



北京控股有限公司  
BEIJING ENTERPRISES HOLDINGS LIMITED

# 2022

## SUSTAINABILITY REPORT

BEIJING ENTERPRISES  
HOLDINGS LIMITED

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BEIJING ENTERPRISES  
HOLDINGS LIMITED

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## About This Report

This is the ninth non-financial report of Beijing Enterprises Holdings Limited (BEHL). The Report aims at disclosing BEHL's sustainability performance for the whole year of 2022 in a transparent and open manner, responding to the concerns and expectations of the stakeholders regarding BEHL's sustainability management. We are highly aware of and responsive to the economic, social and environmental impacts of our business. Factoring in the United Nations Sustainability Development Goals (SDGs), the Report addressed BEHL's tenets, actions, and achievements of sustainability on four dimensions, namely operation, environmental protection, employee, and community.

All data and information disclosed in the Report are from official documents and internal statistical systems of the Company, covering BEHL headquarters and its subsidiaries in the four business segments of gas, water, environment and beer, including Beijing Gas Group Co., Ltd. (referred to as "Beijing Gas"), China Gas Holdings Ltd. (referred to as "China Gas"), Beijing Enterprises Water Group Limited (referred to as "BE Water"), Beijing Enterprises Environment Group Limited (referred to as "BE Environment") and Beijing Enterprises Holdings Environment Technology Co., Ltd. (referred to as "BE Environment Technology") (the two are integrated as the solid waste treatment business management platform, referred to as the "Solid Waste Treatment Platform" for short), and EEW Energy from Waste GmbH (referred to as "EEW GmbH"), and Beijing Yanjing Brewery Co., Ltd. (referred to as "Yanjing Brewery"). Although China Gas and BE Water are not included in consolidated financial statements, their highlights were still disclosed in the Report considering the importance of their business.

The Report is aligned with the *Appendix 27 of Environmental, Social and Governance Reporting Guide to the Main Board Listing Rules* (HKEX ESG Guidance) of the Stock Exchange of Hong Kong Limited (HKEX), with reference to the *Social Responsibility Guide* (ISO 26000) of International Organization for Standardization (ISO), the *GRI Sustainability Reporting Standards* (GRI Standards) issued by the Global Reporting Initiative (GRI) and *United Nations Guiding Principles on Business and Human Rights* (UNGP).

The reporting period is from January 1, 2022 to December 31, 2022, though it may be longer or shorter than that for some contents out of continuity and comparability considerations. Where not otherwise stated, the aggregate figures shown in the Report are disclosed on a financial consolidation basis and are shown in RMB (Yuan) or HK\$ (Hong Kong dollars), as the case may be. If the data is inconsistent with the financial statements, the data in financial statements shall prevail. For the convenience of expression and reading, in the Report Beijing Enterprises Holdings Limited is hereinafter referred to "the Company", and the Company and its subsidiaries are hereinafter referred to as "BEHL" or "we", and Beijing Enterprises Group Company Limited is referred to as the "BG".

The Board of Directors and all Board Directors of the Company pledge that the contents of this Report do not contain any false statements, misleading statements or material omissions and accept individual and joint responsibility for the truthfulness, accuracy and completeness of its contents.

The Report is published in Chinese and English and is available in print and electronic formats. The Report can be viewed or downloaded from the following websites:

HKEX website:

<http://www.hkexnews.hk>



BEHL website:

<http://www.behl.com.hk>



## Board of Directors' ESG Statement

Committed to fully integrating the concept of sustainable development into its production and operation, BEHL has worked relentlessly to establish and improve its ESG working mechanism, striving to develop in harmony with the society and the environment, steadily create social, environment and corporate value over the long term, to achieve its long-term sustainable development.

BEHL has set up a sustainable development governance structure of three layers, namely, the governance layer, management layer and execution layer, putting in place the institutional safeguards for the smooth implementation of sustainability work in the Company. In this structure, the Company's Board of Directors, as the highest decision-making body for ESG matters of BEHL, is responsible for approving the Company's sustainable development strategies, policies, objectives, risks and other related matters to ensure alignment with its strategies. A Sustainable Development Committee has been established at the Board of Directors level to serve as the management and daily decision-making body for BEHL's sustainability efforts. At the management layer, the Sustainable Development Working Group was set up, and it serves as the daily liaison and coordination body for BEHL's sustainability efforts and is responsible for alignment with the relevant work requirements of BG for sustainable development management. The execution layer is composed of the sustainable development focal points from various departments and offices in the headquarters and the sustainable development working groups of subsidiaries to carry out and implement the work related to sustainable development.

In 2022, BEHL, based on its development status, formulated the *Anti-bribery and Anti-corruption System*, *Whistleblowing Management System*, the *Whistleblower Protection System*, *Management Policy of Health, Safety and Environment*, and the *Policy of Climate Change Response*. It has continued to promote the implementation of improvement projects laid out in the sustainability work planning and moved forward with the setting of sustainable development goals. BEHL seeks to keep improving its capabilities to manage climate risks and opportunities and manage and control the impact of climate change on itself. In response to the "carbon peaking and carbon neutrality" initiative, it vigorously explores pathways of low-carbon development.

The Report disclosed in detail the progress and achievements of BEHL's sustainable development work in 2022, and reviewed and approved by the Board of Directors on April 24, 2023. The Board of Directors and all Board Directors of BEHL guarantee that there are no false records, misleading statements or material omissions in this Report and assume individual and joint responsibility for the truthfulness, accuracy and completeness of its contents.

“We will strive to achieve the goal of optimizing our sustainable development management system and deepening our sustainable development practices, and continuously contribute to social development and building a better world!”

—— Chairman Dai Xiaofeng

## Chairman's Message

Thank you for taking the time to read this Report. On behalf of the Board of Directors, I would like to express our gratitude for your care and support to BEHL!

The year 2022 was marked by intensified geopolitical crisis, sluggish economic recovery, concurrent changes and turbulence, as well as unity and divisions. In this context, sustainable development is the "golden key" to addressing the current global challenges, and businesses, as the carrier of economic power, still have a long way to go before achieving sustainable development.

The year marked a crucial year in the implementation of the 14th Five-Year Plan, and the start of a new journey towards realizing the second centennial goal of building a modern socialist nation in all aspects. BEHL is committed to both integrating the concept of sustainable development into its regular operations and management, and practicing its corporate vision of "a responsible, strong, and reliable integrated public utility service provider". We have maintained firm strategic resolve, proactively guided our subsidiaries to strengthen lean operations and management, and focused on the harmonious development of our business, the economy, society and the environment, thus to work with our stakeholders to build an inclusive, sustainable, and resilient future.

To manage sustainable development-related matters more effectively and to strengthen the responsibilities of the Board of Directors, we have established a three-layered "governance-management-execution" sustainable development governance structure, and continuously improve the sustainable development management system focusing on sustainable development quantitative performance management, with the Sustainable Development Committee and the Working Group as the leading department, covering all important business units. We have also gradually established a sustainable development management policy system, adopted a top-down approach to promote its implementation, and made certain progresses in integrating responsibilities into functional management.

