practice Case	
Top 20 Green Governance of Listed Companies in Greater Bay Area 2023		Top 100 Shenzhen Industry Leaders 2023	First Hubei Charity Award Heartfelt Donation Enterprise	Top 15 China's Most Promising Enterprises at the 2023 World Power Battery Conference
EY Sustainable Development Annual Best Award Outstanding Enterprise in 2023		Outstanding Enterprise in 2022 of China Circular Economy Association Science and Technology Progress Award (Social Welfare Category) First Prize		2023 China Waste Power Battery Recycling Industry High-Quality Development Summit Forum and Alliance Annual Meeting - Corporate < Green Low-Carbon Development Excellent Practice Award
2023 China Waste Power Battery Recycling Industry High-Quality Development Summit Forum and Alliance Annual Meeting - Waste Power Battery Recycling Industry Standard Innovation Contribution Award		GGII 2023 China Lithium Battery Material TOP50	Popular Securities 2023 Green Development "Star" Company	National Business Daily Qingxin 2023 Green Practice Pioneer Project
Southern Weekend 2022O outstanding Responsibility Enterprise	Southern Weekend 2023 China Innovation List Waste Resource Comprehensive Utilization Industry TOP1	Shenzhen Stock Exchange Listed Companies 2022-2023 Annual Information Disclosure Evaluation Results (Grade A)	Enterprise Meeting Comprehensive Utilization Industry Standard Conditions for Scrap New Energy Vehicle Power Batteries	GGII High-Tech Gold Ball Award 2023 Annual Technology
GGII High-Tech Gold Ball Award 2023 Annual Zero Carbon Transformation Pioneer	National Business Daily Most Promising Listed Company in New Energy and New Materials	Titanium Media Annual ESG Innovation Enterprise	Most Influential Enterprise in China Renewable Resources Recycling and Utilization Association	

# 2

## Sustainable Operation



Nature is circular and we do business for good. We firmly believe that good corporate governance is the cornerstone of steady business operations and a key factor in ensuring long-term competitiveness. At the starting point of our journey towards international expansion, we integrate ESG concept with corporate governance practices on a global scale. We construct a governance model that not only meets international standards but also embodies the distinctive characteristics of GEM. We respect the opinions and demands of all stakeholders, including shareholders, investors, customers, and employees, and are committed to achieving sustainable development through effective corporate governance.

## Corporate Governance

### Corporate Governance System

In strict accordance with the Company Law, Securities Law, Code of Corporate Governance of Listed Companies, Listing Rules of the Shenzhen Stock Exchange, and other relevant laws and regulations issued by China Securities Regulatory Commission and Shenzhen Stock Exchange, the Company has formulated systems such as the Articles of Association, Shareholders' Meeting Rules, the Rules of Procedure of the Board of Directors, the Rules of Procedure of the Supervisory Board, and Independent Director Special Meeting System to improve the internal corporate governance structure, enhance internal management and control systems, regulate the rights and obligations of the Company and shareholders, strengthen supervision of major shareholders' actions, and prevent abuse of shareholder rights and management advantages that may harm the interests of small and medium-sized investors.

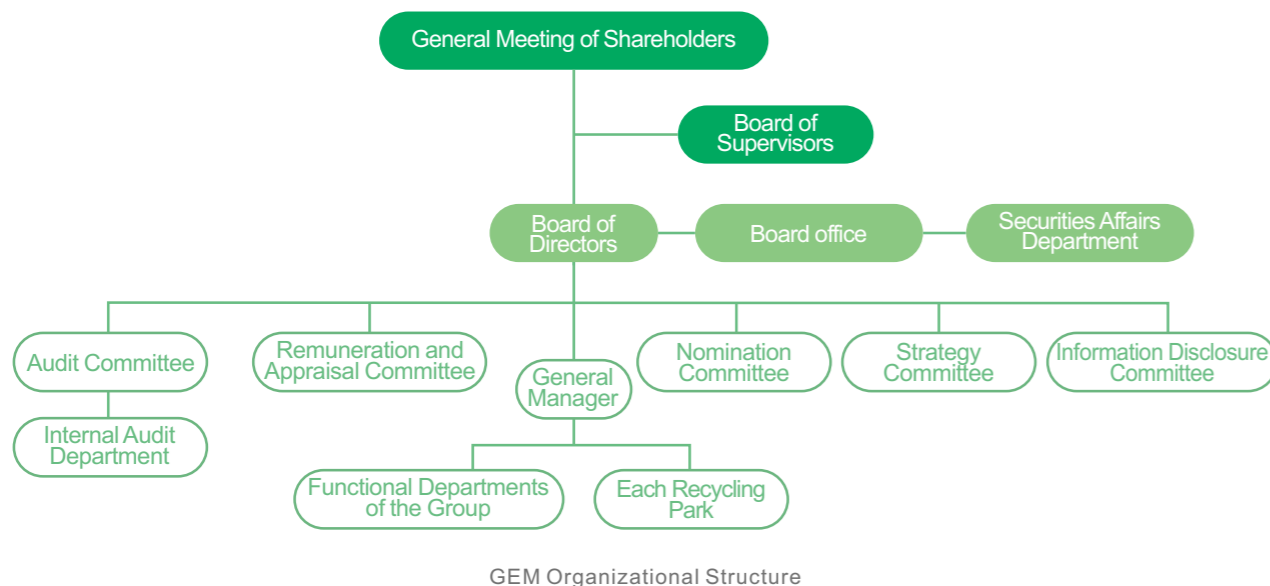
The Company has set up a modern enterprise organization system and operation mechanism comprising "three meetings and one layer" including general meeting of shareholders, board meeting, meeting of Board of Supervisors and management layer.

The general meeting of shareholders, composed of all shareholders, is the highest decision-making body of the Company and is responsible for making decisions on major business matters. The Company standardizes the convening, holding, and voting procedures of the general meeting of shareholders to ensure that all shareholders enjoy equal status and fully exercise their rights. By hiring lawyers to witness, the legality of the meeting procedures is ensured, safeguarding the legitimate rights and interests of the Company and shareholders.

As the Company's decision-making body for business operations, the Board of Directors is responsible to the general meeting of shareholders. The Board of Directors consists of five committees including: an Audit Committee, a Remuneration and Appraisal Committee, a Nomination Committee, a Strategy Committee and an Information Disclosure Committee, and has formulated Rules of Procedure for each committee. The Company convenes the Board of Supervisors in accordance with the prescribed procedures to supervise the legality and compliance of major matters, financial conditions, and the performance of duties by directors and senior management to the greatest extent, thus safeguarding the interests of shareholders and investors.

As a permanent supervisory body of the Company, the Board of Supervisors carries out supervisory functions on behalf of the general meeting of shareholders. The Board of Supervisors of the Company consists of five members, and the number and composition of the Board of Supervisors comply with legal requirements. In accordance with the requirements of listed companies, the Board of Supervisors of the Company conscientiously performs its duties, convenes Board of Supervisors meetings according to the prescribed procedures, supervises the legality and compliance of major matters, financial conditions, and the performance of duties by directors and senior management, and safeguards the legitimate rights and interests of the Company and shareholders.

During the Reporting Period, the Company held a total of six general meetings of shareholders, 12 Board of Directors meetings, and ten Board of Supervisors meetings. The actual situation of corporate governance complied with the requirements of regulatory documents on corporate governance issued by the China Securities Regulatory Commission, Shenzhen Stock Exchange, and SIX Swiss Exchange, and no documents related to administrative supervision measures from regulatory authorities were received.



## Performance of Duties by Independent Directors

The Company has completed the revision of the Working System of Independent Directors and the Special Meeting System of Independent Directors in accordance with the regulations of the China Securities Regulatory Commission (CSRC), the Shenzhen Securities Regulatory Bureau, and the Shenzhen Stock Exchange. In accordance with the Measures for the Administration of Independent Directors of Listed Companies issued by the CSRC, the independent directors of the Company play a crucial role in participating in decision-making, supervising, balancing, and providing professional advice, promoting the high-quality development of listed companies.

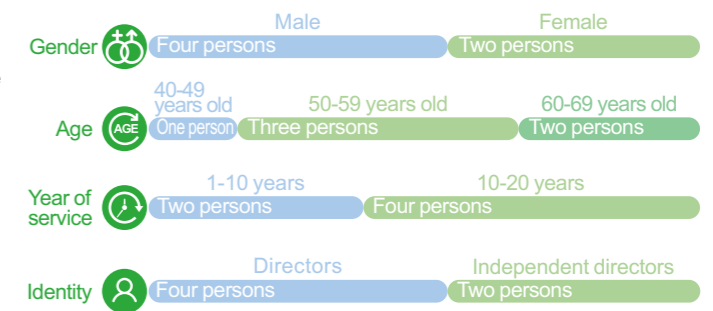
In 2023, we organized independent directors to visit and dynamically understand the core parks and core businesses, increasing interaction to ensure that independent directors can attend board meetings independently and fulfill their duties without interference.

During the Reporting Period, independent directors visited parks in Jingmen, Wuhan, Shenzhen, Indonesia, and other places a total of 13 times. Throughout the year, they issued independent opinions on significant matters of the Company 12 times, fully safeguarding the legitimate rights and interests of the Company and shareholders, especially minority shareholders.

## Board of Directors Diversity

We believe that the age diversity of the Board of Directors brings different perspectives to the Company's development recommendations. The Company's Board of Directors consists of six members, including two independent directors and two female directors, with female directors accounting for 33.3%. Compared to the previous board, the proportion of female directors has increased by 8%. Among the Board of Directors members, there is one person aged 40-49, three persons aged 50-59, and two persons aged 60-69. Four members have served for 10-20 years, while two members have served for 1-10 years.

The Board of Directors members possess diverse experiences in new energy materials technology research and development, enterprise management, strategic investment, finance, and auditing, providing effective support for the Company's development decisions.



## Information Disclosure

The Company strictly complies with relevant laws, regulations, and company systems to ensure the truthfulness, accuracy, completeness, and timeliness of information disclosure. The Company has formulated relevant systems such as the Information Disclosure Management Measures, the Internal Reporting System of Major Events, the Accountability System of Major Errors of Annual Report Information Disclosure, and the Investor Relations Management Measures to standardize the process of information disclosure. We actively practice transparency and fairness in information disclosure, timely disclosing key information such as operating results, financial status, and risk conditions to ensure that all the public and investors have equal access to information and effectively safeguard the interests of all shareholders. We also focus on strengthening communication and interaction with investors, responding promptly to their concerns and inquiries. The Company welcomes inquiries from investors through various channels and methods, such as setting up telephone hotlines, special email boxes, public media, and investor relations activities. The Company has designated China Securities Journal, Securities Times, Shanghai Securities News, Securities Daily, and the cninfo website (<http://www.cninfo.com.cn>) as the media for public disclosure of information, enabling investors to conveniently and promptly access information.

During the Reporting Period, the Company issued a total of 165 documents (including 105 announcements and 60 non-announcement documents), reflecting the Company's operational dynamics at multiple levels.

Since 2013, the Company's information disclosure has continuously received an A-level (Excellent) evaluation from the Shenzhen Stock Exchange for ten consecutive years, and the quality of information disclosure has been recognized by regulatory authorities. Additionally, the Company has won the 2023 Outstanding Practices of Listed Company Boards of Directors and 2023 Best Practices Case of Listed Company Boards of Directors awards from the China Association for Public Companies.

### Case: Information Disclosure Using "On-site + Video" Method

On May 12, 2023, the Company held its 2022 Annual Performance Briefing using the "On-site + Video" method. The event was broadcast live worldwide through the Panorama Network, with over 110,000 online viewers, setting a new record for online viewership. This approach provided a novel and convenient way for investors, especially small and medium-sized investors, to participate in the performance briefing.



### Investor Relations



### Investor Hotline Service

Received over **300** calls  
Responded to **500** platform inquiries

### Financial and Economic Media Publicity

Featured in **12** hot articles  
Generated over **120** backlinks  
Exposed to over **500,000** viewers

## Shareholder Returns

The Company actively implemented share repurchases and announced a repurchase plan on June 6, 2023. As of now, the Company has repurchased a total of RMB120,970,600 (excluding transaction costs), exceeding the lower limit of the repurchase plan's total funds. Mr. Xu Kaihua and Ms. Wang Min, the actual controllers of the Company, actively implemented the increase holding plan, effectively enhancing global investors' long-term confidence in the Company's "urban mining exploration + new energy materials manufacturing" dual-track development strategy, thereby maintaining market stability. According to relevant laws, regulations, and the Company's articles of association, the Company regularly formulates a "Three-Year Shareholder Return Plan" to actively share corporate growth benefits with shareholders through cash dividends. The Company's cash dividend amount for the year 2022 reached RMB256 million, setting a new record high. The Company actively implements the creation of a "long-term, stable, and sustainable" shareholder value return mechanism, continuously enhancing the sense of gain for investors.

On March 8, 2024, the Company formulated the "Dual Improvement of Quality and Return" action plan, actively practicing the development concept of "investors first" for listed companies. In the future, the Company will solidly implement the "Dual Improvement of Quality and Return" action plan, effectively enhancing investors' sense of gain, and actively contribute to stabilizing confidence, markets, and value.

Repurchased  
**12,097.06**  
RMB '0,000

2022  
Cash dividend  
amount reached  
RMB **256** million

## Compliance-Related Transactions

The deliberation procedure and information disclosure obligations are performed in strict accordance with the Company Law, Articles of Association, Internal Control and Decision-making System of Related Transactions and relevant regulations for the transactions between the Company and related parties. The Company has established a standardized management system for related-party transactions, strictly adhering to provisions such as the Articles of Association and the Internal Control and Decision-making System of Related Transactions. Independent directors of the Company conduct rigorous pre-review of related-party transactions, supervising their fairness. Additionally, the internal audit department monitors and audits the entire process of related-party transactions to ensure fairness and prevent corruption. During the Reporting Period, there were no situations that harmed the interests of the Company, especially the interests of small and medium-sized shareholders.

## Internal Audit and Risk Control

The Company has improved its corporate governance structure from top to bottom, optimizing the organizational system to provide basic institutional guarantees for the Company's legal and standardized operation. It has formulated the Internal Audit System, integrating ESG indicators into the Company's risk assessment and management system, and regularly identifying risks and formulating corresponding risk response measures. The Board of Directors of the Company has established an Audit Committee, under which there is an Internal Audit Department. The Internal Audit Department reports the audit situation of the previous quarter and the audit plan for the next quarter to the Audit Committee quarterly, and communicates with relevant departments on major internal control deficiencies found during the audit process, proposing rectification suggestions.

During the Reporting Period, the Company cleaned up and rectified "fake, fraudulent, and mixed" attendance, "fake, fraudulent, and mixed" overtime attendance, and "six mixed" behaviors, rectifying labor discipline, intensifying the cleaning of "six categories" of supply units, and cracking down on commercial bribery, thereby improving the stability of the supply and reducing the risk of procurement activities.

### Case: Purchase of Directors' and Officers' Liability Insurance

To improve the risk control system of the Company, promote the full exercise of rights and responsibilities by the Company's directors, supervisors, senior management, and related responsible persons, and create a good external environment for the Company's steady development, in accordance with relevant regulations such as the Code of Corporate Governance for Listed Companies of the China Securities Regulatory Commission, the Company held the Fourteenth Meeting of the Sixth Board of Directors on February 28, 2023. They deliberated on the Proposal to Purchase Directors' and Officers' Liability Insurance, which was approved at the first extraordinary general meeting of shareholders in 2023, purchasing liability insurance for the Company and all directors, supervisors, senior management, and related responsible persons.

## Business Ethics

Adhering to the global compact and development of a culture of integrity, the Company abides by global business rules, observes contractual obligations, takes the initiative to build a clean and green commercial supply chain relationship, and advocates transparent transactions and fair competition. The Company formulates and implements such system documents as Administrative Regulations of Zero Tolerance for Discipline, Transparency Agreement, Anti-unfair Competition Agreement, System for Prohibiting Unfair Transactions, Integrity Management System and Employee Manual according to relevant laws and regulations.

### Fair Competition

The Company is committed to fulfilling the requirements of fair trade and compliance, advancing transparent transactions with customers. Simultaneously, it strictly prohibits employees and their relatives from engaging in any form of cooperation or transaction with suppliers. It also strictly prohibits employees and their relatives from engaging in any transactions with the Company through suppliers, ensuring fair competition among suppliers. During the Reporting Period, the Company has not been penalized for violating the Anti-monopoly Law of the People's Republic of China and the Anti-unfair Competition Law of the People's Republic of China.

### Stewardship Mechanism

The Company has set up the legal affairs and stewardship management center for the Group, which is responsible for overall management of the legal affairs and business stewardship, supervising the standardized management of business processes in the Group, and guiding such business processes in order to comply with international and domestic laws and contract criteria. It supervises the negotiation and signing process of major/significant contracts in the Group, guides, follows up and supervises major/significant and necessary business matters in the Group, carries out discipline inspections of the supply process and inspections related to anti unfair competition, and participates in on-site inspections and demonstrations for suppliers. It is also responsible for settlement management of receivables to ensure the compliance of business processes in the Group and eliminate major operating risks.



### Training for a Culture of Integrity

We focus on cultivating employees' integrity and self-discipline consciousness from the source. Through organizing specialized training, legal education campaigns, and other series of activities, we continuously reinforce employees' understanding and adherence to business ethics. In particular, for key position employees, we implemented one-on-one integrity education to ensure that each employee maintains high standards in their professional conduct. We continuously improve the regulations and systems in the procurement process to ensure the transparency and fairness of bidding and tendering. During the Reporting Period, we promoted the concept of integrity in employment both internally and externally, organized all staff to sign integrity commitment letters, ensuring that each employee can distinguish right from wrong, understand the bottom line. The coverage rate of anti-corruption training for employees reached 100%, and the coverage rate of anti-corruption systems and procedures for external partners reached 100%.



### Mekanisme Pelaporan

The Company has established a sound reporting mechanism, providing clear reporting channels and procedures for employees and other stakeholders, including hotline and email, enabling reporters to report conveniently and safely. The Company has established a reporting processing procedure, strictly maintaining confidentiality at each stage of reporting, including acceptance, registration, storage, and investigation, and conducts investigations into various types of fraud risks within the Company and its member enterprises through assignments, inspections, and spot checks. The Company will provide necessary protection to whistleblowers to prevent retaliation. For substantiated reports, the Company will conduct serious investigations and handle them in accordance with the law and regulations.

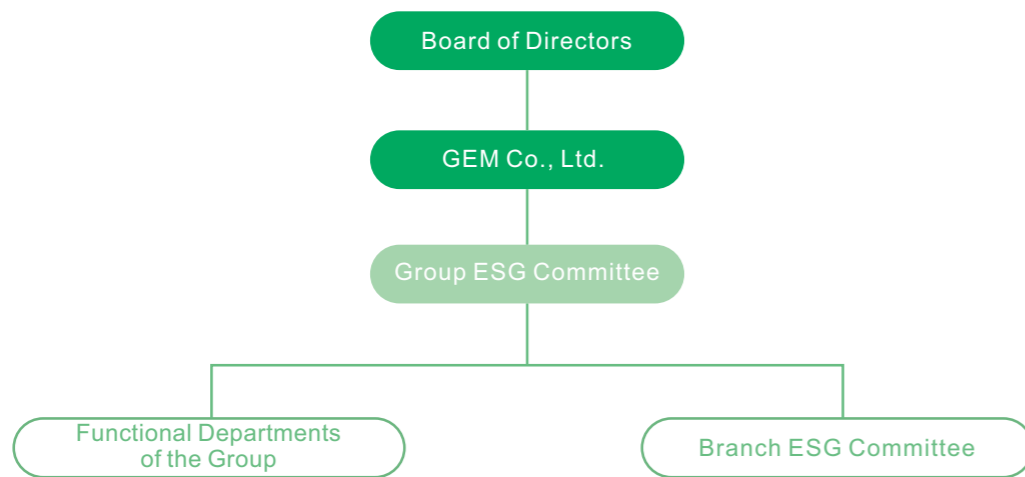


**Reporting hotline:** 86-755-33386666/13842210561 **Reporting mailbox:** jiancha@gem.com.cn  
**Reporting address:** Intendance Department, 18th Floor, Block A, Rongchao Marina Bay Center, Xinghua Rd, Baoan Dist, Shenzhen, Guangdong, China

# Sustainable Development Governance

## ESG Governance

ESG has become a crucial metric for measuring corporate sustainable development, and a comprehensive governance of ESG is essential for high-quality development of enterprises. By establishing a highly efficient and vertically integrated ESG organizational and operational framework, we not only integrate the Company's ESG strategy into its overall business objectives but also incorporate the ESG management system into the Company's existing organizational structure, making ESG management an integral part of the Company's management system. We have established a dedicated ESG management department and a Group ESG committee, integrating internal and external resources to comprehensively monitor and evaluate performance and progress in ESG aspects. This facilitates the timely identification of issues and the adoption of effective improvement measures. Moreover, we infuse elements of ESG enhancement throughout various levels and business processes of the Company, fostering a collective effort to advance ESG initiatives.



ESG Governance Structure

To further enhance ESG capabilities and promote the practical implementation of ESG concept, we will organize periodic specialized ESG training sessions for directors, supervisors, senior management, and ESG personnel at different hierarchical levels.

In July 2023, the Company officially joined the United Nations Global Compact. This not only signifies GEM's formal inclusion in the global community dedicated to green, low-carbon development, and ESG social responsibility but also highlights GEM's achievements in green sustainable development over the past twenty years in areas such as circular economy, environmental protection, corporate governance, talent development, and ESG social responsibility.

## Communication with Stakeholders

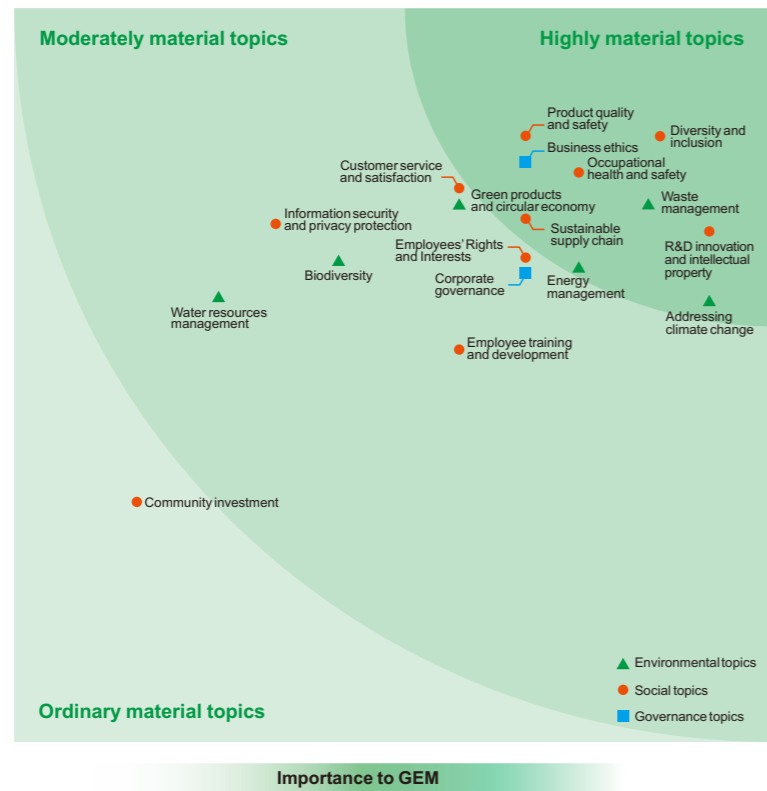
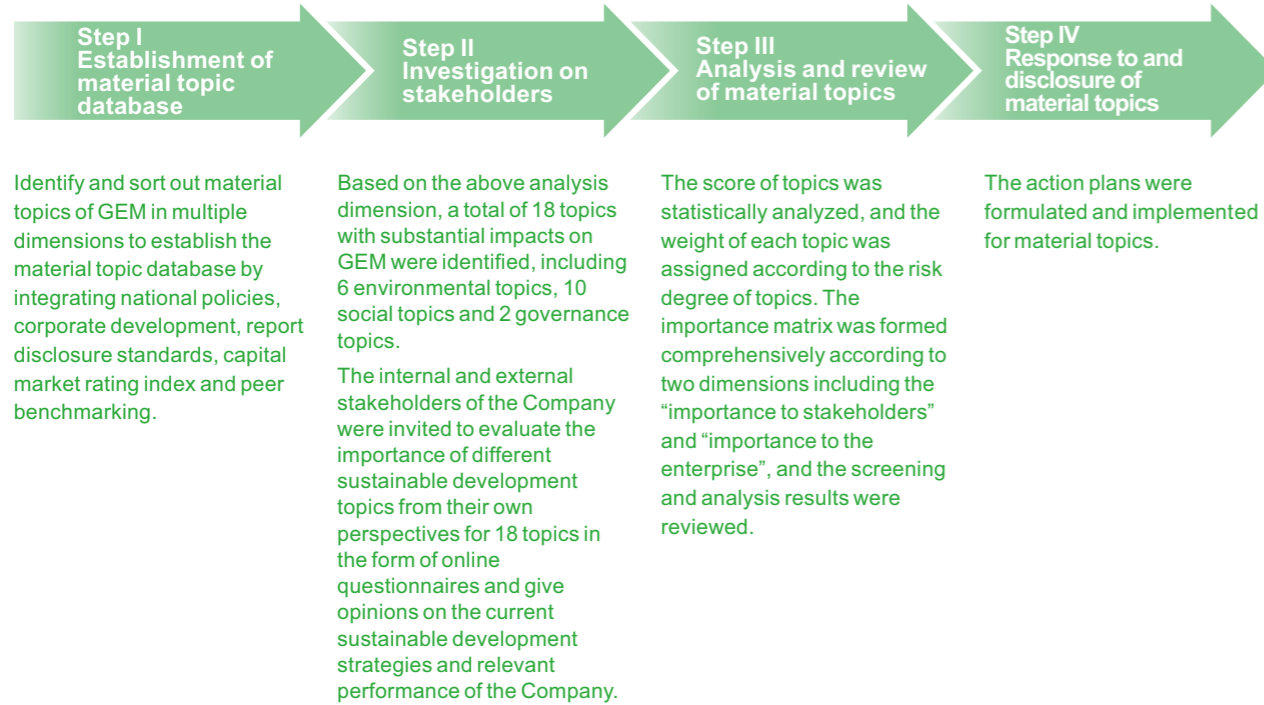
We believe that enhancing communication with stakeholders is one of the important measures for realizing transparent operational responsibilities. We establish a comprehensive ESG information disclosure mechanism to showcase our efforts and achievements in ESG to the public, investors, and other stakeholders. By building effective internal and external communication platforms, we establish transparent communication mechanisms with stakeholders, ensuring their opinions are incorporated into corporate decision-making processes