On the environmental front, climate change and its impacts have been globally recognized as one of the most pressing issues. BEHL places a high premium on the environmental impacts caused by corporate operations, engages in ecological and environmental governance, and takes continuous actions to address climate change. In 2022, we published *Management Policy of Health, Safety and Environment* and the *Policy of Climate Change Response*, set environmental targets, and we have gradually improved our capabilities to address climate change in accordance with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).

On the social front, we are committed to creating shared value that brings win-win results with various stakeholders. We adhere to a technology and innovation-driven strategy and have invested RMB 1.9 billion in R&D to further enhance our technological innovation capabilities. We provide high-quality products and reliable services for our customers, and manage our business and corporate affairs with integrity and honesty. With long-term dedication to responsible supply chain development, we aim to achieve sustainable development together with our suppliers. We focus on enhancing employees' sense of fulfillment, happiness, and security, effectively safeguarding their legitimate rights and interests, offering continuous care, and creating a comfortable workplace environment for them. We work together with all walks of life to organize public welfare activities and fulfill our obligations as a corporate citizen through concrete actions, contributing our strengths to various fields such as community care and youth development.

We will build upon our past achievements and experience to promote sustainable and healthy economic and social development, firmly upholding "investment creates a better life". We will strive to achieve the goal of optimizing our sustainable development management system and deepening our sustainable development practices, and continuously contribute to social development and building a better world!

# About US

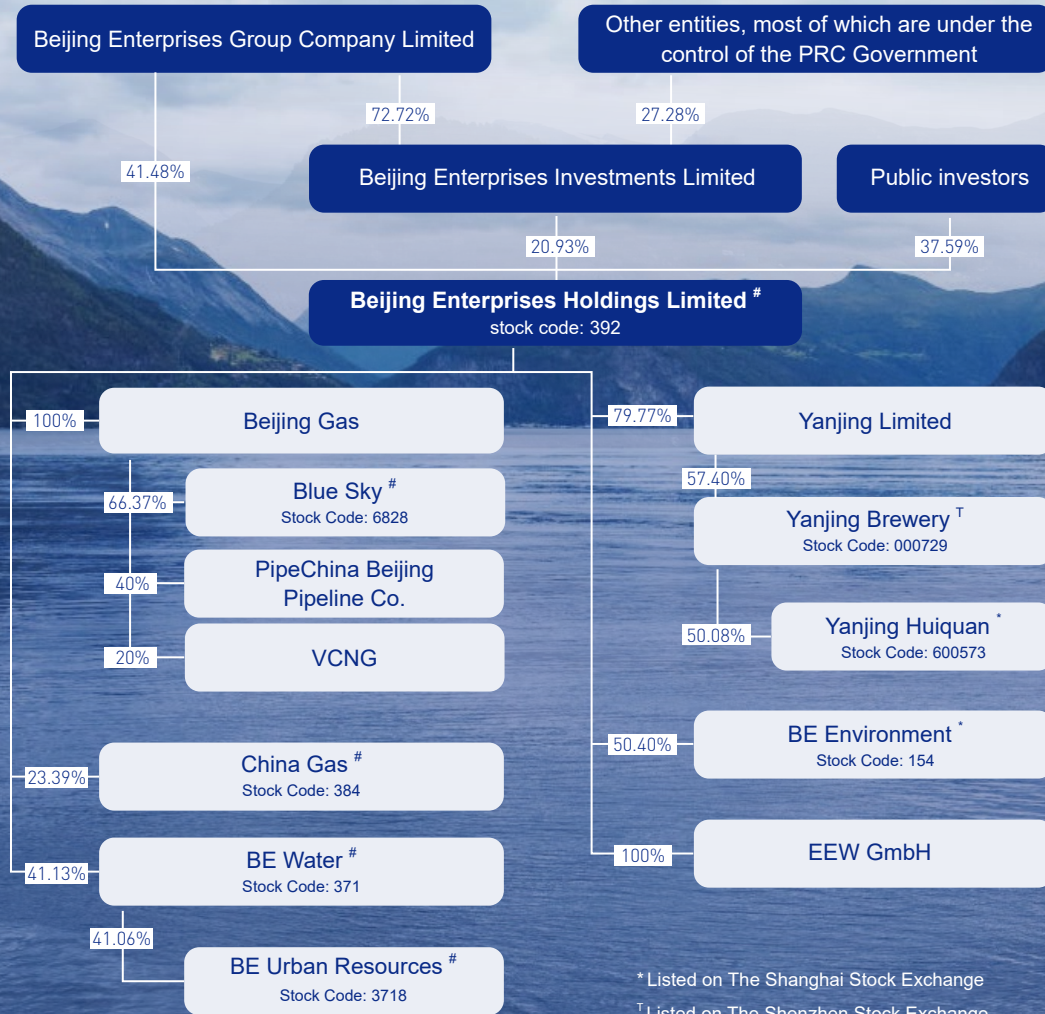
## Company Profile

Formed in 1997, Beijing Enterprises Holdings Limited is traded on the Main Board of the Hong Kong Stock Exchange (0392.HK) and is a constituent of the Hang Seng Composite Index and the Hang Seng China Enterprises Index.

Over the years, BEHL has given full play to the advantages of both the Beijing and Hong Kong capital markets and implemented a focused development strategy that is at once proactive and prudent and has become a representative red-chip enterprise in the Hong Kong capital market with sustained and steady earnings growth.

## Corporate Structure

As of December 31, 2022



\* Listed on The Shanghai Stock Exchange

T Listed on The Shenzhen Stock Exchange

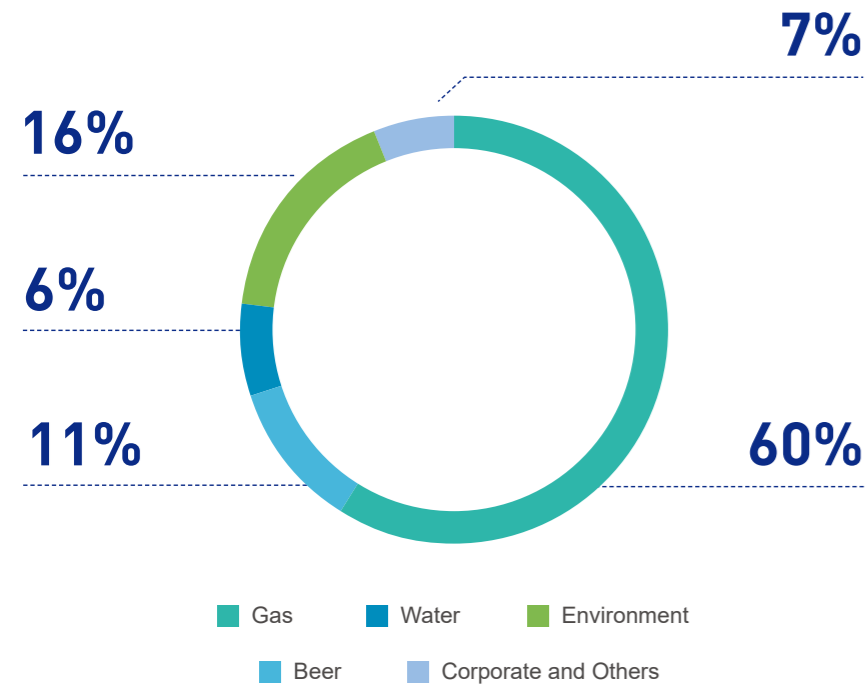
# Listed on The Main Board of The Hong Kong Stock Exchange

## Business Scope

As an integrated utilities company, BEHL's main business covers utilities segments such as urban gas, municipal water supply, and solid waste treatment, in addition to value investing operations with a focus on consumer goods, owning Yanjing Brewery, one of the largest beer conglomerates in China.

BEHL also owns diversified high-quality overseas assets. In the water segment, it owns multiple technologically leading water projects in Malaysia and Portugal; in the environment segment, it owns EEW GmbH, a leading solid waste operator in Europe with presence in Germany, Luxembourg, and the Netherlands. BEHL has become a utility investing and financing platform with diversified channels for domestic and overseas markets.

Total assets of BEHL's main operations in 2022



### Main companies:

Beijing Gas and China Gas

### Main operation:

Upstream resources and transportation, midstream gas market and downstream gas market applications

### Main progresses of 2022

#### Beijing Gas

- Fulfilled the tasks of ensuring a safe and stable gas supply during the Beijing Winter Olympics, Winter Paralympics, China International Fair for Trade in services and other major events
- Fully deepened safe management and operation, carried out the investigation and rectification of hidden dangers of pipe network facilities, updating and transformation, and indoor safety investigation and rectification

#### China Gas

- Signed two long-term LNG agreements
- Built a green urban operator model with a "virtual power plant" as the core
- Created standardized smart gas products with its own IPRs for governmental users

Gas

### Main companies:

BE Water

### Main operation:

Water treatment services and water environment treatment

### Main progresses of 2022

- Made technological breakthroughs in municipal water services, water ecology and many other fields; released two technical products, i.e., BEAOA and BE speedgrain
- Promoted the development of standardized water plant system and upgraded the functions of SED system
- Established the "starting point control - process supervision - result evaluation" assessment and acceptance mechanism with the focus on the investment-return ratio during the innovation process

Water

### Main companies:

The Solid Waste Treatment Platform and EEW GmbH

### Main operation:

Household waste incineration and power generation; kitchen waste, sludge and manure treatment; hazardous waste and medical waste treatment; ecological restoration

### Main progresses of 2022

- BE Environment won the bidding for the first asset-light operation project—Xiangyang Wu'an Environmental Energy Power Plant Project
- BE Environment completed the first carbon emission allowance transaction on China's national emissions trading platform

Environment

### Main companies:

Yanjing Brewery

### Main operation:





Manufacturing and sale of beer, fruit juice cocktails, mineral water, beer ingredients, feed, yeast, plastic boxes and other products

### Main progresses of 2022

- Implemented the U8 strategy with greater intensity
- Strengthened omnichannel marketing that merged online and offline efforts to raise the brand awareness in an all-round, wide-coverage and three-dimensional manner, and unleash the power of brand marketing
- Launched mid-to-high-end products such as Fresh Beer 2022, U8plus, S12 Pilsner and Lion craft beer series
- Opened experience-focused craft beer flagship stores; "LIONK gastropub" Beijing Sino-German Industrial Park Store and Shougang Park Store were put into operation

Beer

### Business presence

-  Gas
-  Water
-  Environment
-  Beer





# Sustainability Management

BEHL is committed to sustainable development. It fully embeds the standards of ESG into corporate management. Based on its business needs, it has built a scientific and professional sustainable development governance structure and management system from top to bottom. BEHL always seeks to engage the Board of Directors more, improves the sustainable development management system, and formulates relevant strategies, bent on fully integrating the sustainability tenet into the Company's development strategies and business decisions.

## Management System

To improve the management of sustainable development efforts, BEHL has put in place a sound system of sustainable development management, which serves as the foundation for propelling such efforts over the long term. BEHL has, in accordance with the HKEX ESG Guidance, the consultation documents on the related provisions of the *Listing Rules* and the relevant requirements of other international indexes and ratings, formulated the *Management Measures of the Sustainable Development System of Beijing Enterprises Holdings Limited*. A sustainable development management system has thus been adopted and implemented with the emphasis placed on quantitative performance management for sustainable development. Led by the Sustainable Development Committee and the Working Group, this system covers all the important business units. It will provide continuous guidance to all the functional departments and subsidiaries of the Company to strengthen corporate governance and business sustainability in a more systematic manner.

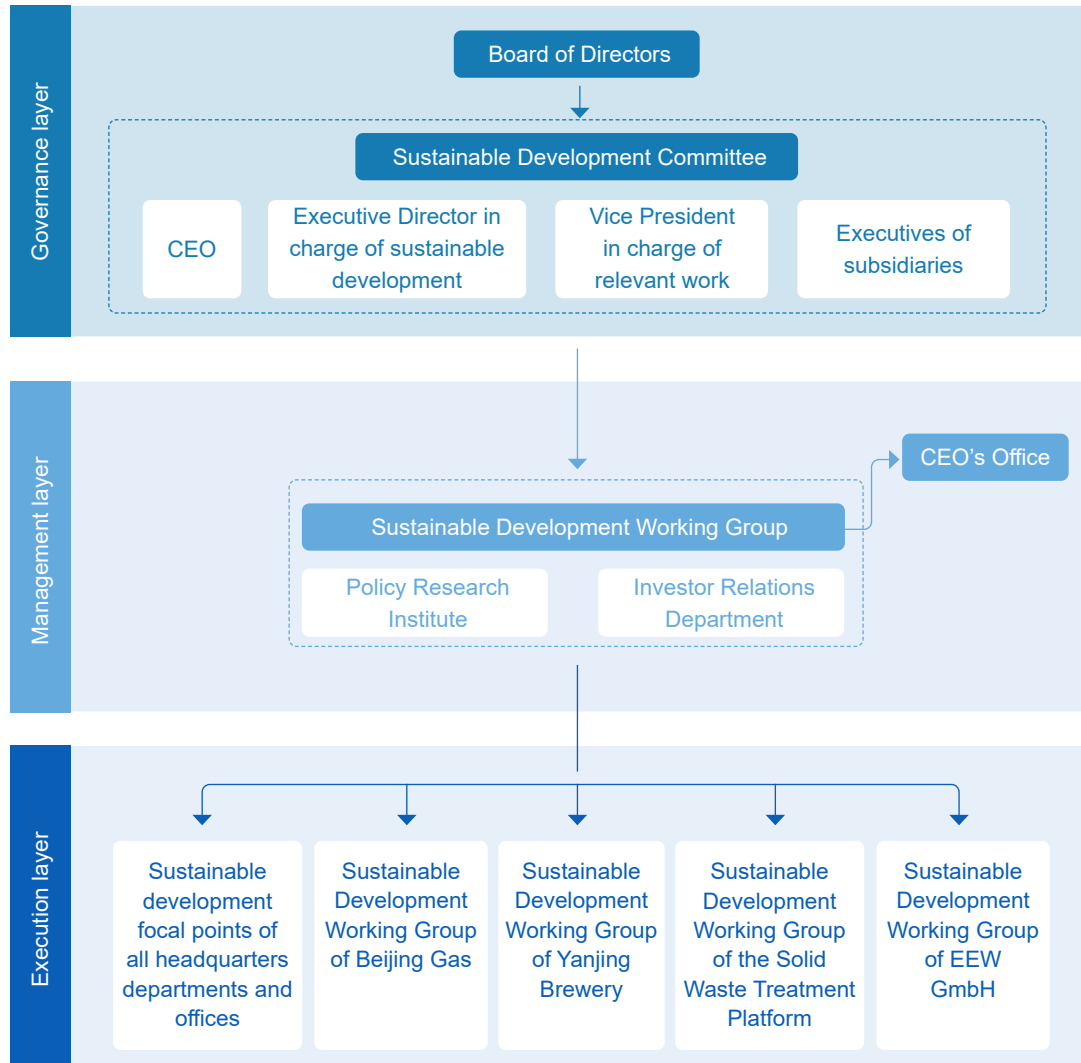
The Company has established a well-structured sustainability development management and governance architecture featuring hierarchical management, clear authority and responsibilities and efficient running. The Board of Directors is the highest decision-making body in the sustainability governance structure, responsible for approving the Company's sustainability-related policies, strategies, objectives, work plans, risk assessment results and other related matters and keeping the Company's sustainability work overall aligned with the Company's business strategies. At the governance layer, the Company has established a Sustainable Development Committee tasked with the review and day-to-day decision-making of sustainability-related work. The Sustainable Development Committee is headed by the CEO of the Company and comprises the executive director in charge