### Communication with Stakeholders

Important stakeholders	Importance ranking of topics for each group	Communication method
Customers	<ul style="list-style-type: none"> <li>Customer service and satisfaction</li> <li>Product quality and safety</li> <li>Information security and privacy protection</li> <li>Corporate governance</li> </ul>	<ul style="list-style-type: none"> <li>Network platform</li> <li>E-mail</li> <li>Telephone/video conference</li> <li>On-site visit</li> <li>Questionnaire survey</li> </ul>
Government and regulators	<ul style="list-style-type: none"> <li>Water resources management</li> <li>Waste management</li> <li>Addressing climate change</li> <li>Energy management</li> </ul>	<ul style="list-style-type: none"> <li>E-mail</li> <li>Telephone/video conference</li> <li>Documents</li> <li>On-site conference</li> </ul>
Investors	<ul style="list-style-type: none"> <li>Product quality and safety</li> <li>Sustainable Supply Chain</li> <li>Customer service and satisfaction</li> <li>Corporate governance</li> </ul>	<ul style="list-style-type: none"> <li>General Meeting of Shareholders</li> <li>Financial statement</li> <li>Performance report</li> <li>Road show</li> </ul>
Employees	<ul style="list-style-type: none"> <li>Occupational health and safety</li> <li>Water Resources Management</li> <li>Green products and circular economy</li> <li>Waste management</li> </ul>	<ul style="list-style-type: none"> <li>Bulletin board</li> <li>Internal platform</li> <li>Network platform</li> <li>Regular sustainable development training</li> </ul>
Suppliers	<ul style="list-style-type: none"> <li>Employees' Rights and Interests</li> <li>Occupational health and safety</li> <li>Customer service and satisfaction</li> <li>Corporate governance</li> </ul>	<ul style="list-style-type: none"> <li>Network platform</li> <li>E-mail</li> <li>Telephone/video conference</li> <li>On-site visit/Audit</li> </ul>
The public and community	<ul style="list-style-type: none"> <li>Occupational health and safety</li> <li>Green products and circular economy</li> <li>Diversity and inclusion</li> <li>Waste management</li> </ul>	<ul style="list-style-type: none"> <li>On-site visit</li> <li>Questionnaire survey</li> <li>Telephone/video conference</li> </ul>
Media	<ul style="list-style-type: none"> <li>Green products and circular economy</li> <li>Product quality and safety</li> <li>Employees' Rights and Interests</li> <li>Occupational health and safety</li> </ul>	<ul style="list-style-type: none"> <li>Media opening event</li> <li>Publicity materials</li> <li>Media access</li> </ul>

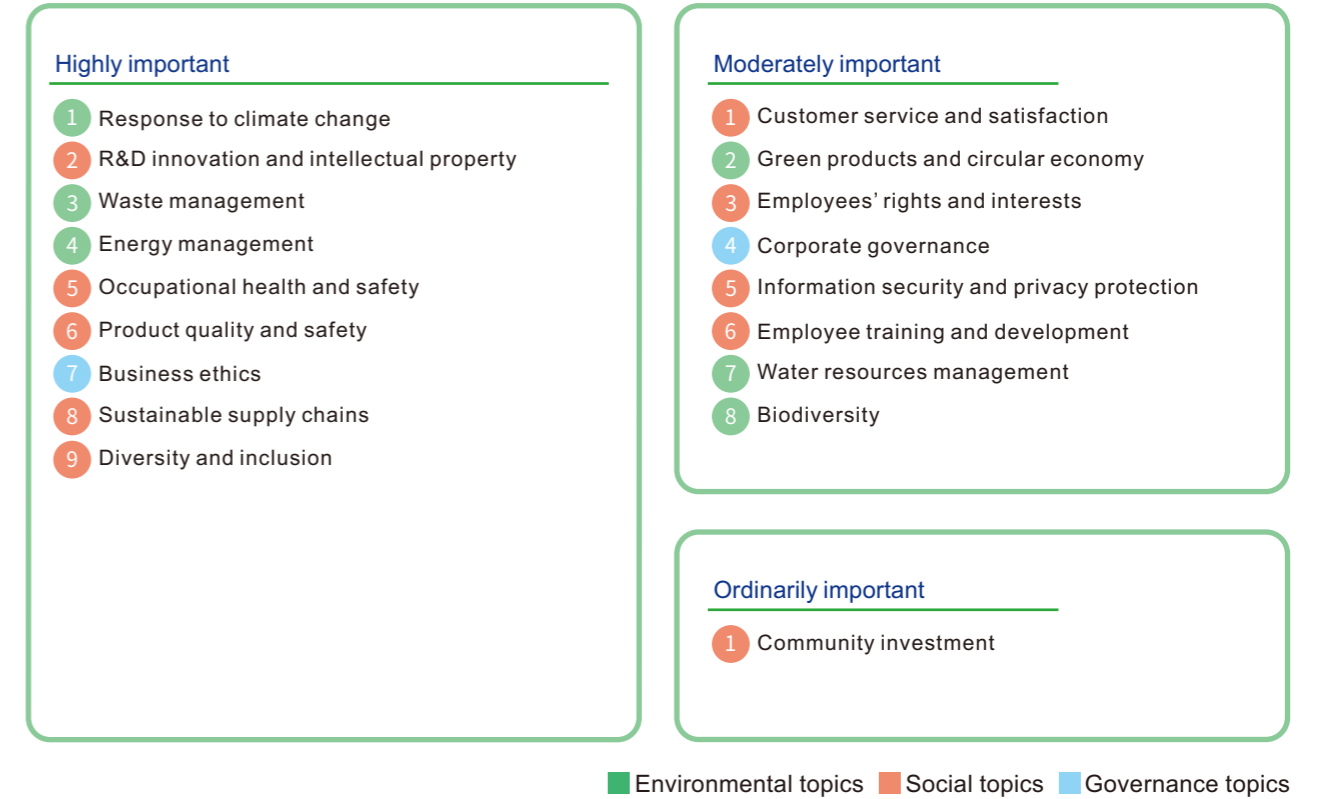
## Material Topics

By identifying material ESG topics, we integrate stakeholders and their concerns into the operation and decision-making process to ensure the integration of ESG into daily operations. During the Reporting Period, the Company entrusted a third party institution to identify the Company's ESG topics and assessed their relative importance. The detailed steps are as follows:



2023 ESG Topics Materiality Matrix of GEM

Based on the comprehensive ranking combining GEM's assessment and stakeholders ratings, the analysis results for the importance of ESG topics in 2023 are as follows:



During the Reporting Period, the Company conducted an annual review of materiality topics from the previous year by analyzing the latest policies from regulatory agencies, domestic and international sustainable development-related policies and regulations. This analysis included an examination of external stakeholders' focus areas on the Company. These findings, combined with management practices, formed the basis for the annual review of material topics. By soliciting feedback from internal and external stakeholders, the Company synthesized the final annual review of material topics. This year, the Company's material topics have undergone certain changes compared to 2022: on one hand, we have disaggregated "concern for vulnerable" and integrated it into "community investment" and "employee rights and interests"; on the other hand, due to the maturity of management practices related to some topics and changes in stakeholder focus, their importance has been adjusted.

## Information Security and Privacy Protection

The Company has developed the GEM Information Security Management System and the Network and Information Security Emergency Plan, in compliance with the Personal Information Protection Law of the People's Republic of China (2021), the Data Security Law of the People's Republic of China (2021), and the EU's General Data Protection Regulation (GDPR), among other data protection regulations. We are committed to implementing leading data protection standards, regulating the data processing activities of the Group, ensuring data security, and promoting the development and reasonable utilization of data.

The Company strictly adheres to the confidentiality of stakeholder information, ensuring that information regarding shareholders, customers, suppliers, and other stakeholders is kept strictly confidential. Unless authorized by stakeholders or required by securities regulations of the publicly listed company, the Company maintains strict confidentiality of stakeholder information.

During the Reporting Period, the Company did not incur penalties from relevant departments for violations of laws and regulations related to information security and privacy protection.

# 3

## Response to Climate Change



# Green Declarations

GEM is active in responding to and implementing the national goal of "carbon peaking and carbon neutrality" and continues to develop its business model for sustainable development to tackle increasingly severe climatic issues. On June 5, 2020, GEM released Green Declarations, comprising a total of ten declarations at three levels: "Green Ethics," "Green Operation" and "Green Struggling" and comprehensively setting forth the green criteria for GEM in terms of morality and ethics, business operation activities, production activities, innovation activities and cultural activities, with an aim to take the lead in promoting the carbon neutrality as an enterprise. We promise to proactively respond to the Sustainable Development Goals of the United Nations, follow the concept of "Putting Ecology First for the Green Development," and make green contributions to building global community of shared future for mankind as a Chinese enterprise by vigorously promoting the recycling of wastes and the development of green materials, making good use of resources and energy, and reducing greenhouse gas emissions.



# Proactive Stance in Addressing Climate Change

As a leading recycling company focusing on climate change and green development, we actively explore the economic opportunities and challenges that climate change may bring to our business, identify climate-related risks and opportunities, integrate climate change response into the full life cycle of our business operations, and seek for a business model that addresses climate change risks. At the same time, we utilize our own strength and that of our partners to actively call on all sectors of society to contribute to the fight against climate change.

We refer to the IFRS Sustainability Disclosure Standards 2 - Climate Related Disclosures (IFRS S2) framework to disclose the climate change governance system from four aspects: governance, strategy, risk management, indicators and targets.

## Governance

The Company takes climate change as an important consideration in its strategy, and has established a comprehensive organizational structure for greenhouse gas management and climate change response, forming a climate governance structure consisting of the Board of Directors, the ESG Committee, and the Dual Carbon Strategy Research Department, to carry out top-down governance on climate change topics, and to promote the relevant departments of the Company and its branches or subsidiaries to make climate change management a part of their daily work and incorporate it into the scope of performance appraisal.

The Company's Board of Directors is responsible for approving climate-related strategies and overseeing their implementation; the ESG Committee is responsible for identifying, ranking, analyzing and managing climate risks and opportunities, formulating and overseeing the implementation of related objectives, and reporting to the Board of Directors on risks and response strategies; and the Dual Carbon Strategy Research Department is responsible for the implementation of climate-specific work and reporting regularly to the Committee on its progress.

## Strategy

### Response to Climate Risks and Opportunities

By analyzing GEM's greenhouse gas emissions, carbon emissions from the upstream supply chain accounted for more than 75% of GEM's total carbon emissions. Based on this, we have reorganized the scope of carbon emissions according to Scope 1, Scope 2 and Scope 3, and formulated relevant carbon reduction action plans for the three categories of carbon emissions. In 2023, we formed a list of GEM's climate change risk and opportunity responses based on the management structure described above, with reference to the IFRS S2 framework.

We regularly disclose the results of our identification of climate-related risks and opportunities, assess the strategic and financial impacts of these risks and opportunities on our business, and formulate adaptive strategies in terms of green products, green manufacturing, green services and green ecology. The Company will respond to climate change risks and meet carbon neutral development opportunities by further strengthening the construction of low carbon industrial chain, implementing extreme cost reduction, adapting to the development of new energy industry, implementing low carbon transformation, improving the level of energy saving management, upgrading the production intelligence, and actively reducing carbon in operation.

GEM adheres to the dual-track development strategy of "urban mines and new energy materials", and through the mining of urban mines and the development of new energy materials, GEM will comprehensively promote carbon peaking and carbon neutrality, and will become the world's leading enterprise in the low-carbon industry, which will have a positive impact on the development of China's national economy and the world's green development.

Type of risk	Climate-related risks/opportunities	Risk and opportunity segmentation	Potential impact		
			Time frame for impact	Value chain links	Financial impact
Physical risk	Acute risk	Extreme events such as typhoons, floods and biological disasters	Short- to medium-term	Raw material supply, logistics, production and operation	Rising costs ↑ Declining revenues ↓
	Chronic risk	Gradual changes in temperature and rainfall, sea level rise	Medium- to long-term	Raw material supply, production and operation	Rising costs ↑ Declining revenues ↓
Transition risk	Policy and regulatory risk	The current climate-related regulatory requirements are tightening, and emerging laws and regulations in the field of new energy will bring pressure on compliance management; the Company needs to meet the current regulatory compliance requirements in production, operation and sales, and to make early responses to possible or upcoming emerging regulations.	Medium- to long-term	Production and operation, marketing and sales	Rising costs ↑
		Stricter emissions reporting obligations and compliance requirements, and more stringent disclosure requirements from regulators, investment institutions and stakeholders on corporate carbon emissions, mitigation measures, quantitative targets and performance, increase the scope and difficulty of disclosure; changes in product regulatory requirements and standards, and more stringent product energy efficiency and emissions standards and regulatory requirements affect existing product standards and procurement standards and processes, increase compliance costs, fines, and project cancellation risks and require the use of materials and technologies that comply with new product standards.	Medium- to long-term	Production and operation	Rising costs ↑
	Technology risk	Low-carbon products replace traditional products, and the demand for existing high-carbon footprint products is reduced. It is necessary to prioritize the use of low-carbon production processes and materials, and transform production towards renewable energy, low emission technology, and digital equipment.	Medium- to long-term	Production and operation, marketing and sales	Rising costs ↑
		Low-carbon technology research and development and application requirements are getting higher and higher, and low-carbon technology, product development inputs and competition are large.	Medium- to long-term	Production and operation, marketing and sales	Rising costs ↑
	Market risk	Market uncertainty and consumer preference for green products are leading companies to transition to low-carbon products and services, and companies need to provide low-emission products and services in response to market demand.	Medium- to long-term	Production and operation, marketing and sales	Rising costs ↑ Declining revenues ↓
		Rising energy/material costs and changes in raw material and energy prices lead to cost increases. Lack of raw materials leads to cost increases and high costs of low-carbon materials.	Medium- to long-term	Production and operation	Rising costs ↑
Stakeholders' concern over negative news affects access to finance and reduces the liquidity of corporate assets.	Medium- to long-term	Business operation	Rising costs ↑		
Opportunities	Low-carbon industry chain construction	Under the background of carbon neutral transition, the social demand for low carbon products and services may increase; continuing to build five major recycling industry chains based on recycling industry and providing the market with low carbon contact solutions can help the Company better adapt to market demand and obtain additional growth.	Long term	Marketing & sales services	Rising revenues ↑
	Cost reduction and efficiency management	Resource efficiency can be enhanced through energy conservation and emission reduction in production and operations, improved recycling of materials, and low-carbon logistics to help carbon reduction globally. Efficient resource management systems are effective in reducing costs and increasing efficiency, productivity and supply capacity.	Medium- to long-term	Production and operation, logistics and transportation	Declining costs ↓
	Trends in market electrification	Under the global trend of "carbon neutrality", customers are more inclined to choose low-carbon products, and there is a wide demand for new energy and electrification transition in emerging markets; the Company will actively respond to the market changes and develop more products to meet the market demand and expectations, so as to realize long-term sustainable growth in business and revenue.	Long term	Marketing & sales services	Rising revenues ↑
	Low-carbon energy transition	With the development of low carbon technologies and supportive policies in place, the use of low carbon energy sources will result in lower direct energy costs for production and operations, and will meet the regulatory pressures and low carbon goals that the Company faces in the marketplace.	Medium- to long-term	Production and operation	Declining costs ↓
	Increased resilience to climate change	The continuous improvement of climate change response speed and adaptive capacity will create more space for grasping climate opportunities; the Company is based on urban mining business to carry out the construction of five recycling industry chains, strengthen the construction and use of renewable energy projects, which can enhance the Company's capacity to cope with climate change, and the production of advanced new energy materials can bring new opportunities for the Company.	Long term	Production and operation, marketing and sales services	Rising revenues ↑



## Risk Management

We hope to minimize the adverse impacts of climate change on GEM. The Company identifies and evaluates climate risks based on its own business characteristics, internal and external development environments as well as expert advice, comprehensively evaluates the impacts of risks and opportunities on project investment, technology research and development, production and operation, product sales and the value chain, formulates a response strategy based on identified climate risks and opportunities, and devotes itself to exploring work mechanisms that will satisfy the Company's sustainable development needs.

Based on the identified climate risks and opportunities, the Company will formulate appropriate response strategies, set up working groups for specific issues, and establish regular reporting and communication mechanisms to promote the smooth implementation of specific projects.

## Indicators and Targets

We achieve our goal of reducing greenhouse gas emissions through refined management, energy conservation and emission reduction, use of clean energy, substitution of recycled materials, development of resource recycling business, and development of low-carbon technologies and products. In the future, GEM will focus on the goal of carbon neutrality strategy, do a good job in reducing greenhouse gas emissions, and carry out climate change scenario analysis as soon as possible to continuously optimize its own performance related to climate change, and help achieve the goal of the national "carbon peaking and carbon neutrality" strategy.

- In 2023, the total carbon emissions from the Company's domestic business for its own operations were **766,100** tons. This figure includes **98,200** tons within Scope 1 emissions and **667,900** tons within Scope 2 emissions.
- In 2023, the Company's carbon emission intensity was determined to be **2,150** tons of CO<sub>2</sub> equivalent per RMB 100 million of revenue, a decrease of **3.83%** from the base year 2020.

## Product Carbon Footprint Certification

In 2023, GEM conducted a comprehensive combing of the new energy materials system, formulated a carbon footprint certification work plan for GEM's core strategic products related to nickel, cobalt, manganese, lithium and tungsten, and carried out comprehensive product carbon footprint accounting and certification work to grasp the actual situation of product carbon footprints, and lay a good foundation for the realization of carbon neutrality of products. In 2023, GEM hired a third-party certification body to conduct product carbon footprint certification for a number of core products and obtained certificates, including the carbon footprint certification of nickel hydroxide cobalt (MHP), an intermediate product of nickel hydrometallurgy, completed by Indonesia's PT.QMB New Energy Materials Co., Ltd., which was the world's first carbon footprint certification of MHP produced by the nickel laterite ore hydrometallurgy process.

## Energy-saving Management

Energy-saving management refers to the reduction of energy consumption by means of equipment upgrading, process enhancement and refined management, which is the core of the enterprise to realize carbon reduction in operation and an effective means of low-carbon transformation. To construct the energy management system, the Company developed a Statistical System for Energy Consumption, the Energy Management System and other management systems (with reference to the ISO 50001 Energy Management Systems - Requirements with Guidance for Use). During the Reporting Period, a total of six member enterprises of the Company obtained ISO 50001 energy management system certifications.

Fuels directly consumed by the Company are natural gas, anthracite, gasoline and diesel, while indirect energy includes power and steam. Natural gas consumption is mainly from product manufacturing and staff canteen use; anthracite is mainly used for coal-fired boilers and electronic waste pyrolysis rotary kiln; diesel is mainly used for transportation vehicles and diesel generators; gasoline is mainly used for the Company's transportation vehicles; purchased power is mainly used for production and manufacturing, office and living area electricity; purchased steam is mainly used for product manufacturing. The energy-saving management of production and operation focuses on the transformation of energy-consuming equipment, improvement of energy use efficiency, refined management of production, and improvement of efficiency of public and auxiliary systems, etc. Meanwhile, the Company improves the energy-saving effectiveness by enhancing the awareness of energy-saving of all the staff, and incentivizing the staff to contribute to the energy-saving and consumption reduction.

During the Reporting Period, the Company's comprehensive energy consumption for domestic operations amounted to 166,400 tons of standard coal, of which 642,242 MWh of electricity (47.43%), 3,416 kilo-cubic meters of natural gas (2.43%), 844,611 tons of steam (47.85%), 256 kiloliters of gasoline (0.22%) and 353 kiloliters of diesel fuel (0.31%) were consumed; the comprehensive energy consumption decreased by 3.82% year-on-year. Through the active work of the whole staff, the Company's energy-saving management has been effective, which is conducive to the Company's low-carbon transformation and development.

The comprehensive energy consumption is

**166,400 tons**

### Case 1: Gas heat pump renovation of Jingmen GEM Co., Ltd.

Jingmen GEM Co., Ltd. implemented a 1500T steam stripping heat pump distillation process renovation project, adding one set of 2500T steam stripping heat pump distillation equipment. After the renovation, the energy cost per cubic meter of wastewater treatment decreased from RMB25.4 to RMB19.28, down 24%, with significant results.



Steam stripping heat pump distillation equipment

### Case 2: Inlet modification for rotary kiln of GEM (Jingmen) High Purity Chemical Materials Co., Ltd.

GEM (Jingmen) High Purity Chemical Materials Co., Ltd. implemented a nickel sulfate crystal rotary kiln inlet modification project to improve heat transfer efficiency by changing the location and form of the air inlet, changing the direction of hot air flow, extending the contact time between the hot air and the material, and increasing the contact area. After the completion of the renovation, the average steam unit consumption was reduced from 1.27 t/Mt to 0.99 t/Mt, a decrease of 22.05%, saving about RMB640,000 in steam costs for the whole year.

The annual cost of steam saving was about

**RMB 640,000**

## Carbon-inclusive Asset Development Project

In 2023, the Company realized the development of the first batch of carbon-inclusive assets in the industry and applied them to the local carbon market for compliance. It also entered the development of the international third-party verified emission reduction standard (VCS) project. During the Reporting Period, the rooftop photovoltaic project of GEM Wuhan Recycling Industrial Park successfully completed the development of carbon-inclusive assets in Wuhan, developed the carbon emission reduction rights generated during the specified period into carbon-inclusive assets, obtained a total of 4,269 tons of Hubei carbon-inclusive assets, and reached the first carbon-inclusive transaction in Hubei carbon market in December 2023 in Hubei Carbon Emission Exchange. The development and trading of carbon-inclusive assets reflect GEM's positive attitude to responding to and implementing the national dual-carbon strategy. GEM will actively participate in the construction of the national carbon market and explore more feasible modes of participation in the carbon market, which reflects GEM's responsibility and commitment to accelerating the development of low-carbon transformation and participating in the response to global climate change.

# Cyclic Carbon Reduction

## Clean Energy

GEM has always attached great importance to the use of clean energy, and has orderly carried out the purchase of green power, distributed photovoltaic, biomass energy, waste heat utilization and other clean energy use, constantly optimizing the energy structure and reducing the carbon content of energy.

During the Reporting Period, it generated 21.61 million kWh from photovoltaic power, purchased 51 million kWh of green power, and produced 110,000 tons of steam by using biomass as fuel, collectively reducing carbon emissions by approximately 74,250.42 tons, which effectively reduced the carbon content of energy.

In 2023, GEM actively promoted the construction of distributed photovoltaics to further expand the use of renewable energy and reduce greenhouse gas emissions. By the end of 2023, the total installed capacity of GEM's PV equipment was 22.82 MW.

Carbon emissions were reduced by about **74,250.42 tons**

The total installed capacity of photovoltaic equipment is **22.82MW**

### Case: A benchmarking project for a zero-carbon industrial park

Wuhan Park makes full use of the roof and ground parking lot to build 5.66 MW distributed photovoltaic power generation facilities in two phases, utilizing the park's 10 kV+380 V ring network with the park's production load and 7kW\*11+60 kW\*3 charging piles for power transmission and distribution, instantly consuming green power. It is equipped with a 2 MW/4 MWh retired power battery laddering energy storage system to satisfy the spatial and temporal matching of green power production and consumption, and realize the full consumption of green power. Supporting the integrated intelligent zero-carbon power plant management system of SPIC, it realizes flexible and intelligent management of energy use in the park, and intelligent prediction and management of green power production, consumption and production energy use in the park. The project generates 2.008 million kWh of photovoltaic power on average per year, saving 612.44 tons of standard coal and reducing CO<sub>2</sub> emissions by about 1,634.51 tons per year.