of sustainable development, the Vice President in charge of the relevant work and the heads of each subsidiary. Under the Sustainable Development Committee, a Sustainable Development Working Group was set up, comprising the Investor Relations Department and the Policy Research Institute. It serves as the daily liaison and coordination body for sustainable development work in BEHL, responsible for formulating strategies and policies related to sustainable development, promoting and executing work plans, and coordinating and supervising the implementation of related tasks. The CEO's Office is responsible for reviewing the materials related to sustainable development submitted by the Sustainable Development Working Group. The execution layer consists of the sustainable development focal points of all headquarters departments and offices and sustainable development working groups of subsidiaries and is responsible for the implementation of sustainability-related work.

In 2022, the Company earnestly followed the *Management Measures of the Sustainable Development System of Beijing Enterprises Holdings Limited*. It spared no effort in ensuring the proper implementation of sustainability-related work mechanisms and tasks concerning work meetings, information management, rating, project budgeting, supervision and assessment. To promote and set incentives for sustainable development governance, sustainable development work continues to be incorporated into the Company's performance appraisal. On the basis of comprehensively tracking the Company's sustainable development performance, through targeted improvement and scientific evaluation, BEHL promotes the overall improvement of sustainable development performance.



## BEHL's sustainable development system



## Management rules for each layer of BEHL's sustainable development system

### Governance layer

- The Board of Directors should discuss matters related to the Company's sustainable development at least twice a year
- The Sustainable Development Committee should conduct seminars on sustainable development in meetings and other forms at least four times a year

### Management layer

- The Sustainable Development Working Group should confirm the sustainable development rating work arrangement for the following year at the end of the first quarter of each year and determine the work plan for the preparation of the annual sustainable development report in November each year
- The Sustainable Development Working Group should submit to the CEO's Office a summary of its work related to sustainable development, including a summary of its annual work, its work plan for the following year, and the progresses towards its goals

### Execution layer

- All departments and offices of the BEHL headquarters and subsidiaries should hold work meetings on sustainable development in accordance with the actual situation, and regularly submit and report the progress of efforts to meet sustainable development-related performance indicators as required

## Stakeholder Engagement

BEHL attaches importance to stakeholders' concerns and communicates with stakeholders via different channels. Based on the nature of our businesses, industry dynamics and corporate development status, we have identified and responded to stakeholders such as the government, shareholders and investors, customers and business partners, employees, the communities, non-governmental organizations, and media outlets.

To better learn about and respond to stakeholders' expectations and demands, we set up a regular communication mechanism with stakeholders. Any stakeholder can communicate with us via the email account mailbox@behl.com.hk for matters related to our business and development. We will aggregate the feedback from various channels and report to the CEO's Office in ways appropriate under the specific circumstances, and the Board of Directors will make the appropriate management decisions correspondingly.

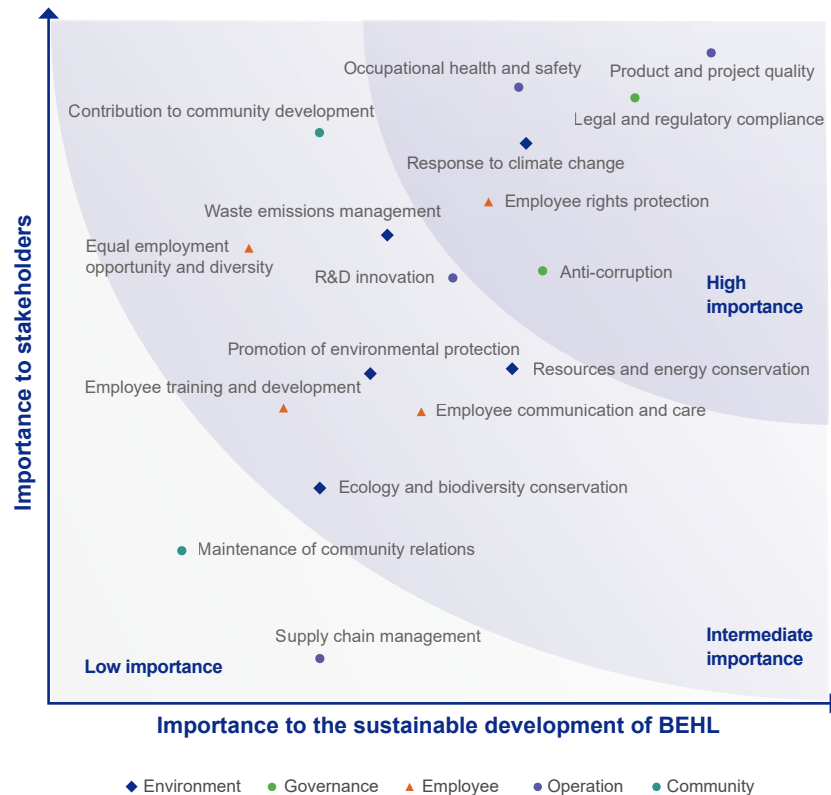
The Company has been actively engaged in stakeholder communication by holding results announcement meetings and annual general meetings, participating in investment seminars and receiving visiting mainland and overseas investors. Within the Reporting Period, the Company hosted several press conferences and roadshows online with attendances reaching approximately 350 and four communication sessions on sustainable development, which effectively conveyed the development strategies and long-term value creation of BEHL to the capital markets.