Roof Photovoltaics in the Factory of GEM Wuhan Park



Parking Lot Photovoltaic Carport of GEM Wuhan Park

## Low Carbon Process

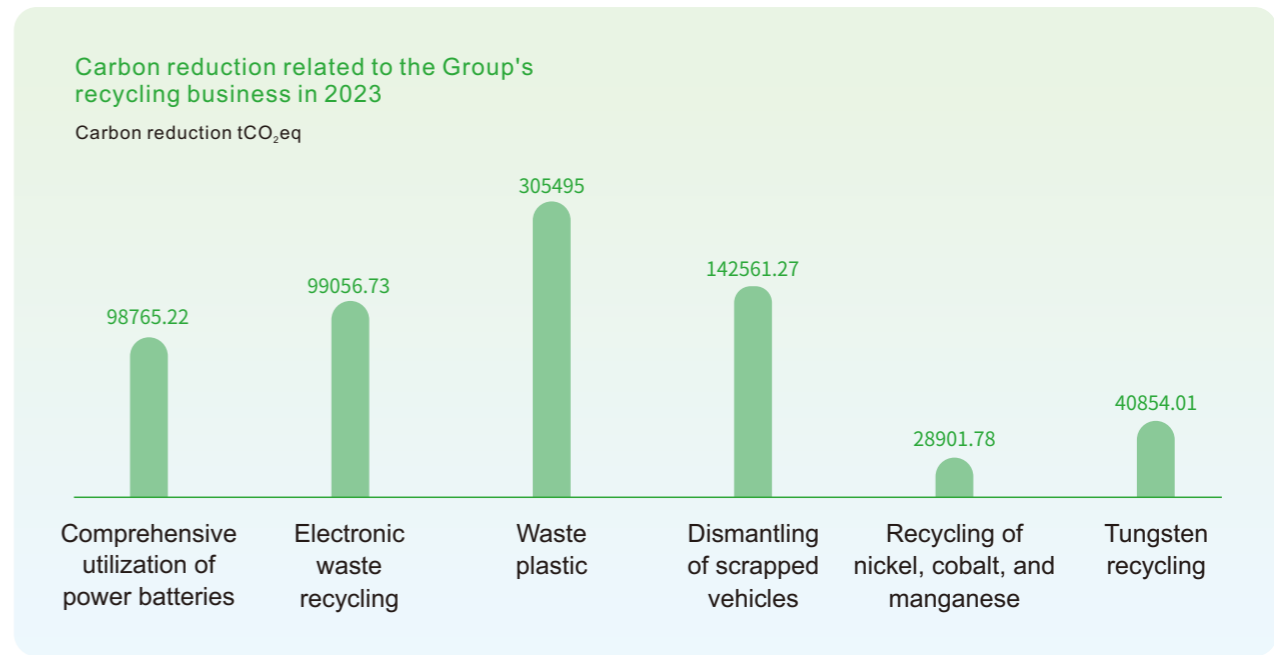
The Company has been insisting on the research and development of low-carbon processes, and realizing low-carbon production processes for its core products through the optimization of production processes, upgrading of high-energy-consumption processes, and substitution of raw and auxiliary materials. The Company has independently researched and developed the world's leading laterite nickel ore hydrometallurgy, which has realized large-scale production and application in QMB (Indonesia). The internationally renowned third-party certification body has conducted a comparative accounting of the carbon emissions of laterite nickel ore hydrometallurgy and traditional pyrometallurgical smelting processes, and the results show that GEM's laterite nickel ore hydrometallurgy can reduce carbon emissions by 50% relative to traditional pyrometallurgical smelting technology, with a significant low-carbon advantage. Bureau Veritas has issued a verification statement of laterite nickel ore hydrometallurgy compared to traditional pyrometallurgical smelting based on the results of the calculations, which demonstrates the low-carbon attributes of laterite nickel ore hydrometallurgy.

Verification Statement for Comparison of Carbon Emissions from Laterite Nickel Ore Hydrometallurgy

## Resource Cycle

As a leading enterprise in the comprehensive utilization of waste resources in China, GEM has been carrying out global layout in the resource recycling industry, actively working on dismantling and recycling of scrapped automobiles, gradient utilization and regeneration of decommissioned power batteries, recycling of electronic waste and modification of waste plastics, etc. GEM is committed to creating a low-carbon recycling industry chain based on resource recycling, and to providing low-carbon solutions for the development of the society. During the Reporting Period, GEM's comprehensive utilization of waste resources business brought about a carbon reduction of 715,600 tons, making a positive contribution to carbon neutrality across the value chain.

During the Reporting Period, the battery-grade lithium carbonate products produced by Jingmen Power Battery Regeneration Technology Co., Ltd., a subsidiary of GEM, using retired power batteries as raw materials, obtained 100% lithium recycled content verification statement issued by SGS, and the recycled plastic products of Jiangxi GER Industry Co., Ltd. passed the PCR certification (Plastic Recycled Material Verification Statement) issued by TUV and the ISCC PLUS certification issued by SGS; Wuhan GER Electronic Waste Disposal Co., Ltd. has passed the certification of Electrical and Electronic Due Diligence Recycling Management System.



### UN Global Compact's GDI for SDG Report Series

— Implementing Global Development Initiatives to Accelerate the Realization of Sustainable Development Goals

## White Paper on Carbon Footprint and Low Carbon Cycle Development of Power Batteries

## Power Battery Recycling

GEM's power battery recycling and reuse practice was selected as the only resource recycling case in the UN Global Compact's GDI for SDG Report Series - White Paper on Carbon Footprint and Low Carbon Cycle Development of Power Batteries.

# 4

## Innovation and Technology

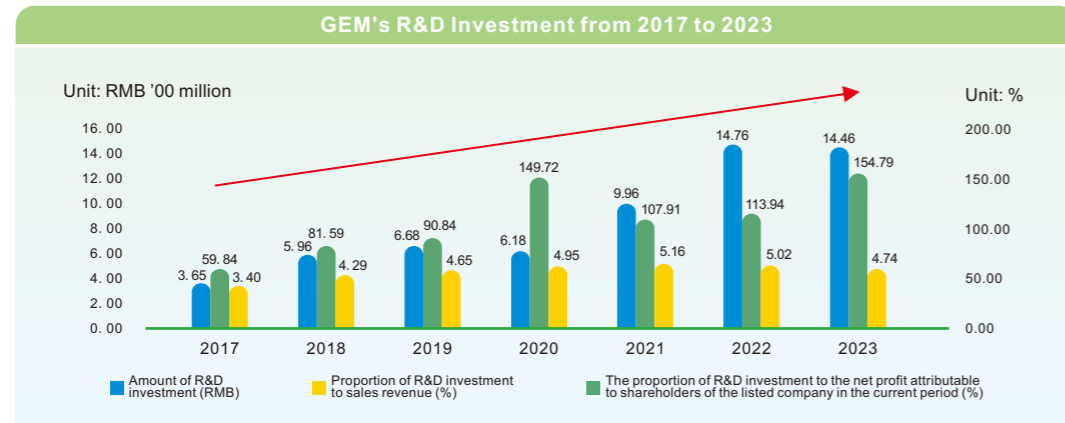


We adhere to the innovation concept of "Innovation is honored, great, and dignified", establish the talent concept of "embracing talent, investing in talent, and helping talent to succeed", and implement the innovation formula of "super talent + super equipment + super innovation = super technology". We have formulated the "Company R&D Project Management System" to manage new product development, new technology research and exploratory tests.

In terms of innovation management, the Company has remained committed to an innovation-oriented approach and steadfastly implemented the "five-in-one" innovation strategies. These strategies encompass top-level design, market demand-driven research and development (R&D), innovative production line practices, and quality improvement. It has implemented the innovation measures of "class-based system, group-based research", and has realized the multiplication of innovation facilities and R&D personnel. In the future, the Company will carry out innovation competition, shorten the innovation cycle, realize the multiplication of technological achievements, complete the Company's three multiplication plans, set off a double storm of technological innovation and quality innovation, mining "technology mines" and "quality mines".

The Company has set up a number of awards such as the reward fund for patents and papers, annual industrial innovation award, industrial quality award, leading talents, and innovative figures to award major projects and personnel who have made outstanding contributions in the current year, so as to enhance the enthusiasm of talents for innovation.

In 2023, the Company's R&D investment amounted to RMB1.446 billion, accounting for 4.74% of the annual operating revenue and 166.46% of the proportion of net profit attributable to shareholders of the listed company in the current period. The Company now has more than 1,500 R&D personnel, accounting for about 15.41% of the total number of employees, demonstrating the Company's resolute efforts to promote innovation and become a dominant enterprise in the industry that dares to invest heavily in innovation.



## Innovation Platform

The Company continues to build the "five-in-one [five-in-one: strengthening top-level design, market demand-driven research and development (R&D), innovative production line practices, and quality improvement] innovation platform". In 2023, GEM (Jiangsu) Cobalt Industry Co., Ltd. a subsidiary of GEM, was recognized as the sub-center of the national enterprise technology center branch, and the number of GEM's national-level innovation capability platforms increased from "2" to "3".



During the Reporting Period, the Company established the Group's Central Research Institute, which is centered on eight + one innovation platform strategies, and consists of eight major research institutes/engineering technology research centers, including the Engineering Research Center for Recycling of Key Mineral Resources, the Engineering Research Center for New Energy Battery Materials, the GEM Super Green Technology Research Institute, the GEM New Energy Materials Research Institute, the GEM Green Industry Innovation Research Institute, the GEM Cobalt Business New Products Research Institute, GER Research Institute for High Polymer Material Recycling, and the Laterite Nickel Ore Hydrometallurgy and New Energy Material Engineering Technology Research Center of QMB.

### Eight+One Innovation Platform Strategic Layouts

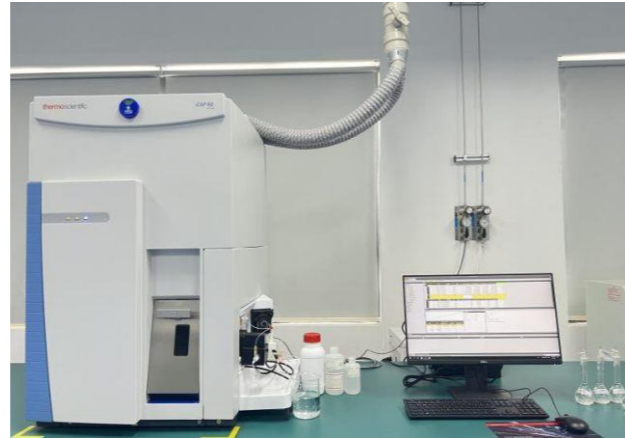
## Eight Research Institutes of the Central Research Institute



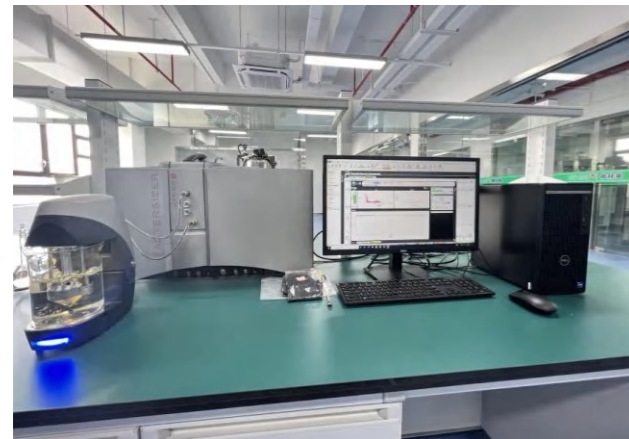
Since the implementation of innovation and quality prioritization strategies in 2017, the Company has consistently invested in R&D to multiply its innovation facilities.



Photoelectron Spectrometer



Inductively Coupled Plasma Emission Spectrometry-Mass Spectrometry



Laser Particle Sizer



Scanning Electron Microscope

The Company actively cooperates with domestic and foreign universities and research institutes, including Oxford University, Tokyo University, University of Sheffield, Tsinghua University, Central South University, Beijing University of Technology, Wuhan University, Wuhan University of Technology, and the Institute of Energy Conversion of Chinese Academy of Sciences, to carry out the whole process of industrialization of technological achievements in the field of technological development, engineering design, market operation, and so on, and has created a unique model of industry-university-research cooperation in the field of recycling economy.

On November 6, 2023, GEM jointly established the China-Indonesia Joint Research Laboratory for New Energy Materials and Metallurgical Engineering Technology (hereinafter referred to as the "Joint Laboratory") with Bandung Institute of Technology (BIT) and Central South University (CSU) and donated scholarships to BIT. The Joint Laboratory will effectively promote the rapid development of the China-Indonesia Joint Training Master Program in metallurgical technology and new energy materials engineering under the "1+1+1" model led by the GEM-Bandung Institute of Technology-CSU, and become an important platform for the Hundred Thousand Talent Cultivation Plan (i.e. "hundreds of Engineering Doctors, thousands of Engineering Masters, and tens of thousands of Technical Professionals") initiated by the three parties.



Joint Laboratory Signing Site

## Intellectual Property Rights

The Company adheres to the intellectual property development strategy of "respecting intellectual property rights, stimulating the potential of talents, encouraging technological innovation, and promoting high-quality development", and constantly improves the intellectual property work system to enhance the Company's level of independent innovation.

### Build and Standardize Intellectual Property Management System

The Company benchmarked GB/T 29490-2013 "Enterprise Intellectual Property Management Standards", and carried out the standardization and certification of intellectual property management system in four parks, namely, Jingmen Park, Wuxi Park, Taixing Park and Wuhan Park, to implement the whole-process standardized management of the creation, management, application and protection of intellectual property rights of the Group.

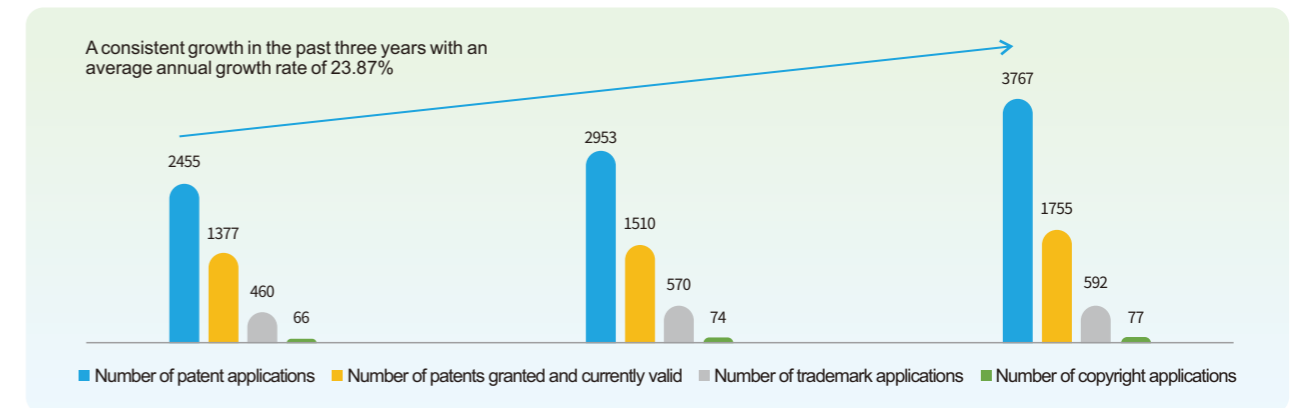


Certificate of Intellectual Property Management System Certification

## Core Patented Technology Supports Green and Low-carbon Industry

In 2023, the Company continued to increase R&D investment in the five core industry chains and achieved a number of technical achievements with broad market application prospects. During the Reporting Period, the Company filed 814 new patent applications, up 63.45% year-on-year, and 189 new foreign patent and PCT patent applications, up 278.00% year-on-year. During the Reporting Period, the Company has applied for 3,767 patents, with 1,755 authorized and valid patents, including 24 foreign authorized patents.

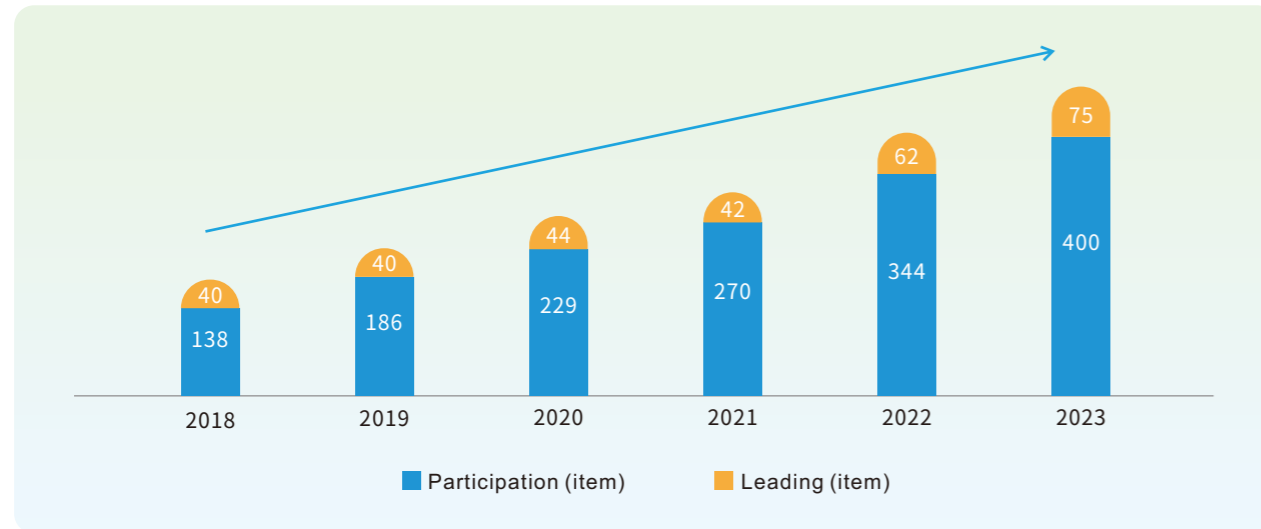
In the laterite nickel ore project, QMB (Indonesia) broke through the technical barriers and independently developed green methods for producing new energy materials through laterite nickel ore hydrometallurgy. It has laid out multiple international patents in processes from laterite nickel ore beneficiation to hydrometallurgy, and then to battery material synthesis. As of December 31, 2023, QMB has completed 122 international applications for PCT patents, of which 78 PCT patents have been filed in China and 16 PCT patents have been filed in Indonesia.



Cumulative Number of Patents, Trademarks and Copyrights Filed by the Company from 2021 to 2023

## Industry Standard

GEM builds a system of standards to drive high-quality development, facilitating high-tech innovation and leading the way in high-quality development. In terms of domestic standards, the Company's industry coverage and participation has been comprehensively improved, with 69 new standards, including 13 leading standards and 56 participating standards. As of December 2023, the total number of standards of the Company reached 475, a year-on-year increase of 17%, of which 75 were leading standards and the number of published standards was 346, a record high.



Accumulated Leading/Participating Standards for Domestic Revision by the Company from 2018 to 2023

In 2023, in accordance with the principles of demand orientation, advancement and applicability, and urgent use first, GEM carried out a series of standard subject research in the construction of carbon-neutral parks and carbon emission reduction of products. A number of key common technologies, applied technology program projects and product carbon footprinting accounting formed standard research results. The Company participated in the preparation of standards in the fields of environmental protection, low-carbon, comprehensive utilization of resources, green manufacturing system (green factories, green design products, green supply chains). During the Reporting Period, a total of five green and low-carbon standards were released (including one national standard, one industry standard, and three group standards), promoting industrial innovation and upgrading and empowering green and low-carbon through standard research and application.

During the Reporting Period, it released **Five** green and low-carbon standards, leading the industry

## Innovations

### 1 It broke through the ternary precursor technology, with core-shell technology putting a "safety helmet" on high-nickel materials

Through the micron-level structural design, the internal elements of the material become continuously changing concentration gradient distribution, solving the two major pain points of "endurance" and "safety" for new energy vehicles. The Company has overcome the difficulty of industrialization of high nickel core-shell ternary precursors, and has become the only enterprise in China with large-scale production technology for core shell. The second generation of core-shell precursors is about to be mass-produced, and core-shell technology is far ahead.

### 2 Accurately targeting energy density demand, it broke through the industrialization technology of medium nickel high-voltage precursors

The Company has broken through the two technical barriers of "doping" and "coating" of co-precipitation elements, improving the working voltage of medium-nickel precursors, enabling medium-nickel precursors to achieve the long-distance endurance that can only be realized by high-nickel precursors, and lowering the cost of precursors. The Company has broken through the industrialization technology of medium-nickel high-voltage precursor, and become one of the few enterprises in the world that produces high-voltage precursor materials on a large scale. New products have been certified and supplied in bulk, and the innovation of high-voltage precursor technology continues to occupy the leading position in the industry.

### 3 Independently researching and designing the entire process of Laterite Nickel Ore Hydrometallurgy, it has been at a leading level in the industry

The Company has independently developed, designed, built, and successfully put into operation the full process technology of Laterite Nickel Ore Hydrometallurgy, breaking through technological and equipment blockages, and exceeding the designed production capacity. Its technical and economic indicators are at the world's leading level.

### 4 It has completed the development of electrodeposited nickel product process and obtained "international license".

The Company independently completed the process development and industrialization of electrodeposited nickel products. The products have obtained ISO9001 international quality system certification and have been successfully registered on the London Metal Exchange. With a production capacity exceeding 2,000 tons per month, it has become the second largest electrodeposited nickel factory in China.

### 5 It focused on the manufacturing of high-end equipment for power batteries, building an international advanced green leader

The Company has independently developed PTC degumming technology, overcome the difficulty of non-destructive degumming and dismantling of CTX battery packs, and built the first flexible and intelligent dismantling line for retired power batteries in China. Based on the characteristic data of retired batteries, the Company has developed fast battery sorting methods and equipment based on neural network algorithms and a cloud-side collaborative platform for fault diagnosis and safety monitoring of gradient utilization to realize the recovery of all components of power batteries.

### 6 With a comprehensive layout of future technology, it actively responded to changes in industrial technology

GEM has innovated the traditional complexation system, overcome common technical difficulties in the industry, and achieved phased results in the industrialization technology of sodium ion battery materials and lithium-rich manganese based materials; based on atomic layer deposition and graphene coating precise modification technology, it created high-performance lithium battery cathode materials; by utilizing nano controllable technology, hydrogen fuel cell catalyst technology reserves were achieved, breaking the monopoly of foreign enterprises.

# 5

## Environment and Energy Management

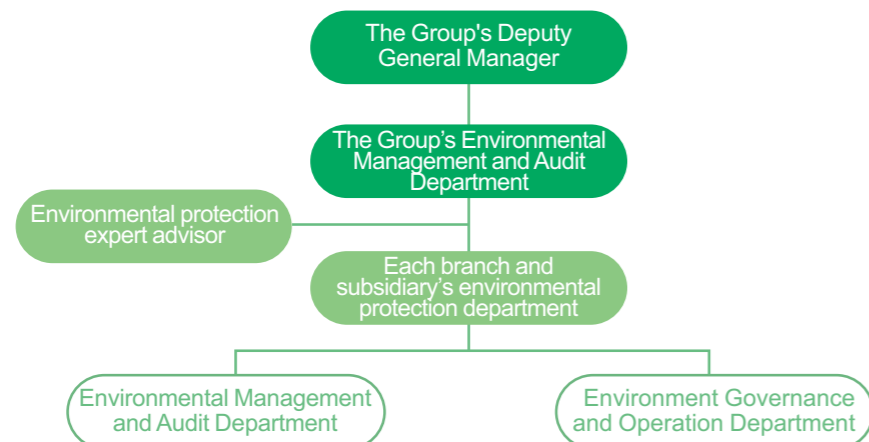


GEM strictly abides by national environmental protection laws and regulations, adheres to the environmental management bottom line of "no production without environmental protection" and eliminating pollution accidents, and resolutely implements the environmental principle of "eliminating pollution, meeting emissions standards, and reducing emissions". To achieve these goals, GEM leverages information control measures to continually enhance its environmental management systems. The Company actively pursues the upgrade and transformation of environmental protection facilities, aiming to improve their efficiency and effectiveness. Furthermore, GEM promotes the adoption of advanced governance processes to tackle environmental challenges and ensure responsible and sustainable operations. Through these efforts, GEM aims to achieve refined environmental management and seeks to build a world-class green and low-carbon factory.

To ensure effective environmental management, the Company has established a dedicated team responsible for overseeing environmental protection initiatives. Furthermore, the Company has invested in the establishment of reliable environmental protection facilities. These facilities are designed to effectively mitigate and reduce pollutant emissions, promoting the preservation and protection of the ecology and environment. During the Reporting Period, no major environmental accidents occurred.

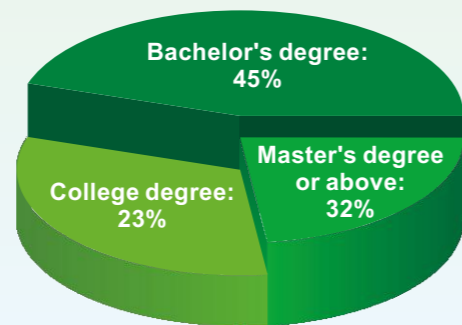
## Environmental Protection Management Management System

The Company has set up an environmental protection operation institution under the supervision of the deputy general manager of the Group - Environmental Management and Audit Department, which is mainly responsible for the Company's environmental strategic planning, supervision of the construction of key environmental governance facilities, and verification of environmental operation norms.



The Organizational Structure of the Group's Environmental Management

In 2023, the Company assigned 79 specialized environmental management employees to oversee environmental initiatives. The Company improved its environmental management system in accordance with the relevant requirements of ISO 14001. During the Reporting Period, 23 enterprises (including six newly-added enterprises) under the Company obtained ISO 14001 certification for their environmental management systems. Additionally, 100% of the subsidiaries or branches involved in key polluting units passed ISO 14001 certification.



Educational distribution of the Company's environmental managers

## Environment Supervision

With a commitment to leaving no stone unturned and a firm grip on environmental management, the Company strengthens the internal environmental control. On the one hand, through continuous on-site environment supervision, it strictly supervises the environmental protection work of all subsidiaries or branches in the park to ensure that all environmental protection measures are effectively implemented. On the other hand, by combining innovative means such as on-site environment supervision, the Company encourages employees to actively participate in environmental protection, and identify and correct problems in environmental management in a timely manner, so as to form a favorable atmosphere of full participation and full management. During the Reporting Period, the number of people participating in on-site environment supervision increased by 31.58% compared with the same period of the previous year.