Stakeholders	Topics	Response Channels	Effectiveness of Communication
 Government and regulatory authorities	<ul style="list-style-type: none"> <li>• Lawful business operations</li> <li>• Payment of taxes in accordance with the law</li> <li>• Creation of employment opportunities</li> <li>• Promotion of sustainable and healthy economic development</li> </ul>	<ul style="list-style-type: none"> <li>• Routine reporting and communication</li> <li>• Seminars and on-site meetings</li> <li>• Forums and exchange programs</li> </ul>	<ul style="list-style-type: none"> <li>• Strategic cooperation with local governments</li> <li>• Fostering a good external environment for business development</li> </ul>
 Shareholders and investors	<ul style="list-style-type: none"> <li>• Satisfactory return on investment</li> <li>• Good market value</li> <li>• Transparent operations</li> <li>• Improvement of profitability and core competitiveness</li> </ul>	<ul style="list-style-type: none"> <li>• Annual reports and announcements</li> <li>• Roadshows and investor meetings</li> <li>• Teleconferences with analysts</li> <li>• Annual general meeting</li> <li>• Company website</li> </ul>	<ul style="list-style-type: none"> <li>• Building good investor relations</li> <li>• Continuous improvement on credibility with investors</li> <li>• Gaining supports from investors and shareholders on major decisions</li> </ul>
 Customers	<ul style="list-style-type: none"> <li>• Consistent and stable supply of products</li> <li>• High-quality and safe products</li> <li>• Considerate and convenient service</li> <li>• Smooth communication channels</li> </ul>	<ul style="list-style-type: none"> <li>• Customer forums</li> <li>• Service hotlines</li> <li>• Community service centres</li> <li>• Customer satisfaction surveys</li> </ul>	<ul style="list-style-type: none"> <li>• Continuous improvement on business operations based on customers' feedback</li> <li>• Efficient and timely solutions for customers' complaints</li> <li>• Continuous improvement on customer services</li> </ul>
 Business partners	<ul style="list-style-type: none"> <li>• Fair procurement</li> <li>• Integrity and reciprocity</li> <li>• Long-term and stable cooperation</li> </ul>	<ul style="list-style-type: none"> <li>• Supplier conference</li> <li>• Strategic cooperation</li> </ul>	<ul style="list-style-type: none"> <li>• Formulating supplier management requirements to improve supply chain efficiency</li> <li>• Facilitating co-development of upstream and downstream business partners</li> </ul>
 Employees	<ul style="list-style-type: none"> <li>• Safeguard of comprehensive rights and interests</li> <li>• Good platform for career development</li> <li>• Work-life balance</li> <li>• Occupational health</li> </ul>	<ul style="list-style-type: none"> <li>• Staff and workers' congress</li> <li>• Complaint box</li> <li>• Channels of democratic communication</li> </ul>	<ul style="list-style-type: none"> <li>• Vertical and horizontal communication among staff and hierarchies</li> <li>• Fostering a harmonious workplace</li> <li>• Building a healthy and safe working environment</li> </ul>
 Community and non-governmental organizations	<ul style="list-style-type: none"> <li>• Community development</li> <li>• Community harmony</li> <li>• Community environment</li> <li>• Open and transparent information</li> </ul>	<ul style="list-style-type: none"> <li>• Public science communications</li> <li>• Community outreach</li> <li>• Participating in charity and environmental activities</li> </ul>	<ul style="list-style-type: none"> <li>• Appointing social inspectors to check and monitor the quality of services</li> <li>• Building good relations with the local community</li> <li>• Fostering a good external environment for business development</li> </ul>
 Media	<ul style="list-style-type: none"> <li>• Financial performance</li> <li>• Corporate governance</li> <li>• Information disclosure</li> </ul>	<ul style="list-style-type: none"> <li>• Annual reports and announcements</li> <li>• Annual and interim results presentation</li> <li>• Press releases and publications</li> <li>• Media interviews</li> <li>• Media inquiries</li> </ul>	<ul style="list-style-type: none"> <li>• Building good relations with the media</li> <li>• Maintaining the corporate image and gaining public recognition</li> </ul>
 Environment	<ul style="list-style-type: none"> <li>• Supply of clean energy</li> <li>• Waste treatment</li> <li>• Green operation</li> </ul>	<ul style="list-style-type: none"> <li>• Annual reports and announcements</li> </ul>	<ul style="list-style-type: none"> <li>• Implementing the "Clean Air Action Plan"</li> <li>• Participation in environmental projects</li> </ul>

## Compliance with the Principles in the ESG Guidance

**Materiality:** BEHL believes that understanding the demands and major concerns of various stakeholders is of great importance to continuously improve its sustainability management performance. To that end, we, in accordance with the HKEX ESG Guidance and with reference to internationally recognized sustainability standards and sustainability issues of general concern to the industry, went through the materiality analysis workflow and identified sustainability issues relevant to the Company, then ranked them based on their level of priority, and ultimately determined the material issues that will serve as the objectives and foundation for our sustainability management.

In 2022, the Company collected opinions and suggestions from various stakeholders on the sustainable development management of BEHL during its interactions and communication with them in the process of its daily production and operation. On the basis of that, the Company has determined the sustainable development issues of 2022. This report disclosed information on key substantive issues on such dimensions as mechanism improvement, management improvement, actions, and performance.



Ranking	Issues	Ranking	Issues
1	Product and project quality	10	Equal employment opportunity and diversity
2	Legal and regulatory compliance	11	Promotion of environmental protection
3	Occupational health and safety	12	Resources and energy conservation
4	Response to climate change	13	Employee training and development
5	Employee rights protection	14	Employee communication and care
6	Anti-corruption	15	Ecology and biodiversity conservation
7	R&D innovation	16	Supply chain management
8	Waste emissions management	17	Maintenance of community relations
9	Contribution to community development		

**Quantitative:** BEHL has established ESG indicator collection tools that cover the headquarters and all subsidiaries and regularly collects key quantitative indicators of all major environmental aspects and some social aspects listed in the ESG Guidance, which are aggregated during the Reporting Period and disclosed in this Report. For detailed information on the quantitative ESG data, please refer to each chapter of this report.

**Balance:** BEHL, upon review and confirmation by the Board of Directors of the Company, pledges that the contents of the Report are objective and open. The contents disclosed can be accessed via our official information disclosure channels or public social media.

**Consistency:** Compared with ESG reports of previous years, this Report does not make major adjustments in the scope of disclosure, and it adopts consistent statistical methods for the disclosure. For ESG data comparison over the years, please refer to each chapter of this report.