During the Reporting Period, the Company carried out two rounds of group environmental supervision and verification and

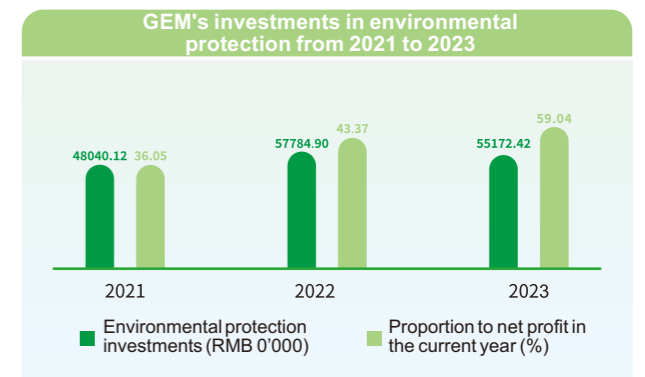
a total of 202 hidden dangers were identified and 199 rectifications were completed, with a rectification completion rate of 98.51%.



2023 Group Environmental Supervision and Verification Summary Meeting

## Investments to Environmental Protection

In 2023, the Company's environmental protection investment totaled RMB551 million, of which RMB95.8 million was allocated for the construction and upgrade of environmental protection facilities associated with new, expanded, or renovated projects. These efforts implemented the policy of "new improvements drive old, increase production without increasing pollution." RMB455.2 million was spent on wastewater and gas treatment and standardized management of solid waste to ensure stable compliance with pollutant discharge standards and that all environmental management activities were conducted in accordance with regulations.



## Information Technology

The Group was the first to adopt the "Internet + Environmental Management" model. Through the integration of "video monitoring system + online monitoring system + environmental cloud system", environmental protection data can be collected, summarized, analyzed, and released to guide and improve the level of environmental information management. By the end of 2023, the environmental protection cloud system platform has been completed and put into operation in the Company's

Jingmen Park, QMB (Indonesia) Park, Wuhan Park, Taixing Park and Jiangxi Park. During the Reporting Period, 365 daily environmental reports were issued, tracking and promptly coordinating the resolution of 794 online monitoring anomalies and 165 system offline events. This significantly enhanced the Group's environmental supervision efficiency and greatly reduced environmental management risks.



Environmental Protection Cloud Platform in Jingmen Park



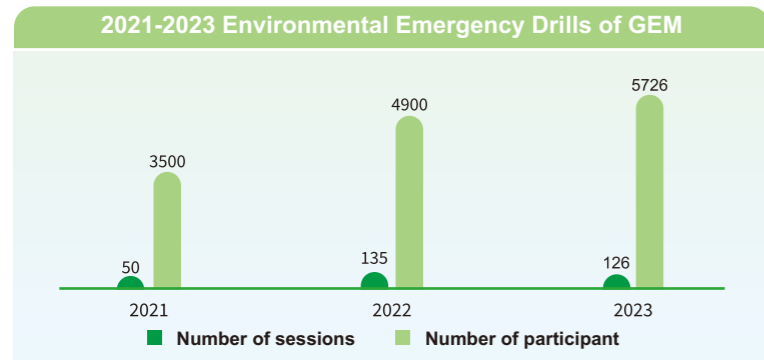
Environmental Protection Cloud Platform in QMB (Indonesia) Park



## Improvement of Environmental Protection Awareness

### Strengthening Environmental Emergency Drills

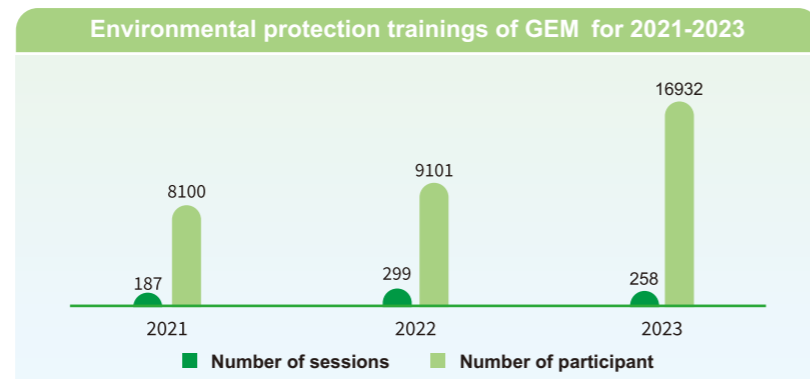
All subsidiaries of GEM have formulated "Emergency Response Plans for Sudden Environmental Incidents" in accordance with norms, and all have legally completed the record-filing work with the local government's ecological environment protection authorities. Internally, each subsidiary has developed emergency drill plans and strictly implemented them, enhancing the Group's environmental awareness and strengthening its emergency response capability for sudden environmental incidents.



Ammonia Station Leakage Emergency Drill in Jingmen Park

### Enhancing Environmental Skills Training

In order to fully implement the Group's environmental protection principle of "no production without environmental protection", the Company carried out a total of 258 environmental protection training sessions during the Reporting Period, with a total of 16,932 participants.



The number of participants is  
**16,932**



Environmental Training for Managers at the Group's Headquarters



Environmental Training in Jingmen Park

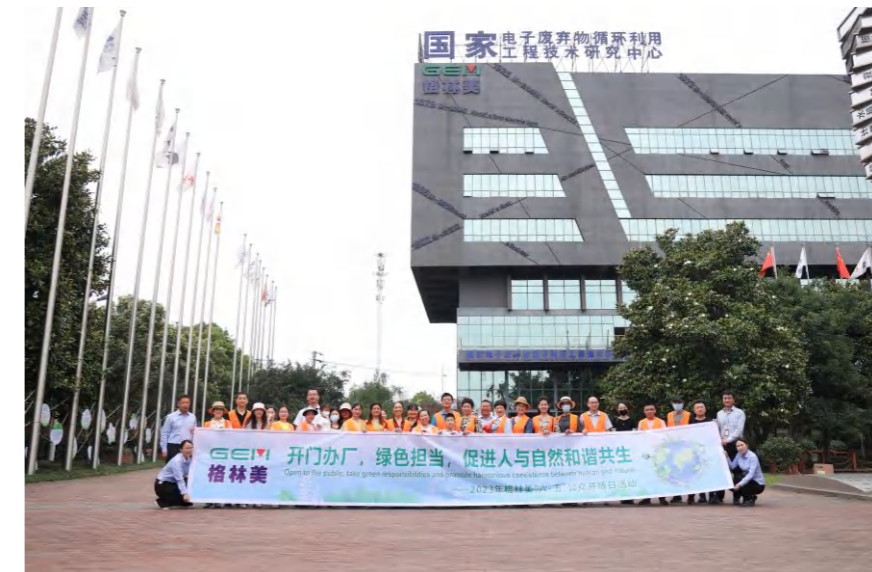
## Shore up Promotion of Environmental Protection Culture

The number of participants was

**200,000**

The Company actively implemented its "Open Door to Establish Factories" strategy, vigorously disseminated the green concept of "Limited Resources, Unlimited Recycling," actively publicized the concept of low carbon and environmental protection to employees and the public, gathered strength to promote the realization of carbon peak and carbon neutrality, and demonstrated the social responsibility as a large enterprise. During the Reporting Period, the Group carried out a total of 1,544 public opening activities with 200,369 participants.

GEM actively organized public open days, inviting local National People's Congress deputies, CPPCC members, the surrounding communities, students and residents to visit the park, carried out activities such as publicizing low-carbon knowledge and quizzing on environmental protection, so as to lead the public to jointly take care of the earth, protect the eco-environment, and practice low-carbon concepts.



Public Open Day Activity on "June 5" World Environment Day in Jingmen Park



The staff of Wuxi Park carries out an electronic waste recycling promotion activity in the community

## Pollution Prevention and Ecosystem Protection

### Emissions and Waste Management

The Company carries out the declaration of emission permit and pollutant management in accordance with the requirements of the Regulation on the Administration of Permitting of Pollution Discharges, and 100% of the pollutant emissions in the Reporting Period met the standards. The Company has an electronic information display screen at the main gate of the factory to publicize the environmental information of the enterprise in real time for the society.



Disclosing Environmental Information at the GEM Jingmen Park

#### Case: Engaging community residents as social supervisors for environmental protection



Jingmen Park Hires Environmental Protection Supervisors in 2023

In order to enhance the transparency of the enterprise's environmental protection work, increase the public's trust in the enterprise, and promote the improvement of the enterprise's environmental protection management level, GEM Jingmen Park began to hire residents of the community near the business location as the enterprise's environmental protection supervisors from 2017 onwards, with four of them each year, responsible for supervising the operation of the enterprise's pollution-producing facilities and pollution-treatment facilities, and making comments or suggestions on the Company's environmental protection work.



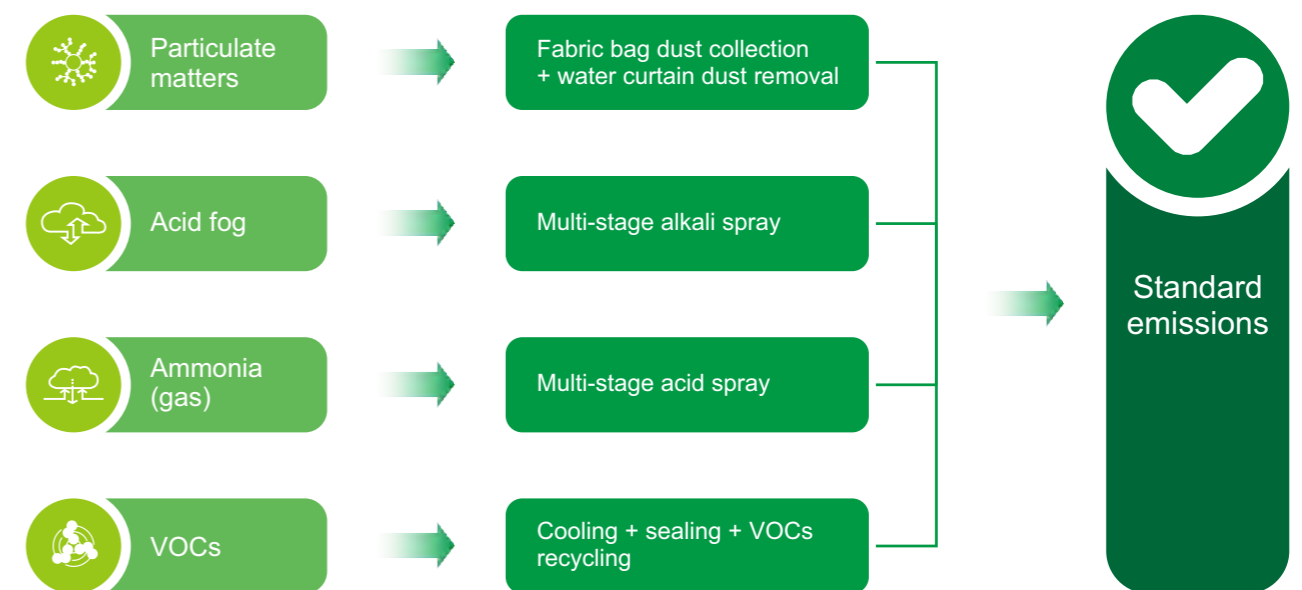
Environmental Protection Procedures in QMB (Indonesia) Park

During the Reporting Period, the Company carried out the environmental impact assessment of 22 new, renovation, and expansion projects and the "simultaneous design, construction, and commissioning" acceptance inspection of the 14 projects in total. All the projects fully and strictly followed the procedures of "simultaneous design, construction, and commissioning" for environmental protection. The parks strictly implemented the operation permit access and the pollutant discharge permit policy in accordance with the laws and regulations and promptly applied for the pollutant discharge permit, hazardous waste operation license, and other documents, operating in compliance with the laws and regulations.

QMB (Indonesia) Park improved environmental protection procedures in accordance with local regulations in Indonesia and manages the pollutants discharged in strict accordance with the requirements of the environmental protection procedures.

### Waste Gas

The Company's waste gas management follows the principle of "100% collection, 100% treatment, 100% compliance". Key emission outlets were fitted with online monitoring systems linked to local environmental protection authorities, achieving 24-hour real-time supervision.



Waste gas treatment process sketch



VOCs adsorption and desorption analysis device in Jingmen Park

VOCs waste gas online monitoring facility

### Solid Wastes

The Company's solid waste management follows the principles of "reduction, recycling, and harmlessness" and the "zoned, labeled, safe, orderly, and unobstructed" management policy to realize the full life cycle tracking and control of waste from the "cradle" to the "grave". For the solid waste generated, priority is given to those that can be utilized, and those that cannot be utilized are handed over to qualified and capable institutions for disposal.

### Protection of Soil and Underground Water

Throughout the period under review, the Company has placed significant emphasis on the environmental effects of its production and operation, particularly the impact on soil and underground water. We have developed an internal monitoring program and regularly hired qualified third-party environmental testing institutions for testing. During the Reporting Period, no environmental events occurred that significantly impacted soil and underground water.

### Biodiversity

The Company continues to pay attention to the impact of its operational activities on biodiversity, actively participates in international cooperation on biodiversity conservation, and jointly promotes global cooperation on biodiversity conservation, so as to make greater contributions to the construction of a better future in which human beings and nature coexist harmoniously. During the Reporting Period, none of the Company's business locations were located in nature reserves or non-protected biodiversity-rich areas, and none of the Company's production and operation activities were found to have a significant impact on biodiversity.

#### Case: Upgrading of waste gas control facilities



Waste Gas Treatment Facility of Jiangxi GER Co., Ltd.

Jiangxi GER Co., Ltd.'s granulation workshop upgraded its waste gas treatment process from "spray + dry electrostatic + activated carbon adsorption" to "spray + wet electrostatic + activated carbon adsorption and desorption + catalytic combustion". The VOC emission concentration was reduced from approximately 20 mg/m<sup>3</sup> to about 10 mg/m<sup>3</sup>, a 50% reduction.

#### Case 1: Wastewater Salt Reduction



Reverse Osmosis Membrane Systems

In order to reduce the impact of salts in wastewater on soil and surrounding organisms, the Company has invested a total of more than RMB400 million to carry out technological reform of the extraction and purification process to reduce the salts in the extracted liquid, and constructed two sets of reverse osmosis membrane systems and ten sets of MVR desalination facilities to remove salts in the wastewater of the synthesis process. After the above treatment, 80% of the salt in the wastewater can be removed.

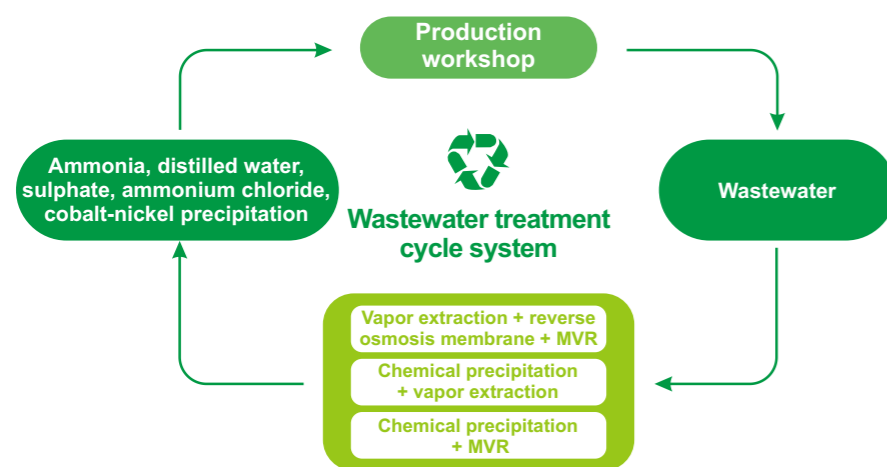
#### Case 2: Participation in Biodiversity Conservation Initiatives



In September 2023, the Company was invited to participate in the 2023 International Forum on Sustainable Mineral Supply Chains (SMISC) and was part of the official launch of the *Mining Industry Participation in Biodiversity Conservation Initiative*.

Ms. Zhang Wei, Deputy General Manager of the Group, was invited to participate in the official launch of the Mining Industry Participation in Biodiversity Conservation Initiative.

### Exhaust Water



Wastewater Treatment Process of Jingmen Park

The Company strictly followed the principles of "separating rain and sewage, clean and dirty water, and polluted water, as well as quality-based collection and classification treatment" for wastewater collection. Treated wastewater was prioritized for reuse in production. Any remaining wastewater that meets the required standards was discharged. The wastewater discharge outlet was fitted with an online water quality monitoring system linked to local environmental protection authorities, achieving 24-hour real-time supervision.

### Case 3: The Company Uses Green Mines Sourced from Hengjia

The Company actively promotes biodiversity conservation in the supply chain by using green ores from miners that conduct biodiversity remediation, encouraging suppliers to fulfill their social responsibilities, and jointly promoting the construction of a responsible supply chain.



### Case 4: Mangrove Planting at the Jetty near the Indonesia Morowali Industrial Park



"Mangrove Planting" in Indonesia

The Company not only takes active actions within the park, but also works to promote the creation of new biodiversity conservation areas and maintain the ecological integrity of these areas. The Company, together with the Industrial Park, carried out mangrove planting near the jetty in Padabaha Village, Bahadobi Town. 500 mangrove seedlings have been successfully planted, and the goal of planting 10,000 mangrove seedlings for the year 2023 has been successfully achieved.

## Resource Management

### Water Resources Management

The Company recognizes the importance of conserving water resources, actively fulfills its social responsibility, and promotes sustainable development in order to achieve win-win situation in terms of economic, environmental and social performance. The Company has formulated the Water Consumption Management Measures and the Rules and Regulations on Water Use to regulate water use and reduce water consumption through water conservation, water recycling, use of alternative water sources and other measures. During the Reporting Period, the total amount of recycled water used by the Company was 2.95 million m<sup>3</sup>.



#### Ordinary water reuse

Ordinary water produced in the process of water production is returned to the production process and park greening and other water use. The reuse rate >

30%

#### Reclaimed reuse

After the washing water of ternary materials and powder materials is filtered and concentrated by "ultrafiltration+membrane system", the produced water is used as acid and alkali preparation water as well as workshop washing water. The reuse rate is

100%

#### Distilled water reuse

The distilled water produced by the MVR evaporation and recycling system is returned to the workshop to be used as the raw water for making pure water. The reuse rate is

100%

### Water conservation cases



Water Balance Command Module of Jingmen Park  
Water Balance Command Module Interface of Jingmen Park

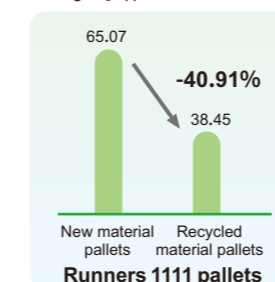
The Company has set up an environmental cloud management system and a water balance command module, which automatically collects municipal water, raw water and the amount of water supplied to the water supply pool after collection and treatment by the Environmental Management and Operation Department, and carries out accurate measurement and real-time monitoring of water consumption and water discharge at all levels of departments/workshops. At the same time, through the multi-channel early warning and reminder function, it timely finds the reasons for water consumption exceeding the standard, and rationalize water resource regulation.

### The Case for Alternative Water Sources

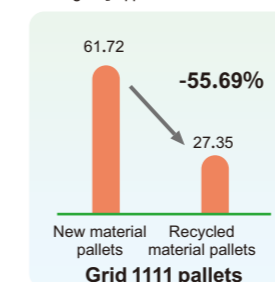
GEM attaches great importance to the development and utilization of alternative water sources and regards them as an important way to address water scarcity and promote sustainable development. The Company is actively looking for environmentally friendly and sustainable alternative water sources to reduce the dependence on natural water resources. Its North and South QMB plants in QMB (Indonesia) have added a sedimentation tank for reclaimed water, which can save 100,000 cubic meters of water resources annually.

## Packaging Materials Management

Unit: kgCO<sub>2</sub>e/piece



Unit: kgCO<sub>2</sub>e/piece



Product Carbon Footprint

Various packaging materials such as plastic pallets, jumbo bags, and metal drums are used. The Company is actively exploring green packaging solutions and optimizing the use of packaging materials throughout their life cycle. It focuses on using recycled materials and producing green packaging made from recycled materials. The Company also conducts research and development to create green packaging materials. Recycled plastic pellets are used to produce pallets for self-use or for sale. During the Reporting Period, 1,715 tons of plastic pellets were recycled, a year-on-year increase of 143.61%, resulting in the production of 103,648 green packaging pallets.

# 6

## Health, Safety and Quality



## Occupational Health and Safety Management

The Company is committed to the safety concept of "life above all, no safety, no work", has established the occupational health and safety management structure with the Chairman of the Group as the highest manager, has set up the Work Safety Committee, Occupational Health Committee and Work Safety Management Organization, has developed the Annual Work Safety Goal and Indicator Management Plan, Performance Assessment System for Occupational Health and Safety Management and other occupational health and safety management systems and operating procedures, and has clarified the safety duties and work requirements of each department and position. The Company has established an occupational health and safety management system with 100% coverage of domestic production parks. During the Reporting Period, 21 subsidiary companies (an increase of 6) were certified to ISO 45001:2018 Occupational Health and Safety Management System, with a certification coverage rate of over 70%.

The Company has actively carried out safety evaluation of new, renovation and expansion projects to ensure the safety "Three Simultaneous" and occupational health "Three Simultaneous" of the project. During the Reporting Period, the Company organized 21 safety pre-evaluations, 22 safety facility design specifications, 19 acceptance evaluations and 5 status quo evaluations, a total of 67 evaluations, representing a year-on-year increase of 45.65%.

### Occupational Health

The Company actively promotes work safety and prevention of occupational diseases, regularly carries out safe working environment and occupational health testing, and hires external organizations to carry out hazardous factor testing and assessment work on operation sites. The Company informs employees of job-related occupational health risks and harmful factors, issues targeted labor insurance products, establishes Employee Health Monitoring File, and regularly organizes occupational disease examinations for employees.

The Company continues to improve the working environment in the workshop to reduce the generation of occupational hazards. At present, the Group has realized full coverage of Three Rooms (rest room, changing room and shower room) in each park, and foreign Indonesian employees are treated according to the same occupational health standards as Chinese and Indonesian employees. The Company focuses on improving the safety awareness and skill level of employees, and regularly carries out occupational health education and training activities to help employees enhance their self-prevention awareness and ability, effectively reducing occupational health risks. During the Reporting Period, the Company's occupational health checkup coverage rate was 100%, and 198 special training sessions on occupational health were conducted, with 8,591 participants in occupational health training.

The Company has strengthened the monitoring and control of occupational hazards in accordance with the requirements of occupational health and emergency management to ensure that employees carry out production activities in a good working environment. Taking the lead in establishing personnel positioning management system in Jingmen Park and Taixing Park, the Company monitors personnel movements within the park at all times, particularly those in hazardous areas and positions with occupational hazards. This system accurately controls personnel behavior, ensuring the health and safety of employees.



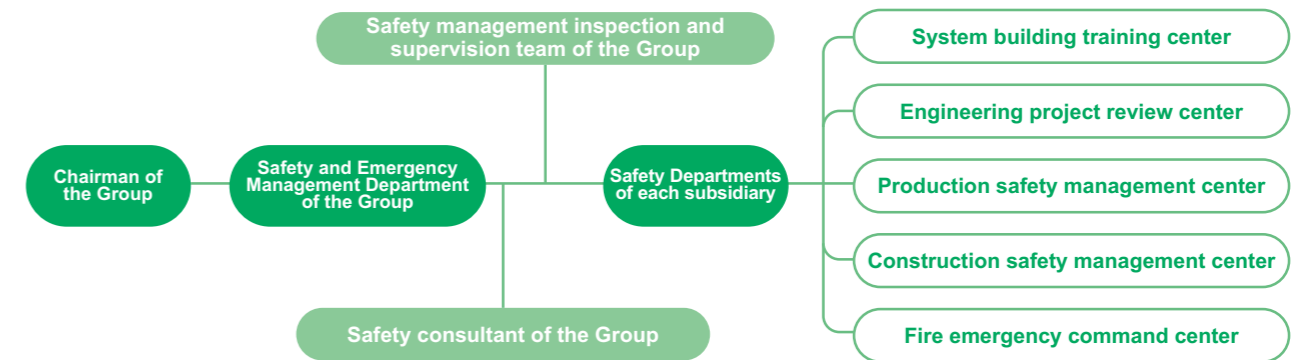
Personnel Positioning System in Jingmen Park

## Security Management

### Safety Management System

The Company consistently adheres to the safety policy of "safety first, people-oriented, prevention-focused, full participation, comprehensive management, full compliance." It improves the organizational structure for safety, occupational health, and fire safety management, and strictly implemented dual responsibilities for each position. The Company achieves horizontal and vertical integration in the work safety responsibility system, ensuring that the enterprise's work safety responsibility system is implemented at all levels to prevent and reduce work safety accidents.

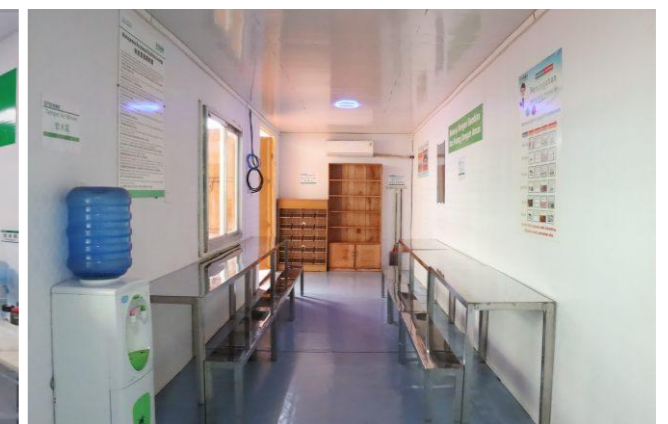
The Company has 157 full-time safety management personnel, an increase of 22.66%, including 22 registered safety engineers. 251 full-time (part-time) safety officers have been deployed in various production and manufacturing departments as well as engineering, infrastructure and other functional departments, and a number of provincial-level safety experts from Hubei, Jiangsu and other provinces have been employed year-round as the Company's safety consultants to guide the Company in safety management. During the Reporting Period, the Company added or revised 469 safety management systems, 347 safety operation procedures and 36 emergency plans.



Work Safety Organization Chart



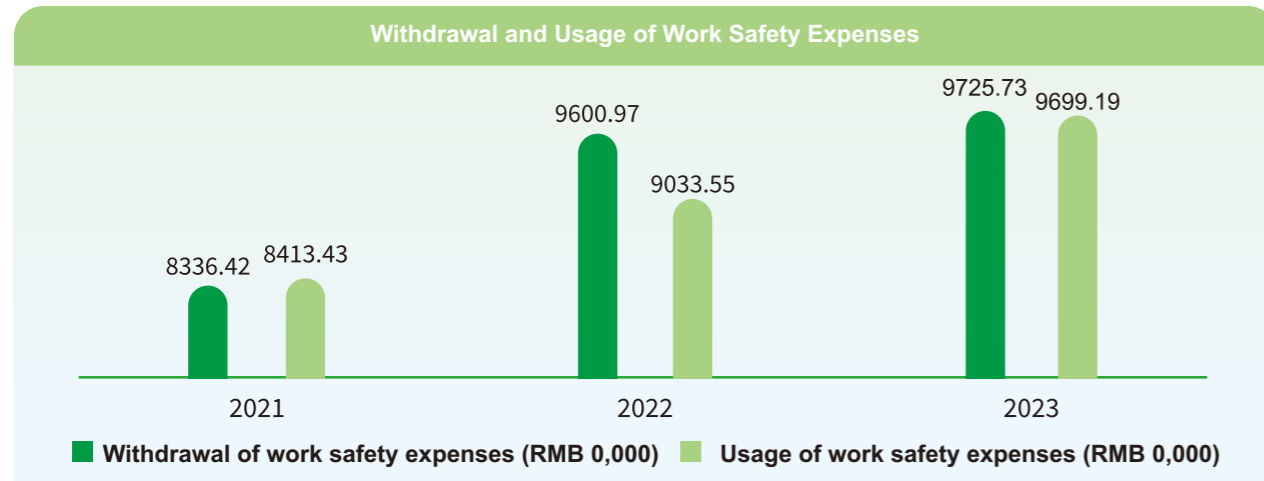
Employee Lounge in domestic Park



Employee Lounge in Indonesia Park

### Investment in Work Safety

The Company strictly complies with the Administrative Measures for the Withdrawal and Use of Enterprise Safety Production Expenses to withdraw work safety expenses, develops plans for the withdrawal and use of work safety expenses, and established accounts for the withdrawal and use of expenses. During the Reporting Period, the Company accumulated RMB97.2573 million withdrawals for work safety and utilized RMB96.9918 million with a utilization rate of 99.73%, which significantly improved the OHS environment and the degree of intrinsic safety.



GEM's usage of work safety expenses in 2021-2023

### Case: Construction of security intelligence cloud platform

The Company is dedicated to the development of "green + safety + smart" industrial parks by digitally transforming and upgrading safety and environmental protection facilities. This includes the establishment of an advanced information management platform for safety and environmental protection. The Company effectively supervises and prevents employees' occupational health and safety through the construction of security intelligent cloud platform, personnel positioning system, access control system and video monitoring, and comprehensively controls major safety risk points and key environmental pollution. During the Reporting Period, the Company has completed the construction of security intelligence cloud platform in Jingmen Park and Taixing Park.



GEM Urban Mineral Demonstration Base Security Intelligence Cloud Platform Security Intelligent Cloud System in Jingmen Park



Security Control Center Security Cloud System in Taixing Park

### Risk Control and Hazard Detection



Digital Inspection System (Security) Digitalized Hazard Detection and Management System in Jingmen Park

### Case: Implementation of the "expert system" supervision and inspection

The Company sets up the Group Safety Supervision and Inspection Office, which is led by the Group to carry out quarterly "expert system" supervision and inspection of the park. With the help of experts, we can directly hit the key points of safety management, practically solve the outstanding problems in upgrading and upgrading safety management, reduce the safety risks, eliminate the safety hazards, and put an end to the safety accidents. During the Reporting Period, a total of 751 potential safety hazards were identified, of which 741 have been rectified so far, representing a rectification rate of 98.67%.

The Company adopts hazard (risk) identification, four-color chart of safety risk, job risk "four knowledge" card, job hazard bulletin board and other ways to identify, inform and manage work-related hazards and risks. Before the operation, in accordance with the management system, stipulate the mechanism of risk study and announcement, the relevant departments study and judge the production devices, storage tanks, fire and other special operations of the territory, promptly announce to the employees the risks of toxic and hazardous and other operations in the workplace, and post risk notification boards, occupational hazards notification cards, and so on. The Company has built a digital hazard detection and management system to encourage employees to actively participate in the hazard detection and management work. Through Hazard Suishoupai APP, the Company's employees effectively carries out risk identification and hazard detection, forming a sound atmosphere for all employees to participate and jointly maintain safe production.

## Emergency Response Management

The Company has developed Emergency Response Management System, First Aid and First Aid Facilities Management System, the production site has set up emergency rescue equipment and materials, the parks have developed a comprehensive emergency response plan for work safety accidents, special emergency response plan, on-site disposal plan, and at the same time, according to the current situation of the work, relevant personnel are equipped with the appropriate level of power. The large parks and chemical parks implement 8-12 people in shifts and the small parks implement 2-4 people in groups, and strictly implement the 24-hour inspection system.

The Company has established a fire emergency monitoring center, equipped with full-time firefighters and firefighting equipment. It has also set up a comprehensive Internet of Things management platform for firefighting, a Gas Detection System (GDS), and a linkage-type centralized control system. These systems, combined with intelligent monitoring cameras, focus on monitoring areas with potential risks and hazards. The Company has a total of 107 full-time (part-time) firefighters at present, developed emergency procedures for different scenarios, each park are equipped with fire engines, and set up micro-fire stations in accordance with the principle of "two-minute reach", to realize the prevention/reduction of various types of production safety accidents in case of emergencies.



GEM Micro Fire Station

Outdoor Corridor and Emergency Evacuation Stairs of the Extraction Plant

Park Fire Trucks



Fire Emergency Drill Scene

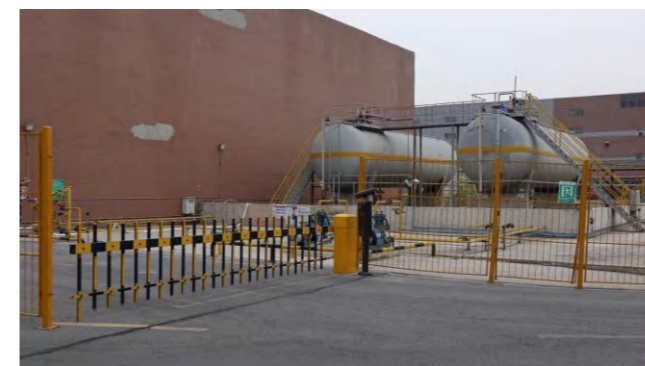
During the Reporting Period, the Company conducted a total of **1,876** emergency drills with a total of **64,618** participants, representing a year-on-year increase of **111.0%** in the number of emergency drills, and a year-on-year increase of **105.69%** in the number of participants in the emergency drills.

## Hazardous Chemicals Management

The Company has formulated the Safety Management System of Hazardous Chemicals, the Safety Inspection Management System, the Control List of Flammable and Explosive Places, the Management System of Major/Key Hazardous Sources and other related systems. By strengthening the qualification verification of hazardous chemicals storage and transportation, information registration, information monitoring, standardized loading and unloading and warehousing, the Group's "five positions" management regulations of "positioning, pointing, quantification, personnel, and timing" for hazardous chemicals has strictly implemented to ensure that there will be no safety accident in the management of hazardous chemicals.



GEM Employees Verify the Qualification of Hazardous Chemical Storage and Transportation, and Make Information Registration



Closed Management of Liquid Ammonia Stations



Inter-cylinder Storage Management

## Contractor Safety Management



Contractor Personnel Entry Safety Education Training

The Company has strengthened the safety management of contractors, formulated the Factory Entry Safety Management System, the Labor Outsourcing Unit and Personnel Management System, and the Contractor Safety Management System, etc., and strictly required the relevant parties to implement the management system in accordance with the management system. The Company will incorporate contractor personnel into the Company's unified management (unified requirements, unified standards, unified training, unified rewards and punishments), focusing on the contractor's construction operations, the strict implementation of pre-construction personnel safety training and safety and technical briefings, the implementation of safety measures during construction, the process of operation of the safety of dual-guardianship, the end of the construction of the clearing and the completion of acceptance, to ensure that the construction operations are safe and orderly.



## Safety Education Training

The Company adopts a variety of safety publicity, education and training work, including three-level safety education and training for new employees, three-level safety education and training for employees transferring and resuming safety training, daily safety training and education for the workshop team, four new (new technologies, new equipment, new materials and new processes) training, contractor safety education and training, fire safety training and so on. During the Reporting Period, the Company conducted 217,366 trainings of safety education training.



Holding Pre-shift Meetings and Taking the Safety and Environmental Protection Oath

Convene Shift Safety Activities and Conduct Safety Sharing

## Quality Management

We give full play to total quality management, promote industrial innovation with quality innovation, improve product competitiveness, and continuously promote the development of new quality productivity and industry progress. We establish the belief that "quality is the dignity of an enterprise", resolutely implement a "world-class, zero-defect" quality-first strategy, march confidently into uncharted territories of technology and quality with the absolute advantages of technological leadership and a priority on quality, and fully lead the world in super-technology development and super-quality management.

## Quality Policy

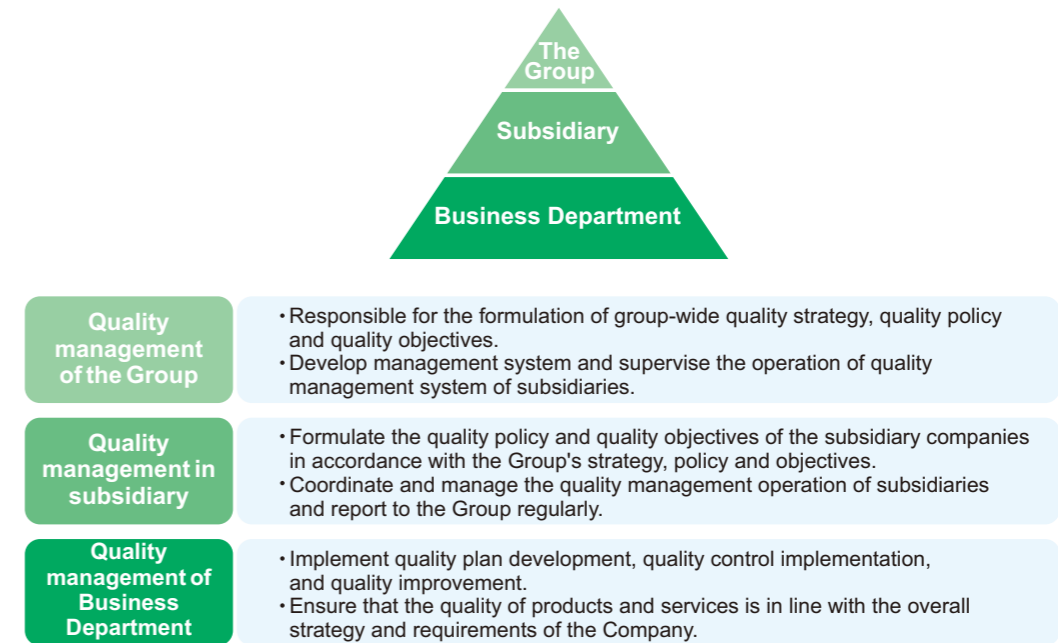
GEM adheres to the quality policy of "customer first, quality wins, refined management of the whole process, cost reduction, fine innovation, to create global leading technology competitiveness", implements the development principle of Quality First, establishes perfect quality management system, and guarantees the management of the full life cycle from the design and development to the delivery of products.



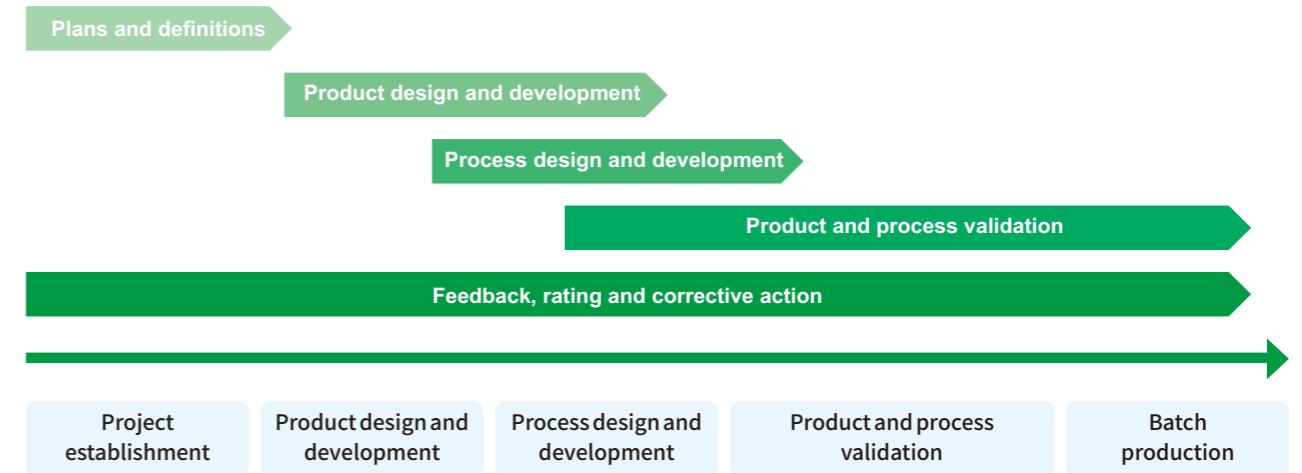
GEM Quality Policy

## Quality Management System

GEM has set up a top-down quality management structure to infuse the core concepts and values of quality management into every level of the organization and every business unit.



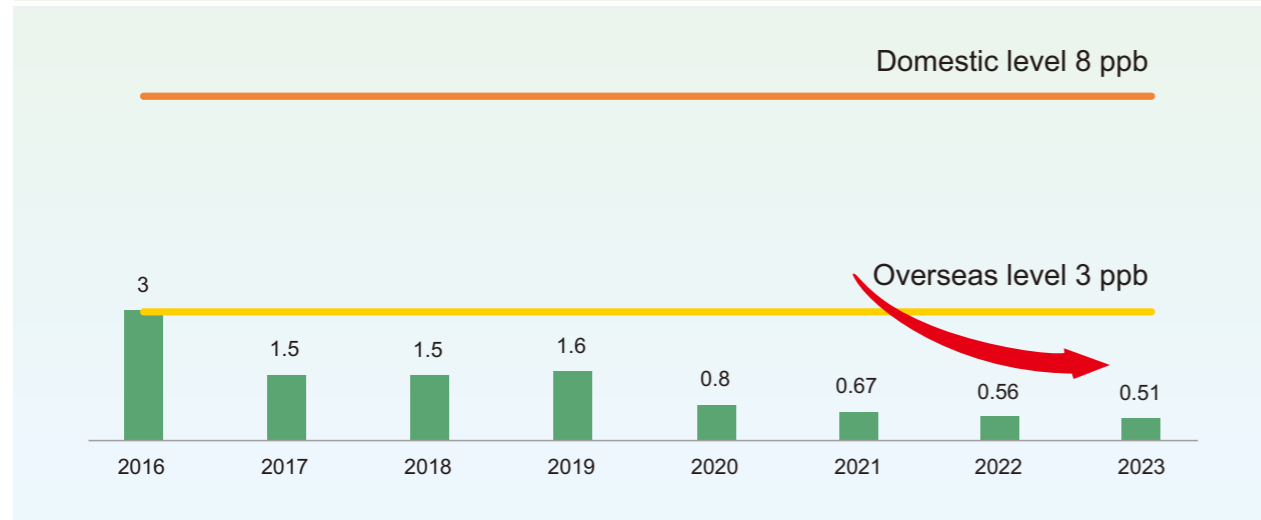
Adhering to the principle of high-quality development, the Company utilizes the PDCA and process approach management model to establish and continuously improve its quality management system, and has obtained the IATF16949:2016 and ISO9001:2015 quality management system certificates, which cover major parks at home and abroad. The Company increasingly explores the development needs of downstream companies and continues to improve our project management. On top of the original project development process, we have added the flow management process in the early stage of mass production, which is of concern to our customers, and accurately identifies the special needs of our customers before mass production, so as to ensure that the products we produce can satisfy our customers and make them feel relieved to use.



## Quality of Magnetic Foreign Matter in the High-nickel Industry Showcases the Leadership in Maintaining Quality Standards in the Industry

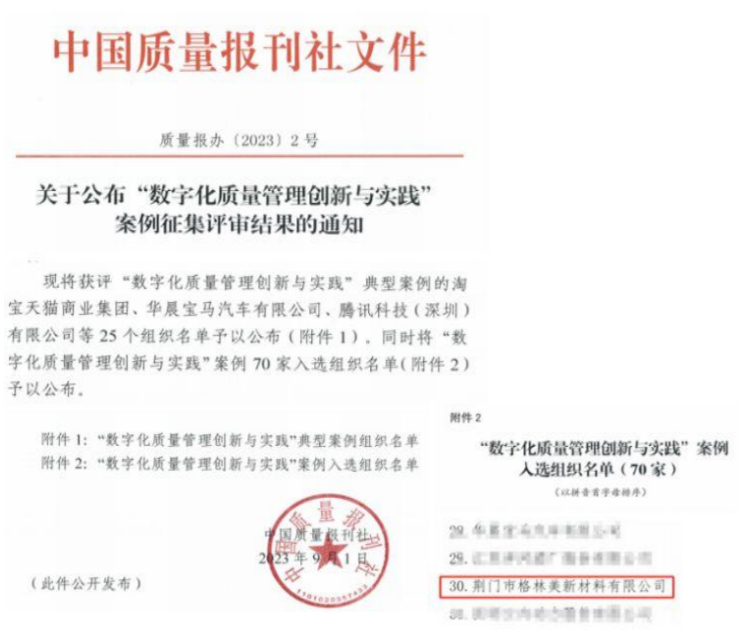
The Company carries out all-round management of metal foreign matter, and the average value of magnetic foreign matter of high-nickel precursor materials is 0.51 ppb in 2023, which showcases the leadership in maintaining quality standards in the industry and reaches the goal of customers.

Mean Value of Magnetic Foreign Objects (ppb) for High-nickel Precursor Materials



## Digital Quality Management

Based on ISO9001 and IATF16949 system, GEM's digital quality management system realizes the quality management process of the full life cycle of the product from raw materials, production process, and product delivery to after-sales quality management. The system integrates with the LIMS system to automatically capture resultant data and centrally display process data and product information. It performs trend analysis on key process parameters and summarizes alarm points for anomalies, facilitating the early detection of irregularities and the optimization of product quality. During the Reporting Period, GEM's digital quality management practice was selected as a case study of "digital quality management innovation and practice" in China Quality News.

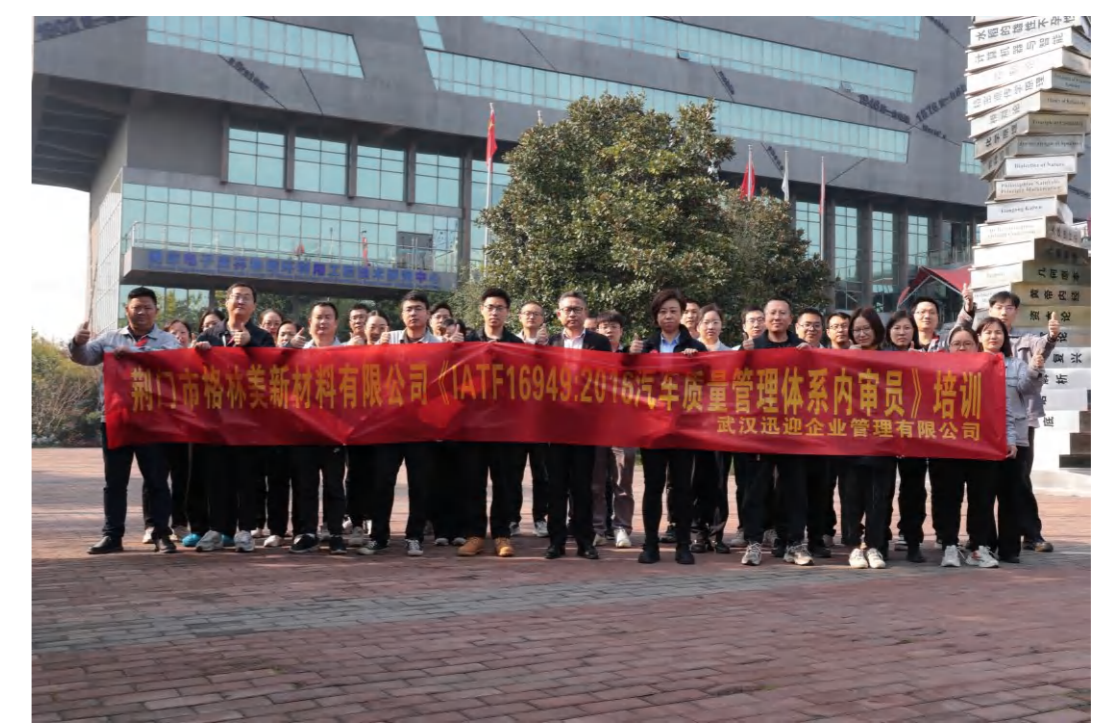


GEM was selected as a case study of "digital quality management innovation and practice".

## Quality Culture Heritage

A total of **122** quality training sessions were conducted, with a total of **3,449** participants.

The Company attaches great importance to the development of quality awareness and core quality skills. In 2023, the coverage rate of quality training for new employees was 100%. A total of 122 quality training were conducted across various areas, including the quality management system, core quality tools, VDA6.3, and continuous improvement, with a total of 3,449 participants. The Company will introduce more advanced quality management concepts and methods to provide employees with a broad learning and development platform.



Quality Management Training in 2023

# Sustainable Supply Chain

Signing Ceremony of Cooperation Documents between Indonesia and China

中国—印度尼西亚合作文件签署仪式

October 16<sup>th</sup>, 2023, Beijing



## Enhancing Supply Chain Resilience

### Supply Chain Management System

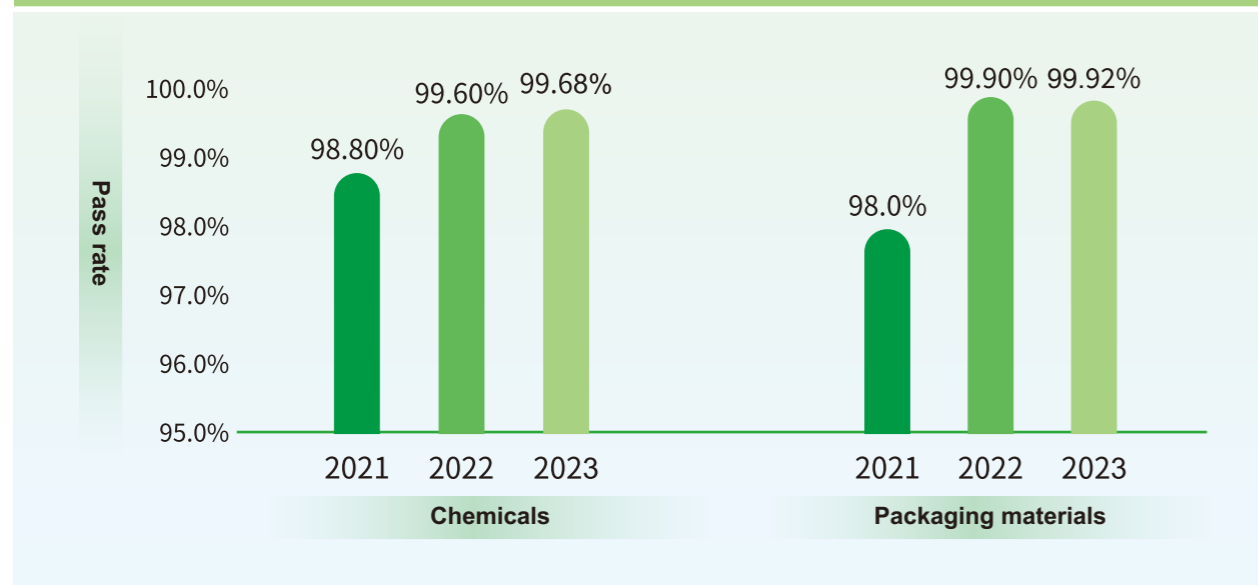
GEM follows the management guidelines of ISO 9001-2015 and IATF 16949-2016 quality management systems and established a sound supplier management system. Supplier Quality Management Procedures have been developed to systematically manage various aspects, including new supplier admission, supplier performance assessment, and supplier improvement training. These efforts have improved raw material pass rates.