## Key Progresses of 2022

BEHL has been vigorously making efforts in line with the United Nations Sustainable Development Goals (SDGs). It has identified 13 SDGs with the highest relevance in the context of its own corporate situation and embeds sustainability in its daily operations. BEHL is committed to supporting and implementing SDGs in its corporate development strategies and business operations.

### Governance

**Legal and regulatory compliance** ★★ ★

**Potential impacts**

- Positive: establishing effective and responsible organizations

**Means to enhance positive impact / reduce negative impact**

- Establishing an effective governance and internal control system

**Key Progresses of 2022**

- 0 major violations occurred

**Anti-corruption** ★★ ★

**Potential impacts**

- Positive: reducing corruption and bribery in all forms

**Means to enhance positive impact / reduce negative impact**

- Adherence to business ethics

**Key Progresses of 2022**

- Implementation of **28** audit programs related to anti-corruption, covering the headquarters of BEHL and **66.7%** of its subsidiaries
- No** lawsuit in connection with embezzlement and corruption
- Organization of **5** integrity educations, with **3.5** hours of training per executive director and **1.5** hours of training per employee
- Formulation of the *Anti-bribery and Anti-corruption System*, the *Whistleblowing Management System* and the *Whistleblower Protection System*

### Operation

**Product and project quality** ★★ ★

**Potential impacts**

- Positive: Providing customers with safe and reliable energy, drinking water and beer products and promoting investment in clean energy infrastructure

**Means to enhance positive impact / reduce negative impact**

- Stabilizing gas supply and ensuring gas safety
- Putting in place the whole-chain brewery management of "raw materials + production process + market" to improve product quality
- Establishing a standardized management system to build "benchmark water plants"
- Optimizing process flow and improving solid waste treatment capability

**Key Progresses of 2022**

- As of 31 December 2022, Beijing Gas had a total of approximately **7.29** million piped gas subscribers and approximately **31,600** kilometres of natural gas pipelines in operation.
- Yanjing Brewery's product quality KPIs: physico-chemical index, microbiological index and consistency index increased by **26.7%**, **50.1%** and **10.9%** respectively year on year
- BE Water put in place the management system for **26** standardized water plants
- The environmental business incinerates waste of **32,895** tonnes/ day for power generation

**Occupational health and safety** ★★ ★

**Potential impacts**


- Positive: ensuring a safe work environment
- Negative: safety accident(s) during operations

**Means to enhance positive impact / reduce negative impact**

- Creating a fair and equitable employment environment and a safe and healthy work environment for employees

**Key Progresses of 2022**

- 67%** of subsidiaries obtained the ISO 45001 occupational health and safety certification
- 1** accidents causing severe injuries or deaths
- 3,782** work days lost to work-related injuries
- Safety spending of RMB **1.771** billion
- 3,196** attendances of safety education and training activities
- Safety education and training coverage rate: **100%**



**R&D innovation** ★★

**Potential impacts**

- Positive: stepping up research and upgrading industrial technologies

**Means to enhance positive impact / reduce negative impact**

- Optimizing the innovation management system, continuously exploring scientific and technological innovation, and strengthening the management of intellectual property rights

**Key Progresses of 2022**

- RMB **1.927** billion R&D investment • **277** patent applications during the year
- 4,222** R&D positions • **213** patents granted during the year

**Supply chain management** ★

**Potential impacts**

- Positive: promoting sustainable supply chain

**Means to enhance positive impact / reduce negative impact**

- Formulated *Management Policy of Sustainable Supply Chain*
- Proactively identifying, preventing and controlling supply chain risks, moving quality management forward, and creating whole-chain high-quality services
- Setting a higher bar for suppliers in terms of labour rights and interests protection

**Key Progresses of 2022**

- 669** ISO 9001-certified suppliers
- 439** ISO 14001-certified suppliers
- 358** ISO 45001/OHSAS 18001-certified suppliers

## Environment

**Response to climate change** ★★ ★

**Potential impacts**

- Positive: facilitating low-carbon operations across the value chain and developing clean energy business
- Negative: generating greenhouse gas emissions and accelerating climate change, impacting the physical and transition risks at the places of operations

**Means to enhance positive impact / reduce negative impact**

- Formulating *Policy of Climate Change Response*
- Analysing climate change risks and formulating corresponding strategies
- Utilizing clean energies

**Key Progresses of 2022**

- Greenhouse gas emissions per HK\$ 10,000 of revenue dropped by **13.43%** year on year
- Beijing Gas had launched **81** integrated energy projects, which cover an area of **20.44** million square meters, reducing energy consumption by **54,000** tonnes of standard coal and carbon emissions by **134,000** tonnes for its customers in 2022
- The Xixian New Area Project, a subsidiary under the Solid Waste Treatment Platform, completed its project registration with the Global Carbon Council (GCC)
- Renewable energy usage: **320,711.79** MWh

**Promotion of environmental protection** ★★

**Potential impacts**

- Positive: Expanding the scope of clean energy applications, improving water quality and increasing the proportion of safely treated wastewater
- Negative: Fossil fuels are the main raw material for gas production and generate large amounts of wastewater during operation

**Means to enhance positive impact / reduce negative impact**

- Advancing the development of environmental protection by promoting the application of clean energies such as natural gas, expanding the scale of power generation by solid waste incineration, and facilitating sewage treatment and comprehensive improvement of water environment

**Key Progresses of 2022**

- Beijing Gas' combined natural gas sales volume was **21.69** billion cubic metres
- The Solid Waste Treatment Platform recorded a waste treatment volume of **6.09** million tonnes and an on-grid power generation of **1.52** billion kWh
- EEW GmbH overseas recorded a waste treatment volume of **4.607** million tonnes, an energy sale of **4.61** billion kWh
- BE Water is involved in **1,447** water plants, which are or will be in operation, and produced **44,287** million tonnes of reclaimed water

**Ecology and biodiversity preservation** ★★

**Potential impacts**

- Positive: Protecting and restoring ecosystems
- Negative: Impacting the ecology and environment during construction and operation

**Means to enhance positive impact / reduce negative impact**

- Released the *Management Policy of Biodiversity Protection* and pledging to prioritize biodiversity conservation in economic development
- Reducing the impact on the environment during the project total life cycle
- Actively carrying out ecological restoration projects

**Key Progresses of 2022**

- The percentage of newly built, renovated and expanded projects under BEHL that carried out environmental impact assessment was **100%**

**Waste emissions management** ★★

**Potential impacts**

- Positive: Encouraging pollution reduction and efficiency boost in operation
- Negative: wastewater, exhaust gas and solid waste are generated during production

**Means to enhance positive impact / reduce negative impact**

- Promoting technological upgrading and equipment renovation, among other tasks, to reduce the discharge or emissions of wastewater, exhaust gas and solid waste

**Key Progresses of 2022**

- Wastewater discharge per HK\$ 10,000 of revenue dropped by **10.64%** year on year
- Exhaust gas per HK\$ 10,000 of revenue dropped by **1.02%** year on year
- Hazardous waste emissions per HK\$ 10,000 of revenue dropped **26.99%** year on year