In 2023, the Company implemented a proactive supplier management strategy by engaging in both offline visits and online promotional activities. This approach aimed to effectively communicate requirements to suppliers, engage in collaborative discussions for improvement, and ultimately achieve early quality prevention. The aim was to gradually enhance the quality of supplier product deliveries and meet other related delivery requirements.



Supplier full process management

### Improvement in the incoming raw material pass rate

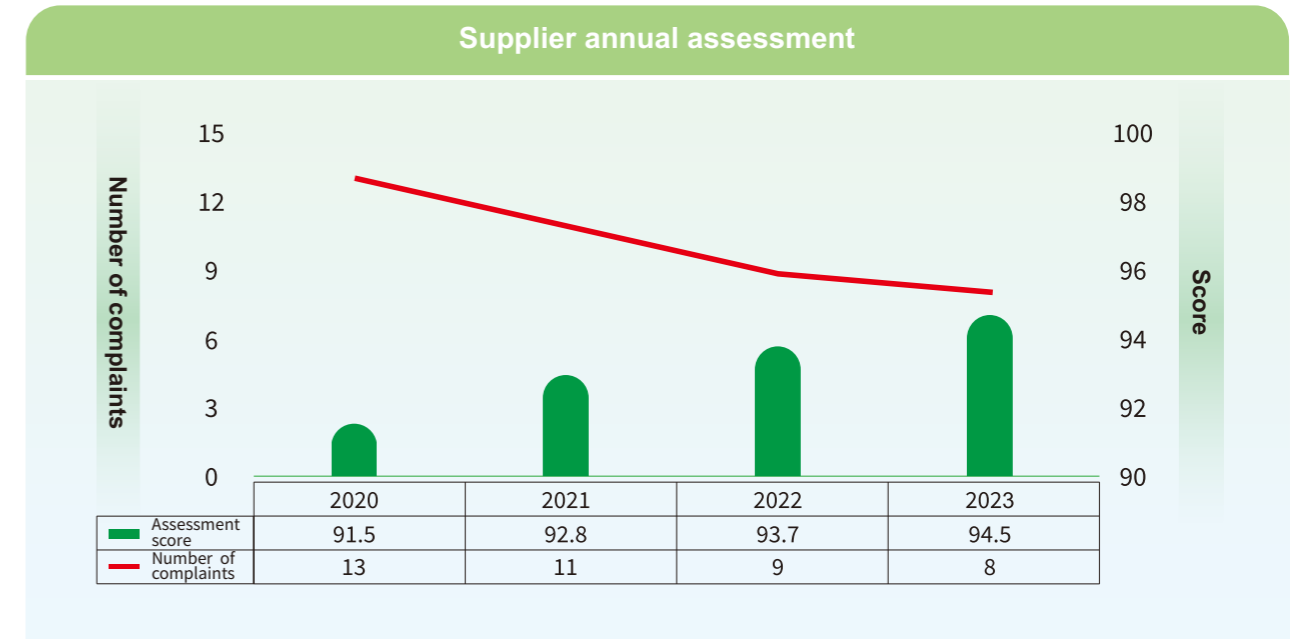


Improvement in the incoming raw material pass rate

### Supplier Assessment

The Company classifies its suppliers into different grades according to the supplier evaluation procedure, assesses its suppliers on a monthly basis through the Qualified Supplier List, and audits its core suppliers at least once a year. We also prioritize the sustainable development of our suppliers. In addition to signing business contracts, we annually enter into agreements with suppliers, namely the Agreement Open and Transparent Cooperation from Supplier and the Letter of Commitment on Non-toxic and Harmful Substances.

The Company regularly organizes training and assessment for suppliers. This initiative has resulted in a significant improvement in the year-end assessment score of suppliers and a noticeable decrease in production complaints.



Supplier capacity improvement

We are committed to empowering our supply chain partners and continuously enhancing the overall supply chain. Based on the supplier's audit results from the previous year, we conduct regular or irregular audits for suppliers categorized as B-level or below. Following the monthly assessments, B-level and below suppliers are included in the next month's training plan, where they will receive online or offline quality training. Additionally, we provide irregular cross-training to address recurring quality issues with suppliers.

## Responsible Minerals



Certificate of Membership in the Responsible Critical Mineral Initiative

In accordance with Guideline for Due Diligence Management in Responsible Mineral Supply Chains (hereinafter referred to as "Chinese Guidelines"), and Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (hereinafter referred to as "OECD Guidance"), GEM has developed the GEM Due Diligence Policy for a Responsible Global Supply Chains and GEM Supplier Code of Conduct. GEM operates a responsible management system for its mineral supply chain and has established a Complaint Mechanism. The Company's designated email address for complaints is [csr@gem.com.cn](mailto:csr@gem.com.cn).

In 2019, GEM officially joined RCI<sup>1</sup> (Responsible Cobalt Initiative) and RMI<sup>2</sup> (Responsible Minerals Initiative) as their member. GEM is committed to implementing responsible management of the mineral supply chain and embarking on the path of sustainable development and responsible corporate citizenship.

<sup>1</sup> Introduction to RCI: On November 28, 2022, the Responsible Cobalt Initiative (RCI) announced its expansion into the Responsible Critical Mineral Initiative. In March 2023, the RCI held a comprehensive meeting where over 30 companies from the critical mineral supply chain, including upstream and downstream enterprises, jointly signed the Joint Action Initiative to Promote High-Quality Development of Critical Mineral Supply Chains.  
<sup>2</sup> Introduction to RMI: The Responsible Minerals Initiative (RMI), was established in 2008 by members of the Responsible Business Alliance (RBA) and the Global e-Sustainability Initiative (GeSI). Over the years, this initiative has emerged as one of the most trusted and widely utilized resources across various industries to address responsible mineral sourcing issues within their supply chains.

In 2023, in accordance with the requirements of the second edition of the Chinese Guidelines and GEM's development needs, the Five Steps Approach was upgraded to the Six Steps Approach. Simultaneously, the responsible management of cobalt was enhanced. As a result, GEM has incorporated all minerals into its mineral supply chain responsible management system.

### Due Diligence Management Process for Responsible Mineral Supply Chain



Mineral Supply Chain Due Diligence Management Assessment Certificate

### Customer Responsibility

The Company adheres to the customer-centered, customer demand-oriented, and has established a customer satisfaction and investment We will continue to improve the quality of our products and services, listen to our customers' needs, and properly resolve their complaints. Resolve customer complaint incidents and continuously improve customer satisfaction.

### Satisfaction Management

The Company has formulated the "Customer Satisfaction Control Program" and other management systems, and carries out annual satisfaction surveys of domestic and overseas customers. The Company compiles a list of problems based on the research results, launches special improvements, and completes the feedback within the time required by the customer. During the Reporting Period, the Company's customer satisfaction was 98%, an improvement of 0.5% compared to 2022.

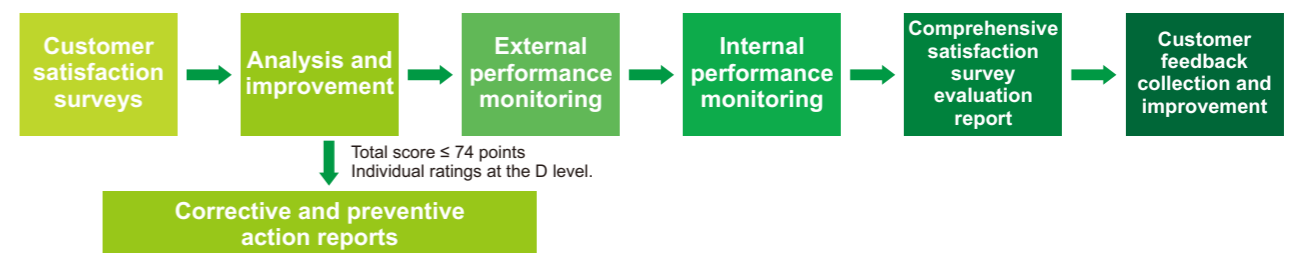
Grimme has grown together with Samsung SDI and received the SCM Innovation Award from Samsung SDI during the Reporting Period.



SCM Innovation Award presented by Samsung SDI

### Customer Complaint Management

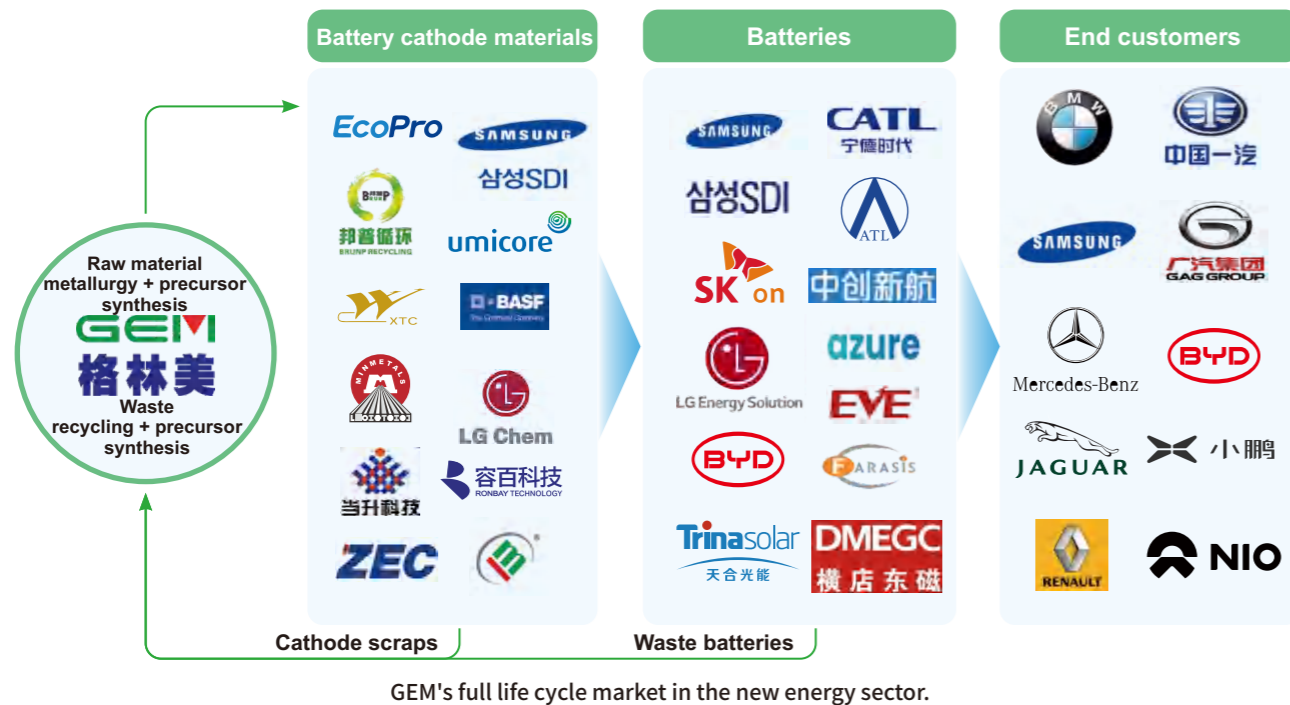
The Company attaches great importance to the response to customer complaints, has set up a management structure and specific functional division of labor for responding to customer complaints, and has formulated the "Customer Complaints Handling Control Procedures". Upon receipt of feedback on abnormalities, the Company will carry out investigations into the causes at the first time and formulate corrective action plans, so as to ensure that the rights and interests of the customers are protected to the greatest extent possible. During the Reporting Period, 100% of customer complaints received by the Company were handled and resolved and all were successfully closed, with zero product recalls.



Management framework established for customer satisfaction management

## Empowering Industry for Common Prosperity

GEM is committed to promoting low-carbon development in the global new energy industry and driving sustainable development in the new energy sector. It aims to collaborate in building a globally competitive green supply chain and value chain, achieving synergistic development of economic and environmental performance.



The Company has signed the Memorandum of Understanding on Deepening Cooperation on Nickel Products and Power Battery Materials Processing Technology Research and Development with Anglo American plc, a globally renowned resource enterprise. This MoU aims to strengthen the commercial cooperation between both parties, enhance the value of their collaboration in terms of ESG and sustainable development, and promote research and development in battery materials processing technology. The objective is to facilitate the faster and more effective implementation of cooperation goals.



Wuhan Power Regeneration, a wholly-owned subsidiary of the Company, has signed a strategic cooperation agreement with BatteroTech for the green recycling and utilization of power batteries. They will work together to establish a deep strategic partnership and, in accordance with the requirements of global green supply chain management, build a comprehensive green management system for the full life cycle of power batteries. This collaboration aims to create a globally leading model for green recycling and utilization of power batteries.



ECOPRO MATERIALS, a joint-stock company of the Company, was listed on the South Korean stock exchange on November 17, 2023. This listing witnessed the remarkable achievements of cooperation between Chinese and South Korean enterprises, contributing to the stabilization of the global market with a focus on the South Korean market.

## Industrial Business Ecosystem and Common Prosperity



GEM and GAC Group signed the Strategic Cooperation Framework Agreement between GAC Group and GEM for Jointly Building the New Energy Full Lifecycle Value Chain. Both parties will collaborate on constructing the new energy full lifecycle value chain on a global scale. This collaboration aims to establish a comprehensive value chain system for the green recycling, resource utilization, and remanufacturing of end-of-life new energy vehicles, waste power batteries, and their by-products. The ultimate goal is to create a complete lifecycle value chain encompassing "New Energy Vehicle Recycling - Power Battery Recycling - Nickel-Cobalt-Lithium Battery Material Remanufacturing - Battery Material Remanufacturing - Power Battery Remanufacturing."



GEM (Wuxi), together with CAHAYA and Weiming (Hong Kong), has jointly signed a Joint Venture Framework Agreement for the Construction of a Nickel Ore Smelting Production Project for New Energy Nickel Raw Materials (Intermediate Nickel Product) (20,000 tons of nickel per year) in Indonesia's IMIP Park on Pulau K. This agreement aims to gradually establish an integrated industrial chain, spanning from "Nickel-Cobalt-Manganese Crystals - Ternary Precursors - Cathode Materials," to meet the demands of the European and global markets. The objective is to create a globally competitive manufacturing system for new energy nickel raw materials.



The Company has signed a joint venture agreement titled Joint Venture Agreement for the Construction of Laterite Nickel Ore Hydrometallurgy Project for New Energy Use (Intermediate Nickel Product of 30,000 tons per year) with PT Merdeka Battery Materials Tbk, a leading player in the Indonesian nickel resources industry. This agreement strengthens the Company's source guarantee for Indonesian nickel resources and facilitates the deep integration of Indonesian local resources with Chinese technology. It is beneficial for establishing a key battery raw materials and battery materials supply chain model with "Indonesian resources, Korean materials, and European and American markets." This initiative effectively addresses and meets the strategic challenges and requirements posed by the U.S. Ira Bill, while satisfying the demand for precursor orders from overseas markets such as South Korea. It serves as an effective strategic measure to stabilize the core South Korean market and expand into the European and American markets, thereby safeguarding the Company's position in the global market.



The Company has signed a MoU with SK On and ECOPROMATERIALS, aiming to successfully establish a key battery raw materials and key battery materials supply chain model, encompassing "Nickel Resource Development - Raw Materials and Materials Manufacturing - Battery Manufacturing - Global Market Focus." This collaboration not only effectively addresses and meets the strategic challenges and requirements posed by the U.S. Ira Bill, EU CRMA, and other regulations but also serves the development needs of South Korea's new energy sector and the global new energy industry in a highly efficient manner.

# 8

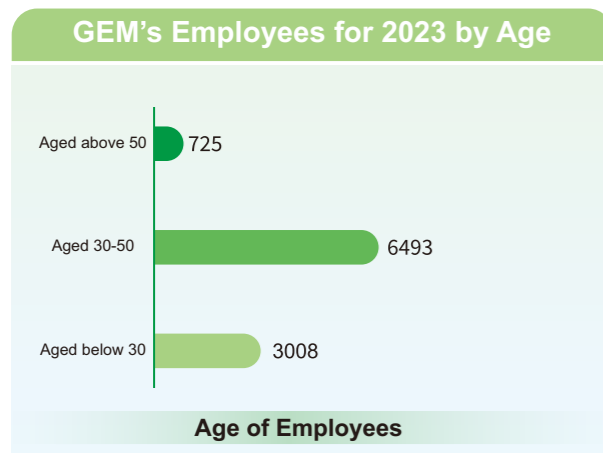
## Employee Development



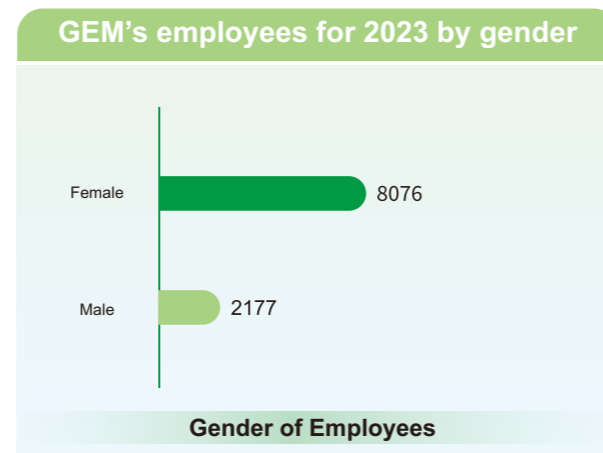
## Diversity and Inclusion

We are committed to building an inclusive, diverse, and inclusive culture. In recruitment, compensation, training, and promotion opportunities, GEM does not discriminate or treat employees unfairly based on age, disability, ethnicity, gender, marital status, nationality, political affiliation, race, religion, sexual orientation, or union membership. The Company places a strong emphasis on the growth and development of women. In the revenue-generating department<sup>1</sup>, female employees account for 48.15% of the workforce. Regarding STEM<sup>2</sup>-related positions, female employees make up 18.61% of the workforce. As of the end of the Reporting Period, the total number of employees in the Company is 10,253, with foreign nationals accounting for 19.73% of the workforce.

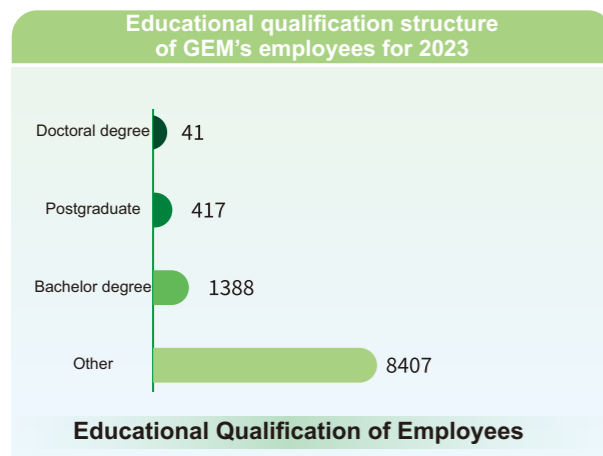
### Age Structure



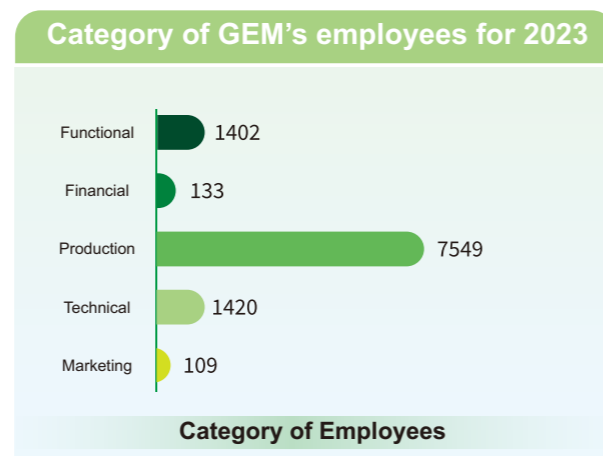
### Gender Structure



### Educational Qualification Structure



### Employee Categories



## Diverse Workforce

GEM's employees come from 21 ethnic minority groups, including the Tujia, Miao, Zhuang, Manchu, and Hui ethnicities. These employees represent a diverse range of backgrounds, covering eight countries, namely China, South Korea, Japan, Indonesia, the United Kingdom, Canada, New Zealand, and Singapore. Notably, there are over 2,000 employees who hold Indonesian citizenship.

<sup>1</sup>Revenue-generating Department refers to the department that distinguishes itself from the Administrative Department and works to increase the company's revenue.  
<sup>2</sup>STEM-related positions refer to positions that are associated with Science, Technology, Engineering, and Mathematics.

## Employees' Rights and Interests

GEM strictly adheres to the Labor Law of the People's Republic of China and other relevant local laws and regulations. During the Reporting Period, all of the Company's regular employees are laborers who have reached the age of 18 and have signed labor contracts in accordance with the law. We strongly oppose any form of discrimination and forced labor. GEM is committed to continuously improving our management mechanisms to ensure that employees enjoy their legal rights and benefits.

### Employee Communication

We prioritize effective communication between employees and encourage mutual understanding and exchange among employees from different ethnicities, regions, and cultural backgrounds. During the Reporting Period, through labor unions, staff representative meetings, employee satisfaction surveys, employee complaint, and other channels, GEM actively listens to and provides feedback on employees' opinions and suggestions regarding the Company. Additionally, we have organized multiple exchange activities between Chinese and Indonesian employees.

### Employee Communication Meeting

Holding employee communication meetings is an effective way for the Company to insist on and improve the GEM's democratic management, democratic monitoring system. The Company's labor union is responsible for holding meetings. The communication meetings are held with representatives of workers on a regular basis to collect worker's comments and suggestions, so as to help GEM discover and solve the problems in a timely manner.



PT.QMBNEWENERGYMATERIALS (QMB) organizes learning sessions on the Indonesian Labor Law, Cultural Differences between Indonesia and China, and Communication Skills and Considerations for Employees.

### Channel Employee Compliant

The Company gives respect to each employee's complaining rights and has opened a complaint channel e-mail address all staff can use.  
 E-mail address: shensu@gem.com.cn (Employee complaint)  
 csr@gem.com.cn (CSR complaint)



## Care for Employees

The Company dedicates itself to creating harmonious and comfortable work settings for employees. Both the Company and its affiliated parks and subsidiaries have established labor unions that are primarily responsible for safeguarding the legitimate rights and interests of workers and promoting employer rights. These unions also organize activities to care for and show appreciation to employees.

Providing all staff with free dormitory and talent apartments to leading and innovative talents.

A series of activities are organized and carried out at Mid-Autumn Day, National Day, Chinese New Year and Eid al-Fitr in combination with the festive features and traditional customs. Special events are held to celebrate holidays and provide support for the families of overseas employees at the QMB (Indonesia) Park.

Providing activity centers and activity facilities like basketball courts, badminton courts, gyms, KTV rooms, movie rooms, and libraries.

Providing exclusive facilities for Indonesian employees, including dedicated cafeterias, dormitories, and prayer rooms based on their lifestyle customs.



Employee Dormitory Area of GEM Green Homes



QMB (Indonesia) Employee Dormitory Area



Badminton Court, Gym



Eid al-Fitr meal sharing for QMB (Indonesia) employees



Care activities for overseas QMB (Indonesia) employees' families on Dragon Boat Festival



International Women's Day celebrated by QMB



Prayer Room for Indonesian employees of QMB (Indonesia) Park

## Employee Development and Training

We are committed to building a diverse talent system and personnel structure that possesses a global perspective, international competitiveness, and aligns with the interests of the host countries. Adhering to the principle of "fairness and justice", we provide all employees with equal opportunities and career development platforms in accordance with the Employee Manual and other human resources management systems. Based on the talent philosophy of "investing in talent, and helping fulfil the dream of talent," the Company released three "one-thousand" talent training programs. We have also established a three-tier innovation talent system combining "research talent -engineers -industrial artisans" with "leading talent - excellent talent -skilled talent."



GEM's 2023 Postdoctoral Exit Report & the 2023 Postdoctoral Research Proposal Meeting

On March 19, 2023, GEM held a prestigious event, the 2023 Postdoctoral Exit Report & the 2023 Postdoctoral Research Proposal Meeting. The event was graced by esteemed experts, including Professor Sun Xueliang, a foreign academician of the Chinese Academy of Engineering, an academician of the Royal Society of Canada, and the Canadian Academy of Engineering. Professor Sun Xueliang also serves as the lifelong Chief Scientist of GEM's new energy materials and ultra-technology. In addition, Professor Guo Xueyi, Vice President of Central South University, and Professor Li Jinhui from Tsinghua University were present. A panel of 13 experts, including Professor Xu Kaihua, Chairman of GEM and the mentor of the postdoctoral workstation, unanimously agreed on the exit of two postdoctoral investigators and the commencement of research for the remaining 12 postdoctoral investigators.

## Promotion Path

The Company places significant emphasis on employee development. To facilitate this, we have designed "dual channels" for career advancement, namely the "management path" and "technical path." These paths allow employees to choose a career trajectory aligned with their interests and strengths, enabling them to develop their abilities in a focused and clear manner. Through defined job positions and ranks, we ensure that each employee's growth and contributions are appropriately recognized and reflected.

### Case: Selection and Incentive Program for 500 Indonesian Young Talents and 1,000 Indonesian Skilled Workers

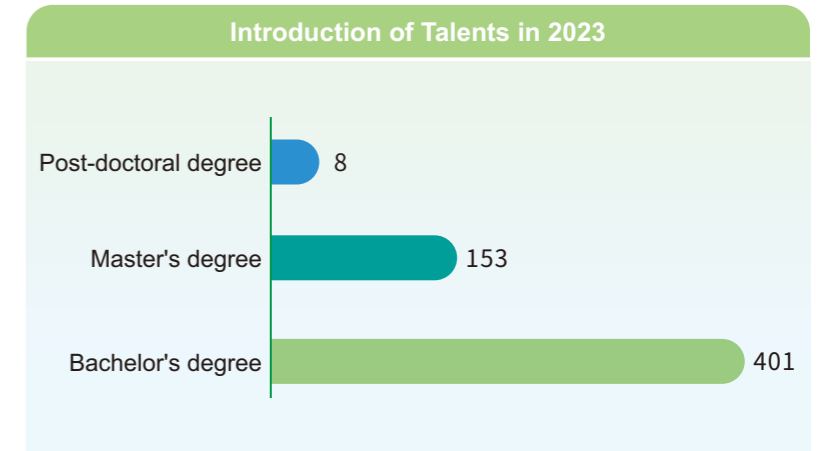
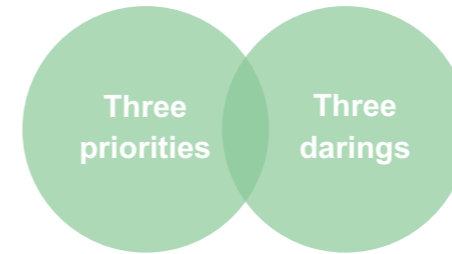
QMB (Indonesia) has announced a selection and incentive program for 500 Indonesian young talents and 1,000 Indonesian skilled workers. The evaluation and appointment of Indonesian young talents take place every six months. During the Reporting Period, the first batch of 65 Indonesian managers and young talents were promoted and subsequently assumed important management positions in their respective business sectors.



Selection, Cultivation, and Incentive Policy Announcement Conference for 500 Indonesian Young Talents held by QMB (Indonesia) of GEM.

## Introduction of Talents

GEM has adopted a talent strategy centered around "three priorities and three darings", encouraging the entire organization to be bold and proactive in attracting, nurturing, and effectively utilizing talent. In the fiscal year 2023, GEM launched the GEM Elite Talent Program globally, with the objective of recruiting and selecting individuals who embrace GEM's green circular culture and its mission of sustainable development. This program focuses on precisely attracting, nurturing, and assembling a group of high-caliber talents with an international perspective, breakthrough expertise in future super technologies, adeptness in international business management, and the ability to make significant contributions to GEM's global expansion. By adhering to the talent concept of "investing in talents to shape the future" and "Invest in talents first and then invest in capacity," GEM aims to position itself invincibly amidst global industry competition and challenges.



### Talent Incentives

GEM advocates the employment concept of "embracing talents, investing in talents, and helping fulfil the dream of talent to ensure their dignity and value." We consider talents as our most precious resource and place great emphasis on their development and recruitment. To support this philosophy, the Company has established the Elite Talent Management System and the Management System for Future Leading Talents, Leading Talents, and Innovative Talents. These systems provide a framework for effectively managing and nurturing talents. Additionally, we employ diverse incentive mechanisms to stimulate the enthusiasm and creativity of our talents.



## Employee Training

GEM places great importance on employee development and has implemented a multi-level talent cultivation system to enhance employee knowledge about the Company and improve their occupational quality. Various training initiatives are carried out, including programs for new employees, professional training, and management training. During the Reporting Period, the Company allocated a total of RMB20.39 million towards employee training. Throughout the year, the number of individuals who received training exceeded 10,000, accumulating a total training duration of over 680,000 hours.

### During the Reporting Period

the Company allocated a total of **RMB20.39 million** towards employee training

with a total of **10,000 participants**

accumulating a total training duration of over **680,000 hours**

**Training for new employees:** GEM conducts comprehensive onboarding training for new employees, covering the Company's profile, rules and regulations, product knowledge, relevant laws and regulations, safety and quality awareness, confidentiality provisions. Specific job-related training is also provided by the respective departments during the probationary period, enabling new employees to meet the requirements of their roles quickly.

**Elite training classes:** A two-month Elite Training Class is conducted for new graduate employee, encompassing lectures, industrial park visits, outdoor training, competitions, workshop internships, and achievement reports. The program features a combination of lectures delivered by both domestic and international experts, as well as leaders from various departments within the Company. By organizing guided tours of various facilities and front-line rotation practice, we aim to facilitate the integration of new employees into the Company and nurturing them like family, as a driving force for GEM's green and low-carbon development.



2023 Completion Ceremony of the Elite Training Class

**Management Training:** GEM implements comprehensive and high-level training programs to enhance the skills and abilities of our management personnel. The training curriculum primarily focuses on our circular culture, rules and regulations, business sectors, common equipment processes, and overall employee competencies. Through these training initiatives, we aim to enhance the overall qualities of our management personnel, aligning their development with the Company's strategic goals. This synergy between company strategy and personal growth enables us to cultivate and nurture talents for global green, low-carbon, and sustainable development.

**Mentorship Programs in our Parks:** In line with our commitment to the practice of "mentoring", we have implemented mentorship programs in GEM Jingmen Park and QMB Indonesia Park. Through these programs, experienced employees mentor and guide new employees on a one-on-one basis, establishing a more comprehensive and competitive career development path for our staff. This approach allows employees to rapidly improve their own capabilities while also contributing to the construction of a sustainable talent development system within the Company. Ultimately, our goal is to create a gathering place for artisans and talented managers.



Group Photo of Mentorship Program Kick-off Meeting & Apprenticeship Ceremony in Jingmen Park



Group Photo of Mentorship Program Kick-off Meeting & Apprenticeship Ceremony in QMB (Indonesia) Park

# 9

## Corporate Citizenship and Social Responsibility



In 2023, GEM has invested a total of RMB36.26 million in industry assistance, rural revitalization, employee assistance, educational support, and fulfilling its global ESG social responsibilities, benefiting a total of 17,000 individuals. Over the past 10 years, the Company has cumulatively invested RMB2,106.26 million in the above-mentioned aspects and benefited 30,000 individuals.

## Spread Green Energy Opening Up to Set Up the Factory

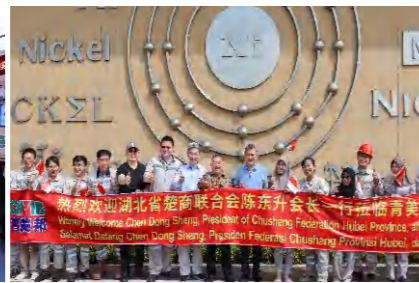
As a base for the promotion of the social circular economy in China, we actively implement the "Open Door to Establish Factories" strategy, vigorously promoting the "Limited Resources, Unlimited Recycling" green concept. The group conducted over 30 public open days and environmental-themed activities throughout the year, receiving 26,135 visitors, a year-on-year increase of 111%. In the QMB (Indonesia) Park, a total of 2,286 visitors were received, including leaders from the Chinese government, business sector, and education field, as well as entrepreneurs and experts from universities. Additionally, the park attracted global partners from nearly 20 countries and regions, including the United States, United Kingdom, South Korea, Australia, and others.



Indonesian minister of maritime affairs and investment coordination, Luhut Pandjaitan, leads a delegation from Africa on a visit and inspection tour of QMB.



Delegation from Tsinghua University's ECO Explorer Program Visited QMB



Chen Dongsheng, President of the Hubei Merchants Federation Visited QMB with His Delegation.



Lu Jing, Vice-governor of Standard Chartered China Inspected QMB with Her Delegation



XIE Wei, Vice President of Shanghai Pudong Development Bank Visited MHP Site with His Delegation



A delegation from Central South University Inspected QMB



Li Jiancheng, the President of Central South University Visited the GEM Manufacturing Venter with His Delegation.

## Chinese Training Camp

To build a bridge for technological and cultural integration between China and Indonesia, and to take the cooperation and exchange of technology and culture between GEM and the Indonesian government to a new stage, in October 2023, the Company officially launched the Chinese Training Camp under Indonesian Government-GEM-Central South University Joint Master's Program in Metallurgical Engineering. The camp targeted 40 Indonesian students and lasted for four months. In addition, an international training center was established, which included a halal cafeteria, dormitories, classrooms, prayer rooms, and reading rooms. The training program covered basic Chinese spelling and reading skills, daily conversation, teachings on Chinese traditional culture, relevant company processes, extracurricular activities, and research projects. Each student was assigned a corporate mentor for one-on-one guidance. The Company engaged experienced professors and PhD holders as teachers, and selected outstanding Chinese teaching assistants from within the Company. The courses were delivered in a combination of "senior instructor + teaching assistants" format, providing an immersive language learning environment and intensive Chinese language training. This approach aimed to facilitate better learning of metallurgical and new energy knowledge, and promote cooperation and friendship between China and Indonesia.



Chairman Xu Kaihua (left in Figure 1, right Figure 2) Cares the Learning Progress of Students from the Chinese Training Camp under Indonesian Government-GEM-Central South University Joint Master's Program in Metallurgical Engineering



Dining Room and Reading Room at International Training Center



## Boosting Rural Revitalization

GEM actively supports rural revitalization efforts, with a total of 41,370.38 mu cumulative land transfer area over the years. A total of RMB120 million has been paid as land transfer fees, contributing to the creation of 2,000 job opportunities. Furthermore, GEM provides assistance to impoverished villagers in the transferred areas each year. At the end of 2023, the Company extended support to 45 households in need, with a total amount of RMB36,000 provided as welfare aid.

GEM actively supports rural revitalization efforts, with a total of

**41,370.38**

mu cumulative land transfer area over the years

Paid RMB

**120**

million for land transfer

Created

**2,000**

job opportunities



GEM Jingmen Park carried out assistance and condolence activities in Gaolin Village.

## Infrastructure Assistance to Support the Construction of Beautiful New Countryside

In 2023, the Company invested RMB2 million to support the construction of the road and square upgrade project for the Jinghe Village Committee in Zhanghe Town and the Household Road Access project for 39 households. The Company signed the Rural Revitalization Assistance Agreement, aiming to improve rural infrastructure. This includes the construction of 1,000 kilometers of cement roads and the renovation of 2,000 square meters of asphalt-paved areas.



Roads in Jinghe Village under the Construction of GEM Assistance Project



## Employee Assistance

Engaging with employees' families and frontline workers, conducting ideological exchanges and assistance activities, and improving living facilities for employees are all part of GEM's unwavering commitment to fostering a harmonious workplace.

### Golden Autumn Scholarship

The Autumn Scholarship program is a vital initiative by the group to support employees, focus on their well-being, and care for the growth of their children. Since 2017, the Group has been continuously conducting the Golden Autumn Scholarship program, providing assistance to over 300 children of employees in need. With over RMB1 million distributed as compassionate financial aid, this initiative has effectively alleviated the financial burdens on these families and enabled aspiring students to pursue their higher education dreams.



Golden Autumn Scholarship Distribution Ceremony in Jingmen Park of GEM

Since 2017, the Company had sponsored more than **300** children of employees in need

Nearly **\$1 million** in bursaries awarded

## Poverty Alleviation and Relief

GEM is committed to fulfilling its responsibility as a listed company and actively engaging in poverty alleviation efforts. During the Reporting Period, the Company provided holiday supplies to 87 widowed and lonely elderly individuals, bringing them joy during festive occasions. Additionally, condolence payments totaling approximately RMB1.18 million were given to the families of 221 employees in need. GEM also organizes family donation activities. A total of RMB370,000 was raised to assist employees in need of medical treatment.



Family Donation Activities organized by GEM

During the Reporting Period, the Company gave approximately **1.18** million of condolence payments to 221 families of employees in need

the Company raised **RMB370,000** to assist employees in need of medical treatment



QMB Cares and Assists Indonesian Employees Affected by Residential Fire

## Supporting Metallurgical Education

GEM has long been committed to advancing metallurgical education and fostering university talent, encouraging students to engage in more innovative practices to enhance global innovation capabilities.

GEM has set up the "GEM Innovation Practice Award" at Central South University. Since 2018, the Company has awarded an annual innovation practice prize of RMB1 million to nearly a hundred outstanding innovative students and teams at Central South University. This continuous sponsorship will last for 20 years. Starting from 2022, GEM has donated over RMB30 million to Central South University, supporting comprehensive progress in industry-university-research cooperation on metallurgical education.

In 2023, GEM set up the first Chinese corporate scholarship in Indonesia at the Bandung Institute of Technology as a model of Chinese enterprises' international outreach. According to the scholarship donation agreement, GEM will donate a total of RMB10 million to the Bandung Institute of Technology (RMB1 million per year for ten years). The funds will be used to support outstanding students from the Bandung Institute of Technology to study in China and help disadvantaged students complete their education. This initiative aims to nurture more outstanding high-end technical talents for Indonesia's economic and social development. This scholarship initiative highlights the proactive role of Chinese private enterprises in promoting the "Belt and Road" initiative and science and technology cultural exchange in Indonesia.

Since 2018, the Company has awarded innovation practice bonuses of RMB

**1 million**

to nearly 100 outstanding innovative students and teams at Central South University each year

Since 2022, the Company has donated over RMB

**30 million**

to Central South University.

GEM will donate a total of

**10 million**

RMB to the Bandung Institute of Technology.



GEM has signed the GEM-Bandung Institute of Technology Scholarship Donation Agreement with the Bandung Institute of Technology

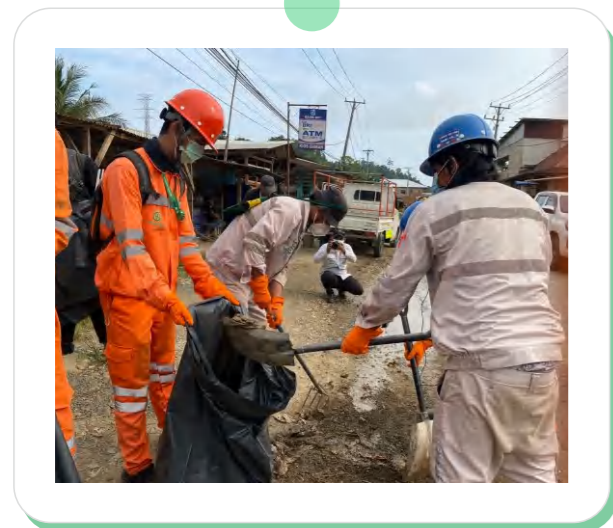
## Community Engagement and Development

We recognize the importance of community management in building a path towards modern industrial civilization and sustainable development. We are committed to resolving conflicts, respecting human rights, and bringing benefits to local communities. During the Reporting Period, we encouraged our employees to participate in community service activities in surrounding areas, including language teaching, garbage collection, and agricultural technology education.

The Company, in collaboration with IMIP and sister companies within the industrial park, laid water pipelines in three major villages: Labota Village, Fatufia Village, and Bakhomus Mul Village. Additionally, water collection stations were constructed in these villages to ensure a stable water supply. This initiative effectively resolved the drinking water issue for nearly a hundred thousand villagers in the vicinity of the industrial park. It has created a more livable environment for them, significantly improving their quality of life and greatly enhancing their access to clean and safe water for daily use.



GEM Indonesia Employees Conduct Language Teaching Activities in Labota Community



Garbage Cleaning Activities in the Surrounding Communities of Labota



Agricultural Technology Education Activities in the Surrounding Communities of Labota

## Outlook

### 2024 Plan

GEM will officially launch the Zero Carbon Plan, taking the lead in implementing global battery passports and carbon footprint measures. We will initiate the creation and demonstration of green, low-carbon, and zero-carbon parks and products. The Full Circularity Plan will be released, with the goal of achieving 50% circular utilization of nickel-cobalt-lithium resources by 2027, 70% by 2030, and 100% by 2035. We will comprehensively promote cooperation along the full life cycle value chain with global core automotive manufacturers, develop targeted circular systems for nickel-cobalt-lithium raw materials, and demonstrate models for carbon footprints and carbon passports.

We will open the door to set up factories and implement cultural integration to advance ESG and globalize brand value. Continuing the external open services of global core parks, we will spread GEM's circular culture and green industries worldwide. With Indonesia as the base, we will deepen the integration of technology, culture, and industry. Firstly, we will establish the "Indonesian Government-GEM-Central South University" joint international master's program in materials science and metallurgical engineering, extending it to two additional majors—transportation and non-ferrous metal international trade—with an annual enrollment of over 100 students. Secondly, we will build and operate the GEM-Bandung Institute of Technology-Central South University "China-Indonesia New Energy Materials and Metallurgical Engineering Research Laboratory," creating a model for China-Indonesia technological and cultural exchange.

Using the QMB (Indonesia), GEM (Shenzhen) Super Green Technology Research Institute, GEM (Jingmen), and other core parks as bases, we will conduct global brand value promotion activities with the theme of "Investors Entering GEM," disseminating GEM's value to global investors. We will implement an ESG action plan, conduct ESG pilots with park and global industry chain customers, explore the internationalization of ESG, and enhance the Company's global brand value through ESG initiatives.

### 2030 Vision

**ESG Goals:** Become a global supply chain ESG benchmark company with 100% ESG value collaboration. Achieve 100% ESG system procurement and sales. Implement an ESG action plan and conduct ESG pilots with park and global industry chain customers. Explore the internationalization of ESG and enhance the Company's global brand value through ESG initiatives.

**Green Goals:** Achieve zero-carbon manufacturing for all products. Ensure 100% circular supply of nickel-cobalt-lithium resources. Reduce annual CO<sub>2</sub> emissions by over 2 million tons.

**Revenue Goals:** Increase annual revenue from RMB30 billion to USD30 billion.

**Innovation Goals:** Enter the top tier of global corporate innovation.

**Brand Value:** Make GEM beloved by environmentalists worldwide.

**Ecological Construction:** Plant forests covering tens of thousands of acres for carbon neutrality.

**Green Power:** Build solar farms covering tens of thousands of acres. Ensure 100% green power for core products.

**Carbon Reduction:** Reduce annual CO<sub>2</sub> emissions by over 2 million tons.

**Emission control:** 100% recovery rate of VOCs, 35% reduction in energy consumption per unit, 50% reduction in water consumption per unit, 30% reduction in COD value.





## Appendix

### Key Performance Table

#### Corporate Governance and Economic Performance

Scope of data statistics during the Reporting Period

The scope of data statistics for corporate governance and economic data aligns with the scope of the consolidated financial statements of the Company.

Changes compared to the previous year

Disclosure of the Company's anti-corruption management has been provided since 2022.

Indicator	Unit	2021	2022	2023
<b>Economic performance</b>				
Total assets	RMB '00 million	343.88	441.30	526.32
Operating Revenue	RMB '00 million	193.01	293.92	305.29
Net profit attributable to shareholders of the listed company	RMB '00 million	9.23	12.96	9.34
Basic earnings per share	RMB/Share	0.19	0.26	0.18
<b>Anti-corruption</b>				
Percentage of employees participating in anti-corruption trainings	%	/	100	100
Operational points that have undergone corruption risk assessments as a percentage of total operational points	%	/	100	100
Number of operational points identified with significant corruption risks through risk assessments	Number	/	0	0
Percentage of suppliers that received anti-corruption training	%	/	100	100

#### Environmental Performance

Scope of data statistics during the Reporting Period

The scope for statistics on energy usage, water resources, emissions, waste data, and greenhouse gas emissions encompasses all production bases of the urban mining sector and new energy materials production sector subsidiaries; changes compared to the previous year have expanded the scope of energy consumption and greenhouse gas emissions sources since 2022.

Indicator	Unit	2021	2022	2023
<b>Use of energy<sup>1</sup></b>				
Total comprehensive consumption of energy	Mwh	1193497.68	1407586.65	1653985.88
Direct energy	Mwh	206991.42	279560.53	379721.47
Indirect energy	Mwh	986506.26	1128026.12	127424.41
Intensity of comprehensive consumptions of energy	MWh/RMB '1 million	61.84	47.89	54.18
<b>Energy consumption summary<sup>2</sup></b>				
Total energy consumption	Tons of coal equivalent	14.67	17.30	16.64
Blind coals	Ton	8114.27	5514.10	3099
Electricity	Mwh	488230.00	673630.63	642242

<sup>1</sup> The data of the total energy consumptions, namely the sum of energy consumption, steam consumption and energy consumption of various fuels, are the result of the summary of energy consumption data calculated by our member enterprises. For our enterprises in China, given the industry characteristics of our member enterprises, such data are calculated based on the measurement data of our member enterprises and the default values of the relevant parameters of fossil fuels in the industries as specified by the Guideline for the Accounting Methods and Reporting of Greenhouse Gas Emissions released by the National Development and Reform Commission of China.

<sup>2</sup> In 2023, the statistics of energy indicators were the summary of energy consumptions of all branches and subsidiaries of the Group at home and abroad.

<sup>3</sup> For 2023, the scope of carbon emissions calculations includes 40 domestic subsidiaries and offices, such as Jingmen Low-Carbon Zone, Taixing Park, Wuxi Park, Fu'an Park, Hunan Park, Urban Mining Group, GER Group, and Renewable Power Group. The calculations cover emissions from fossil fuels, carbonates, electricity, steam, fugitive methane, and sulfur hexafluoride greenhouse gases, as well as methane released from wastewater treatment or sludge landfilling. The baseline year for comparing carbon emission intensity is 2020.

Natural gas	'0,000 m3	1406.18	1820.41	3416
Steam	Ton	649445.63	592241.00	844611
Gasoline	'000 liters	147.88	255.68	256
Diesel	'000 liters	767.46	5135.55	353

#### Greenhouse gas emission<sup>3</sup>

Emissions	'0,000 tons of CO <sub>2</sub>	45.59	61.10	71.61
Year-on year change	%	+40.1	+34.0	+14.10
Scope 1 emissions	'0,000 tons of CO <sub>2</sub>	5.66	6.49	9.82
Scope 2 emissions	'0,000 tons of CO <sub>2</sub>	39.93	54.61	66.79
Carbon emission intensity	'0,000 tons of CO <sub>2</sub> /RMB '00 million	0.236	0.208	0.251
Year-on-year change	%	-9.51	-20.31	-3.83

#### Use of water resources<sup>4</sup>

Total water withdrawal	'0,000 tons	775.19	929.26	1666.27
Surface water	'0,000 tons	572.29	566.09	1444.04
Third-party water withdrawal	'0,000 tons	202.90	363.17	222.23
Water withdrawal intensity	0,000 tons/RMB '00 million	4.02	3.16	5.46
Total discharge volume	'0,000 tons	/	767.46	1271.01
Total water consumption	'0,000 tons	/	161.80	395.26

#### Waste gas emissions<sup>5</sup>

NO <sub>x</sub> emission	Ton	56.99	66.08	93.69
NO <sub>x</sub> emission intensity	Ton/RMB '00 million	0.295	0.225	0.307
SO <sub>x</sub> emissions	Ton	6.43	3.08	253.14
SO <sub>x</sub> emission intensity	Ton/RMB '00 million	0.033	0.010	0.829
Particulate matter emissions	Ton	41.57	33.03	57.96
Particulate matter emissions intensity	Ton/RMB '00 million	0.215	0.112	0.190
VOC emissions	Ton	/	/	0.110
VOC emission intensity	Ton/RMB '00 million	/	/	0 <sup>6</sup>

#### Wastewater discharge<sup>7</sup>

Chemical oxygen demand (COD)	Ton	1085	975.55	1004.53
Chemical oxygen demand (COD) emission intensity	Ton/RMB '00 million	5.62	3.32	3.29
Ammonia nitrogen	Ton	28.57	22.07	25.42
Ammonia nitrogen emission intensity	Ton/RMB '00 million	0.148	0.075	0.083

#### Generation and disposal of wastes<sup>8</sup>

Total solid wastes generated	Ton	162488.85	264010.30	3639218.33
Total hazardous solid waste generated	Ton	21018.00	28516.37	28744.95
Total non-hazardous solid waste generate	Ton	141470.85	235493.93	3610473.38
Total solid waste disposed	Ton	164366.04	235907.12	3524471.82

<sup>4</sup> (1) The Company primarily utilizes surface water. and PT.QMB New Energy Materials Co., Ltd., provide the park with industrial water purified from their own water treatment facilities; other subsidiaries use municipal tap water.

(2) The total water withdrawal is based on aggregated data collected from each member enterprise.

<sup>5</sup> Exhaust emissions data represent the total emissions of pollutants involved in the production and operational activities of each member enterprise.

<sup>6</sup> Wastewater emission data consist of the total emissions of pollutants involved in the production and operational activities of each member enterprise.

<sup>7</sup> Waste emission data consist of the total emissions of pollutants involved in the production and operational activities of each member enterprise.

<sup>8</sup> VOC emission intensity is 0.00036, rounded to three decimal places as 0.

Hazardous solid waste disposed	Ton	21121.27	28597.26	18328.03
Non-hazardous solid waste disposed	Ton	143244.77	207309.86	3506143.80
Generation intensity of solid wastes	Ton/RMB '00 million	841.87	898.24	11920.53

## Social Performance

Scope of data statistics during the Reporting Period

The scope of the Company's social data statistics (except for employee training and occupational health and safety data) aligns with the scope of the Company's consolidated financial statements.

The statistics for innovation performance, leadership/participation in standard setting, intellectual property protection, occupational health and safety, customer rights, supplier management, employee rights and interests, and social welfare extend to all production bases of the urban mining sector and new energy materials production sector subsidiaries.