**Resources and energy conservation** ★★

**Potential impacts**

- Positive: Encouraging energy conservation and consumption reduction in operation
- Negative: Large amounts of energy and resources are consumed in the production process

**Means to enhance positive impact / reduce negative impact**

- Developing energy conservation work plans to efficiently use energy and water resources and conserve resources

**Key Progresses of 2022**

- Beijing Gas set and met the annual resource usage target of "keeping the total energy consumption below **7,335.69** tonnes of standard coal"
- Water consumption per HK\$ 10,000 of revenue dropped by **36.67%** year on year, and the energy consumption per HK\$ 10,000 of revenue dropped **16.39%** year on year

## Employee

**Equal employment opportunity and diversity** ★★

**Potential impacts**

- Positive: ensuring equal opportunities and eliminating discrimination

**Means to enhance positive impact / reduce negative impact**

- Creating and maintaining a work environment that provides equal opportunities and does not tolerate any discrimination or harassment on the basis of gender, age, religious beliefs or race, etc.
- Attracting excellent talents in various fields through diverse recruitment channels

**Key Progresses of 2022**

- 33,720** regular employees in 2022
- 2,288** ethnic minority employees, accounting for **6.79%**
- 1,398** overseas employees, accounting for **4.15%**
- 19.87%** of female employees in management positions
- 17,092** employees in revenue-generating positions, **25.24%** of whom are female
- 457** employees in STEM-related positions, **32.81%** of whom are female

**Employee rights protection** ★★ ★

**Potential impacts**

- Positive: safeguarding labour rights and creating decent jobs

**Means to enhance positive impact / reduce negative impact**

- Formulated the *Management Policy of Workers' Rights and Interests* and the *Management Policy of Sustainable Supply Chain* to protect the legitimate rights and interests of the Company's employees, employees in the supply chain, communities where the businesses operate and other stakeholders
- Improving the remuneration and performance-based bonus structure and building a sound benefits system
- Setting up communication, complaint and reporting channels to maintain two-way communication with employees

**Key Progresses of 2022**

- Employee physical examination coverage rate: **99.05%**
- Social insurances coverage rate: **100%**

**Employee communication and care** ★★

**Potential impacts**

- Positive: improving the physiological and mental health of employees

**Means to enhance positive impact / reduce negative impact**

- Set up baby care rooms and organizing physical examinations for female employees
- Caring for employees in need, adopting a targeted assistance policy and ensuring its proper implementation

**Key Progresses of 2022**

- Financial aid totaling RMB **1.49** million granted to **436** employees in need
- Employee satisfaction rate of Solid Waste Treatment Platform reached **100%**, with the coverage of **100%** employee

**Employee training and development** ★★

**Potential impacts**

- Positive: promoting employee education and training

**Means to enhance positive impact / reduce negative impact**

- Adhering to the concept of people-oriented human resource management and establishing a sound training system
- Improving the incentive and disincentive mechanism for the heads of subsidiaries of the Company, tying compensation to performance and putting in place a smooth promotion pathway
- Conducting an employee satisfaction survey every two years based on the *Employee Satisfaction Survey Management System*

**Key Progresses of 2022**

- Training coverage rate: **96.60%**
- Training hours per capita: **27.34**
- Annual training and development spending: RMB **8.95** million

## Community

**Contribution to community development** ★★

**Potential impacts**

- Positive: mobilizing resources to reduce poverty

**Means to enhance positive impact / reduce negative impact**

- Setting up a charity foundation and contributing to rural revitalization
- Offering assistance through volunteers and contributing to the public good

**Key Progresses of 2022**

- Donations: HK\$ **3,998** million

**Maintenance of community relations** ★

**Potential impacts**

- Positive: promoting citizenship education

**Means to enhance positive impact / reduce negative impact**

- Vigorously fulfilling corporate social responsibilities and continuing to promote public welfare undertakings in various fields such as sports, environmental protection education, and rural rejuvenation

**Key Progresses of 2022**

- 4,749** attendances for employee participation in charity projects
- 16,885** hours spent on charity projects

# Operation and Governance

A sound corporate governance mechanism helps enhance the value of the Company and protect the rights and interests of shareholders, and is an important foundation for the Company to achieve sustainable development. During its long-term corporate governance practices, BEHL has continuously improved its governance system, enhanced its management, valued risk management and internal control, and remained committed to honest and lawful operation to achieve long-term, stable and healthy development of BEHL.

## Major progresses of the year

- Implementation of **28** audit programs related to business ethics, covering the headquarters of BEHL and **66.7%** of its subsidiaries
- **No** lawsuit or violation in connection with embezzlement and corruption
- Organization of **5** integrity educations, with **3.5** hours of training per Executive Director and **1.5** hours of training per employee
- Formulation of the *Anti-bribery and Anti-corruption System of Beijing Enterprises Holdings Limited*, the *Whistleblowing Management System of Beijing Enterprises Holdings Limited* and the *Whistleblower Protection System of Beijing Enterprises Holdings Limited*
- **No** occurrence of information security or customer privacy leakage breach



## Sound and Robust Governance

BEHL strictly abides by the *Company Law of the People's Republic of China*, the *Hong Kong Companies Ordinance*, the *Rules Governing the Listing of Securities on the Stock Exchange of Hong Kong Limited* (the Listing Rules) and other laws, regulations and regulatory requirements of the place of listing. BEHL has set up a management and governance structure marked by well-defined authorities and responsibilities to ensure scientific and reasonable decision-making and efficient operation of the Company.

### Board of Directors

The Board of Directors of BEHL is the standing decision-making body of the Company and is accountable to the General Meeting of Shareholders. A number of special committees have been established under the Board of Directors, which constitute a sound and effective corporate governance structure. Such a corporate governance mechanism marked by well-defined authority and responsibilities and standardized operation effectively ensures that the governance decision-making of the Company can be fair and scientific. The Board of Directors and the special committees oversee the operational and financial performance of the Company by formulating strategies and monitoring their implementation and see to it that a sound internal control and risk management system has been put in place.

BEHL continues to build a more diversified and professional Board of Directors and fairly select and hire trustworthy independent Board Directors in strict compliance with the measures set out in the *BEHL Policy of Nomination of Board Directors*, the *BEHL Policy of Diversification of Board Members* and the *BEHL Rules of the New Articles of Association*. The headcount and background of the incumbent independent Board Directors meet relevant requirements of the place of listing. The incumbent Board Members of the Company are from a diverse range of areas such as risk management, economics, accounting and finance, which effectively informs the overall decision-making of the Board of Directors. By the end of 2022, the Board of Directors of BEHL had 8 Board Directors, including 4 executive directors and 4 independent non-executive directors, with one being female.

Within the Reporting Period, the Company held the training and seminar of "Major Revisions to the Listing Rules" attended by 14 Board Directors and middle and senior management personnel, which strengthened their ability to perform duties of Board Directors.