Changes compared to the previous year

Since 2022, additional disclosures have been made regarding customer rights, supplier management, equality and diversity, customer rights, parental leave for employees, employee performance assessment, and some social welfare-related management performance.

Year	Unit	2021	2022	2023
<b>R&amp;D innovation</b>				
Investments in R&D	RMB '00 million	9.96	14.76	14.46
Investments in R&D: As a percentage of operating income	%	5.16	5.02	4.74
Number of researchers and developers	Person(s)	1050	1561	1580
<b>Leadership/participation in the formulation of standards</b>				
Total number of standards formulated	Standards	312	406	475
Number of standards led	Standards	42	62	75
Number of standards participated	Standards	270	344	400
Total international standards and standards in foreign language	Standards	0	6	6
<b>Intellectual property protection</b>				
Aggregate patent applications	Applications	2455	2953	3767
Aggregate licensed patents in force	Applications	1377	1510	1755
Aggregate trademark applications	Applications	460	570	592
Aggregate copyright applications	Applications	66	74	77
<b>Occupational health and safety</b>				
Occupational health and safety training coverage rate	%	100	100	100
Occupational health examination coverage rate	%	100	100	100
Number of safety drills	Times	/	1357	1876
Number of safety inspections	Times	/	589	465
<b>Customers' rights and interests</b>				
Customer satisfaction	%	/	97.5	98.0

<b>Supplier management</b>				
Total number of suppliers	Suppliers	/	/	2006
Suppliers in the Chinese Mainland	Suppliers	/	/	1097
Overseas suppliers	Suppliers	/	/	9
<b>Supply chain management</b>				
Number of supplier capability enhancement training sessions	Sessions	/	2	6
Class hours of supplier capability enhancement training sessions	Hours	/	16	48
Number of suppliers participating in capability enhancement training	Suppliers	/	34	46
<b>Employment of employees</b>				
Total number of employees	Person(s)	7011	10372	10253
<b>By gender</b>				
Female	%	27	25.03	21.23
Male	%	73	74.97	78.77
<b>By country</b>				
China	%	/	85.49	80.27
Foreign countries	%	/	14.51	19.73
<b>By age group</b>				
Aged below 30	%	15.10	21.29	29.34
30-50	%	75.01	69.24	63.32
Over 50	%	9.88	9.47	7.34
<b>By educational background</b>				
Doctoral degree	%	0.46	0.40	0.40
Master's degree	%	3.92	3.33	4.07
Bachelor degree	%	23.68	26.11	13.54
Below bachelor degree	%	71.94	70.16	82.00
<b>Employee training coverage</b>				
Employee training coverage	%	100	96.92	99.37
Female	%	/	25.34	22.01
Male	%	/	74.66	77.99
<b>Employee training duration</b>				
Average training hours per employee	Hours	/	14.74	67.59
<b>By gender</b>				
Female	Hours	/	16.33	76.81
Male	Hours	/	14.20	64.99
<b>Charitable activities</b>				
External donation	RMB '0,000	/	626	675

System certification

Item	Unit	2021	2022	2023
ISO 50001 Energy Management System Certification	Suppliers	1	4	6
ISO 14001 Environmental Management System Certification	Suppliers	12	17	23
ISO 45001 Occupational Health Safety Management System Certification	Suppliers	12	15	21
ISO 9001 Quality Management System Certification	Suppliers	13	16	22
IATF 16949 International Automotive Task Force Quality System Certification	Suppliers	4	4	4
Green Factory	Suppliers	6	6	6
Green Supply Chain Model Enterprise	Suppliers	2	3	3
Cleaner Production Review	Suppliers	4	6	6

Performance project outcomes

No.	Level	Corresponding department	Item	Approved industrial park
1	National level	Standardization Administration of the Nation	National Circular Economy Standardization Pilot Demonstration Project - National Pilot for Comprehensive Resource Utilization of Electronic Waste	Jiangxi GER Industry Co., Ltd.
2	National level	Standardization Administration of the Nation	National Circular Economy Standardization Pilot Demonstration Project - National Pilot for Recycling of Cobalt, Nickel, and Lithium Resources from Used Power Batteries	Jingmen GEM Co., Ltd.
3	National level	National Development and Reform Commission	National Enterprise Technology Center Branch	GEM (Jiangsu) Cobalt Industry Co., Ltd.
4	National level	Ministry of Industry and Information Technology	"Comprehensive Utilization of Retired Power Batteries in the New Energy Vehicle Industry" Company	Jingmen Power Battery Regeneration Technology Co., Ltd.
5	National level	Ministry of Industry and Information Technology	"Comprehensive Utilization of Retired Power Batteries in the New Energy Vehicle Industry" Company	GEM (Shenzhen) Recycling Technology Co., Ltd.
6	National level	National level	Specialized and New "Little Giant" Enterprise	Jiangxi GER Industry Co., Ltd.
7	National level	Ministry of Industry and Information Technology	Specialized and New "Little Giant" Enterprise	GEM (Wuhan) Urban Mining Industry Group Co., Ltd.
8	National level	Ministry of Industry and Information Technology	Specialized and New "Little Giant" Enterprise	GEM (Wuxi) Energy Materials Co., Ltd.
9	National level	Ministry of Industry and Information Technology	Green Supply Chain Management Enterprise	Jingmen GEM Co., Ltd.
10	National level	Ministry of Industry and Information Technology	National Service-oriented Manufacturing Demonstration Enterprise	Jingmen GEM Co., Ltd.
11	National level	Ministry of Industry and Information Technology	Public Service Platform for Full Lifecycle Testing and Validation of Power Batteries for New Energy Vehicles	Wuhan Power Battery Regeneration Technology Co., Ltd.

12	National level	Ministry of Science and Technology	Catalogue of National Green Low-Carbon Advanced Technology Achievement	Jiangxi GER Industry Co., Ltd.
13	National level	Ministry of Industry and Information Technology	Green Supply Chain Management Enterprise	Wuhan Power Battery Regeneration Technology Co., Ltd.
14	Provincial level	Department of Science and Technology	Key Laboratory of Hubei Province	Jingmen GEM Co., Ltd.
15	Provincial level	Department of Science and Technology	Science and Technology Innovation and Entrepreneurship Service Platform	Jingmen GEM Co., Ltd.
16	Provincial level	National Development and Reform Commission	Enterprise Technology Center of Hubei Province	Green ECO (Jingmen) New Energy Materials Co., Ltd.
17	Provincial level	National Development and Reform Commission	Enterprise Technology Center of Hubei Province	Wuhan Power Battery Regeneration Technology Co., Ltd.
18	Provincial level	Department of Industry and Information Technology	Enterprise Technology Center of Fujian Province	Fuan Qingmei Energy Materials Co., Ltd.
19	Provincial level	Department of Industry and Information Technology	Jiangxi Province Management Innovation Demonstration Enterprise	Jiangxi GER Industry Co., Ltd.
20	Provincial level	Municipal Bureau of Supervision	Shenzhen Science and Technology Award Standard Prize	GEM Co., Ltd.

Qualifications and Honors

Project name	Presented by
National Enterprise Technology Center Branch	National Development and Reform Commission
National Specialized and Innovative "Little Giant" Enterprise	Ministry of Industry and Information Technology
National Federation of Industry and Commerce Technological Innovation Private Enterprise	National Federation of Industry and Commerce
National Service-oriented Manufacturing Demonstration Enterprise	Ministry of Industry and Information Technology
National Circular Economy Standardization Pilot Demonstration Project	Standardization Administration of the Nation, National Development and Reform Commission
National Green Low-Carbon Advanced Technology Achievement	Ministry of Science and Technology
Fortune China 500 (Ranked 434th)	Fortune Plus
Forbes China Lithium Battery Industry Chain TOP100 in 2023	Forbes China
Hurun China Energy Private Enterprise TOP100 in 2023	Hurun Research Institute
Best ESG Practice Case for Listed Companies 2023	China Association for Public Companies
Outstanding Practice Case for Board of Directors of Listed Companies 2023	China Association for Public Companies
Top 20 Green Governance for Listed Companies in the Greater Bay Area 2023	China Institute of Company Governance
Top 100 Industry Leaders in Shenzhen 2023	Shenzhen Industry Leaders Enterprise Development Promotion Association, Shenzhen Business News/Read Creation
Green Development Enterprise for Scrapped Vehicle Recycling and Dismantling in Guangdong Province	Department of Commerce of Guangdong Province
Hubei Province Excellent Case in Talent Work	Office of the Talent Work Leadership Group Commission of the CPC Hubei Provincial Committee
Specialized, Fined, Peculiar, and Innovative Small and Medium-sized Enterprises of Hubei Province	Department of Economy and Information Technology of Hubei Province
Hubei Province Science and Innovation "New Species" Potential Unicorn Enterprises	Department of Science and Technology of Hubei Province
Jiangxi Province Management Innovation Demonstration Enterprise 2023	Department of Industry and Information Technology of Jiangxi Province
Hubei Province Intelligent Manufacturing Pilot Demonstration Enterprise 2023	Department of Economy and Information Technology of Hubei Province
Jiangsu Province Industrial Internet Demonstration Project (Benchmark Factory) Enterprise 2023	Department of Industry and Information Technology of Jiangsu Province
First Hubei Charity Award·Heartfelt Donation Enterprise	Hubei Provincial Government
Top 15 Most Growth Potential Companies at the 2023 World Power Battery Conference	2023 World Power Battery Conference Organizing Committee
EY Sustainable Development Annual Best Award·2023 Outstanding Enterprise	EY Greater China

2023 China Used Power Battery Recycling Industry High-Quality Development Summit and Alliance Annual Meeting-Excellent Practice Award for Enterprise Green Low-Carbon Development	2023 China Used Power Battery Recycling "Industry High-Quality Development Summit and Alliance Annual Meeting
2023 China Used Power Battery Recycling Industry High-Quality Development Summit and Alliance Annual Meeting-Industry Standard Innovation Contribution Award	2023 China Used Power Battery Recycling "Industry High-Quality Development Summit and Alliance Annual Meeting
GGII Top 50 China Lithium Battery Materials 2023	GGII, High Industry Research Institute (GGII)
Popular Securities Times-Green Development "Star" Company 2023	Popular Securities
National Business Daily-Qingxin 2023 Green Practice Pioneer Project	National Business Daily
Southern Weekend-Outstanding Responsibility Enterprise of the Year 2022	Southern Weekend
Southern Weekend-Top 1 in China's Science and Innovation List for Comprehensive Utilization of Waste Resources Industry 2023	Southern Weekend
SZSE Listed Companies 2022-2023 Annual Information Disclosure Evaluation Result (Grade A)	Shenzhen Stock Exchange
Comprehensive Utilization of Retired Power Batteries in the New Energy Vehicle Industry Enterprise	Ministry of Industry and Information Technology
GGII 2023 Technology	High-Tech Gold Ball Award
GGII 2023 Zero Carbon Transition Pioneer	High-Tech Gold Ball Award
National Business Daily-Most Growth Potential Listed Company in New Energy, New Materials	National Business Daily
Titanium Media-Annual ESG Innovative Enterprise	Titanium Media
China Recycling Resources Recycling Association Most Influential Enterprise	China Recycling Resources Recycling Association

ESG ratings

CNI ESG rating	AA
Wind ESG rating	A
MSCI ESG rating	BB
Morningstar ESG risk rating	Medium risk
Hang Seng Index ESG rating	A-

Report Index Table

GRI Content Index

Statement of use	GEM Co., Ltd. references the GRI standards, and the GRI content index reports on information used from January 1, 2023, to December 31, 2023.		
Used GRI 1	GRI 1: Basic 2021		
GRI STANDARDS	DISCLOSURE ITEMS	LOCATIONS	BRIEF DESCRIPTION
	2-1 Organizational details	About GEM	
	2-2 Entities included in the organization's sustainability reporting	About the Report	
	2-3 Reporting Period, frequency and contact person	About the Report	
	2-4 Restatements of information	Annual ESG Highlights Key Performance Table	
	2-5 External assurance	Purposeful omission	Not applicable, no assurance statement

GRI 2: General Disclosures 2021	2-6 Activities, value chain and other business relationships	About GEM Enhancing Supply Chain Resilience	
	2-7 Employees	Employee Development and Support Corporate Citizenship and Social Responsibility Key Performance Table	
	2-8 Workers who are not employees	Occupational Health and Safety Management Key Performance Table	
	2-9 Governance structure and composition	Corporate Governance	
	2-10 Nomination and selection of the highest governance body	Corporate Governance	
	2-11 Chair of the highest governance body	Company governance (See 2023 Annual Report of GEM Co., Ltd. for details)	
	2-12 Role of the highest governance body in overseeing the management of impacts	Corporate Governance Sustainable Development Governance	
	2-13 Delegation of responsibility for managing impacts	Corporate Governance	
	2-14 Role of the highest governance body in sustainability reporting	About the Report Sustainable Development Governance	
	2-15 Conflicts of interest	Company Governance (See 2023 Annual Report of GEM Co., Ltd. for details)	
	2-16 Communication of critical concerns	Sustainable Development Governance	
	2-17 Collective knowledge of the highest governance body	Corporate Strategy Outlook	
	2-18 Evaluation of the performance of the highest governance body	Purposeful omission	Not applicable, data and related information integrated in the annual report
	2-19 Remuneration policies	Company governance (See 2023 Annual Report of GEM Co., Ltd. for details)	
	2-20 Process to determine remuneration	Company governance (See 2023 Annual Report of GEM Co., Ltd. for details)	
	2-21 Annual total compensation ratio	Purposeful omission	Confidentiality restrictions, information not disclosed due to confidentiality requirements
	2-22 Statement on sustainable development strategy	Corporate Strategy Chairman's Message Outlook	
	2-23 Policy commitments	Business Ethics Responsible Minerals	
	2-24 Embedding policy commitments	Business Ethics	
	2-25 Processes to remedy negative impacts	Business Ethics Responsible Minerals Employees' Rights and Interests	

	2-26 Mechanisms for seeking advice and raising concerns	Business EthicsCustomer Responsibility	
	2-27 Compliance with laws and regulations	Chapters of the Report	
	2-28 Membership associations	Chapters of the Report	
	2-29 Approach to stakeholder engagement	Sustainable Development Governance	
	2-30 Collective bargaining agreements	Purposeful omission	Confidentiality restrictions, information not disclosed due to confidentiality requirements
GRI 3: Material Topics 2021	3-1 Process to determine material topics	Sustainable Development Governance	
	3-2 List of material topics	Sustainable Development Governance	
	3-3 Management of material topics	Sustainable Development Governance	
GRI 201: Economic Performance 2016	201-1 Direct economic value generated and distributed	Corporate GovernanceKey Performance Table	
	201-2 Financial implications due to climate change and other risks and opportunities	Proactive Stance in Addressing Climate Change	
	201-3 Defined benefit plan obligations and other retirement plans	Employees' Rights and Interests	
	201-4 Financial assistance received from government	Purposeful omission	Not applicable, as data and related information are integrated in the annual report
GRI 202: Market Presence 2016	202-1 Ratios of standard entry level wage by gender compared to local minimum wage	Purposeful omission	Confidentiality restrictions, information not disclosed due to confidentiality requirements
	202-2 Proportion of senior management hired from the local community	Purposeful omission	Omitted, data not collected
GRI 203: Indirect Economic Impacts 2016	203-1 Infrastructure investments and services supported	Chapters of the Report Corporate Citizenship and Social Responsibility	
	203-2 Significant indirect economic impacts	Corporate Citizenship and Social Responsibility	
GRI 204: Procurement Practices 2016	204-1 Proportion of spending on local suppliers	Purposeful omission	Confidentiality restrictions, information not disclosed due to confidentiality requirements
GRI 205: Anti-corruption 2016	205-1 Operations assessed for risks related to corruption	Business Ethics	
	205-2 Communication and training about anti-corruption policies and procedures	Business Ethics	
	205-3 Confirmed incidents of corruption and actions taken	Annual Topics Business Ethics	
GRI 206: Anti-competitive Behavior 2016	206-1 Legal actions for anti-competitive behavior, anti-trust, and anti-monopoly practices	Business Ethics	
GRI 207: Tax 201	207-1 Approach to tax	Purposeful omission	
	207-2 Tax governance, control, and risk management	Purposeful omission	Not applicable, tax not considered a material topic for the Company
	207-3 Stakeholder engagement and management of concerns related to tax	Purposeful omission	
	207-4 Country-by-country reporting	Purposeful omission	

GRI301: Materials 2016	301-1 Materials used by weight or volume	Purposeful omission	Omitted, data not collected
	301-2 Recycled input materials used	Resource Management	
	301-3 Reclaimed products and their packaging materials	Resource Management	
GRI302: Energy 2016	302-1 Energy consumption within the organization	Energy-saving Management Key Performance Table	
	302-2 Energy consumption outside of the organization	Purposeful omission	Omitted, data not collected
	302-3 Energy intensity	Energy-saving Management Key Performance Table	
	302-4 Reduction of energy consumption	Energy-saving Management Key Performance Table	
	302-5 Reductions in energy requirements of products and services	Energy-saving Management Key Performance Table	
GRI303: Water and Effluents 2018	303-1 Interactions with water as a shared resource	Pollution Prevention and Ecosystem Protection Resource Management	
	303-2 Management of water discharge related impacts	Pollution Prevention and Ecosystem Protection Resource Management	
	303-3 Water withdrawal	Resource Management Key Performance Table	
	303-4 Water discharge	Resource Management Key Performance Table	
	303-5 Water consumption	Resource Management Key Performance Table	
GRI304: Biodiversity 2016	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Purposeful omission	Not applicable, the Company doesn't own, lease, or manage operating sites located in or adjacent to protected areas and biodiverse areas outside protected areas
	304-2 Significant impacts of activities, products and services on biodiversity	Pollution Prevention and Ecosystem Protection	
	304-3 Habitats protected or restored	Pollution Prevention and Ecosystem Protection	
	304-4 International Union for Conservation of Nature (IUCN) Red List species and national conservation list species with habitats in areas affected by operations	Purposeful omission	Not applicable, The Company's operation doesn't affect the species listed in the IUCN Red List and state protection list
	305-1 Direct (Scope 1) GHG emissions	Proactive Stance in Addressing Climate Change Key Performance Table	
	305-2 Energy indirect (Scope 2) GHG emissions	Proactive Stance in Addressing Climate Change Key Performance Table	

GRI 305: Emissions 2016	305-3 Other indirect (Scope 3) GHG emissions	Purposeful omission	Omitted, incomplete data due to the complexity of the Company's supply chain
	305-4 GHG emissions intensity	Proactive Stance in Addressing Climate Change Key Performance Table	
	305-5 Reduction of GHG emission	Proactive Stance in Addressing Climate Change Key Performance Table	
	305-6 Emissions of ozone-depleting substances (ODS)	Purposeful omission	Not applicable, the Company does not significantly emit refrigerants or other ODS
	305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	Key Performance Table	
GRI 306: Waste 2020	306-1 Waste generation and significant waste-related impacts	Pollution Prevention and Ecosystem Protection	
	306-2 Management of significant waste-related impacts	Pollution Prevention and Ecosystem Protection	
	306-3 Waste generated	Pollution Prevention and Ecosystem Protection	
	306-4 Waste diverted from disposal	Key Performance Table	
	306-5 Waste directed to disposal	Key Performance Table	
GRI308: Supplier Environment Assessment 2016	308-1 New suppliers that were screened using environmental criteria	Responsible Minerals	
	308-2 Negative environmental impacts in the supply chain and actions taken	Enhancing Supply Chain Resilience, Responsible Minerals	
GRI401: Employment 2016	401-1 New employee hires and employee turnover	Purposeful omission	Omitted, data not collected
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	Employees' Rights and Interests Employee Development and Training	
	401-3 Parental leave	Purposeful omission	Omitted, data not collected
GRI402: Labor/Management Relations 2016	402-1 Minimum notice periods regarding operational changes	Purposeful omission	Omitted, data not collected
GRI403: Occupational health and safety 2018	403-1 Occupational health and safety management system	Occupational Health and Safety Management	
	403-2 Hazard identification, risk assessment, and incident investigation	Occupational Health and Safety Management	
	403-3 Occupational health services	Occupational Health and Safety Management	
	403-4 Occupational health and safety Worker participation, consultation, and communication	Occupational Health and Safety Management	
	403-5 Worker training on occupational health and safety	Occupational Health and Safety Management Key Performance Table	
	403-6 Promotion of worker health	Occupational Health and Safety Management	
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Occupational Health and Safety Management	
	403-8 Workers covered by an occupational health and safety management system	Occupational Health and Safety Management	
	403-9 Work-related injuries	Occupational Health and Safety Management	
	403-10 Work-related ill health	Occupational Health and Safety Management	
GRI404: Training and Education 2016	404-1 Average hours of training per year per employee	Employee Development and Training Key Performance Table	
	404-2 Programs for upgrading employee skills and transition assistance programs	Employee Development and Training	
	404-3 Percentage of employees receiving regular performance and career development reviews	Purposeful omission	Omitted, data not collected

GRI405: Diversity and Equal Opportunity	405-1 Diversity of governance bodies and employees	Diversity and Inclusion	
	405-2 Ratio of basic salary and remuneration of women to men	Purposeful omission	Confidentiality restrictions, information not disclosed due to confidentiality requirements
GRI406: Non-discrimination 2016	406-1 Incidents of discrimination and corrective actions taken	Diversity and Inclusion	
GRI407: Freedom of Association and Collective Bargaining	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	Employees' Rights and Interests	
GRI408: Child Labor 2016	GRI 408: Operations and suppliers at significant risk for incidents of child labor 2016408-1	Responsible Minerals	
GRI409: Forced or Compulsory Labor 2016	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	Responsible Minerals Employees' Rights and Interests	
GRI410: Security Practices 2016	410-1 Security personnel trained in human rights policies or procedures	Purposeful omission	Omitted, data not collected
GRI411: Rights of Indigenous Peoples 2016	411-1 Incidents of violations involving rights of indigenous peoples	Purposeful omission	Not applicable, no incidents of violations involving rights of indigenous peoples occurred
GRI413: Local Communities 2016	413-1: Operations with local community engagement, impact assessments, and development programs	Pollution Prevention and Ecosystem Protection	
	413-2 Operations with significant actual and potential negative impacts on local communities	Purposeful omission	Not applicable, the Company has no significant negative impacts on local communities
GRI414: Supplier Social Assessment 2016	414-1 New suppliers that were screened using social criteria	Responsible Minerals	
	414-2 Negative social impacts in the supply chain and actions taken	Responsible Minerals	
GRI415: Public Policy 2016	415-1 Political contributions	Annual Topics	
GRI416: Customer Health and Safety 2016	416-1 Assessment of the health and safety impacts of product and service categories	Quality Management	
	416-2 Incidents of non-compliance concerning the health and safety impacts of products and services	Purposeful omission	Not applicable, no incidents of non-compliance concerning the health and safety impacts occurred
GRI417: Marketing and Labeling 2016	417-1 Requirements for product and service information and labeling	Quality Management	
	417-2 Incidents of non-compliance concerning product and service information and labeling	Purposeful omission	Not applicable, no incidents of non-compliance concerning product and service information and labeling occurred
	417-3 Incidents of non-compliance concerning marketing communications	Purposeful omission	Not applicable, no incidents of non-compliance concerning marketing communications occurred
GRI418: Customer Privacy 2016	418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	Purposeful omission	Not applicable, no substantiated complaints concerning breaches of customer privacy and losses of customer data occurred

Report Index for Social Responsibility Guidelines for Companies Listed on the Shenzhen Stock Exchange

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## Reader's Feedback Form

Dear readers,

Hello!

Thank you for reading the 2023 Environmental, Social and Corporate Governance (ESG) Report of GEM Co., Ltd.. If you have any ideas and suggestions on the Report, please complete the following feedback form and send it by post, fax or e-mail. We would deeply appreciate your valuable advice!

Name: \_\_\_\_\_

Tel.: \_\_\_\_\_

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1. Which chapter do you think provide you with important information?

- Chapter One  
  Chapter Two  
  Chapter Three  
  Chapter Four  
 Chapter Five  
  Chapter Six  
  Chapter Seven  
  Chapter Eight  
  Chapter Nine

2. How do you evaluate the Report?

- |                                      |                                    |                               |                                 |                               |                                 |
|--------------------------------------|------------------------------------|-------------------------------|---------------------------------|-------------------------------|---------------------------------|
| Legibility                           | <input type="checkbox"/> Excellent | <input type="checkbox"/> Good | <input type="checkbox"/> Normal | <input type="checkbox"/> Poor | <input type="checkbox"/> Poorer |
| Completeness                         | <input type="checkbox"/> Excellent | <input type="checkbox"/> Good | <input type="checkbox"/> Normal | <input type="checkbox"/> Poor | <input type="checkbox"/> Poorer |
| Neutrality                           | <input type="checkbox"/> Excellent | <input type="checkbox"/> Good | <input type="checkbox"/> Normal | <input type="checkbox"/> Poor | <input type="checkbox"/> Poorer |
| Layout design                        | <input type="checkbox"/> Excellent | <input type="checkbox"/> Good | <input type="checkbox"/> Normal | <input type="checkbox"/> Poor | <input type="checkbox"/> Poorer |
| General impression                   | <input type="checkbox"/> Excellent | <input type="checkbox"/> Good | <input type="checkbox"/> Normal | <input type="checkbox"/> Poor | <input type="checkbox"/> Poorer |
| Quality of the disclosed information | <input type="checkbox"/> Very high | <input type="checkbox"/> High | <input type="checkbox"/> Normal | <input type="checkbox"/> Low  | <input type="checkbox"/> Lower  |

What valuable opinions and suggestions on the Report do you have?

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