By the end of 2022, the Board of Directors of BEHL had 8 Board Directors, including



4 executive directors

4 independent non-executive directors

1 being female

Category	Number	Board Directors						
		Dai Xiaofeng	Jiang Xinhao	Xiong Bin	Tam Chun Fai	Wu Jiesi	Lam Hoi Ham	Yu Sun Say Chan Man Ki Maggie
Law	2	√						√
By specialization	Business administration	3	√	√	√	√		
	Economic management	6	√	√	√	√	√	√
	Audit/risk management	2			√	√		
	Engineering	1		√				
By academic background	Bachelor's degree	3			√	√	√	
	Master's degree	3	√	√	√			
	Doctoral degree	2				√	√	
By business focus	Segments	Gas	4	√	√	√	√	
		Beer	4	√	√	√	√	
		Water	4	√	√	√	√	
	Environment	4	√	√	√	√		
Functions	Audit	3				√	√	√
	Remuneration	2				√	√	
	Nomination	2						√

## Remuneration and Evaluation of Board Directors and Senior Executives

BEHL has put in place a remuneration system that combines base salary, which is relatively uniform and determined by value creation of the post, and performance-based pay, geared towards incentivizing employees to improve their capabilities.



A Remuneration Committee was set up under the Board of Directors, tasked with formulating and reviewing the remuneration policies and schemes for the Board Directors and senior executives of the Company. The Remuneration Committee deliberates on matters and makes decisions in accordance with the Company's *Articles of Association* and the *Scope of Authority of the Remuneration Committee*. The management determines the remuneration of personnel other than the Board Directors and senior executives.

The Company incorporates ESG indicators into performance assessment as binding indicators, mainly including workplace safety (including but not limited to safety accidents, safety penalty events, and contractor safety), environmental protection (including but not limited to greenhouse gas emissions, pollutant emissions and discharge, energy efficiency management, and environmental penalties), anti-corruption, legal and compliant operation, and risk management. Those who fail to meet performance targets will see points deducted from their overall evaluation score. The performance assessment is tied to remuneration.

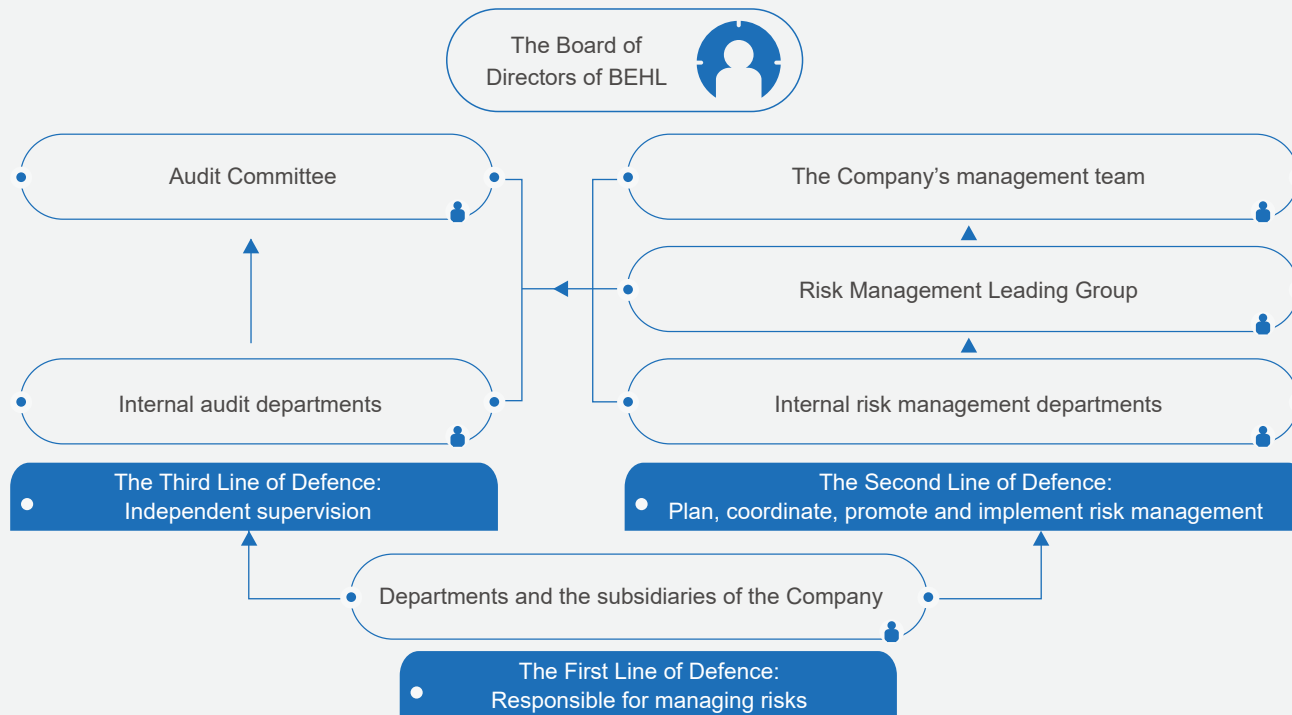
To ensure fruitful ESG work, the Company sets targets or requirements for safety management, environmental protection, anti-corruption, legal and compliant operation, risk management and other facets every year, which are integrated into the annual performance evaluation system of management personnel at all levels. The management personnel are subject to an annual performance evaluation on those dimensions, based on which their remuneration will be paid.



## Strict Control of Operational Risks

BEHL views risk management and internal control as part of the core of its operation and management. The Company has established a risk management structure consisting of the Board of Directors and three lines of defences, namely the Audit Committee, departments of the headquarters, and the subsidiaries. In 2022, the Company revised the *BEHL Risk Management Measures* and the *BEHL Risk Management Manual*: on top of the original three lines of defences, the Company further clarified the criteria for defining major risks, further standardized the mechanism for reporting major risk events, and added the requirements on special risk assessment and management for major projects, further improving the overall competency and performance in risk management. To standardize the internal control work, the Company formulated the *BEHL Internal Control Manual*, which specifies both overall Company-wide control and control of business processes and ensures consistency between the manual and business operations. In 2022, the Company newly formulated the *BEHL Internal Control Management Measures*, which clarifies the specific requirements and methods for the building and updating of the internal control system.

The “three lines of defences” for risk management at BEHL



To effectively step up the Company’s risk management, BEHL has built a relatively sound risk management system. In 2022, the Company carried out risk management and internal control optimization projects, and systemically sorted out the business risks that the Company might be involved in by going through documents and interviewing employees at multiple levels; the Company identified and assessed the more prominent risks in business development, and issued an annual risk management report internally, which summarized the implementation of major risk control measures and specified the major risks and plans for their control the next year, promoting the effective prevention and control of risks.

We provide internal control and risk management training for both management personnel and rank-and-file employees to strengthen the risk management awareness across the board, enhance the ability to prevent risks, and help the Company become more sensitive to spot risks and more professional in handling risks. In 2022, the Company held a training session themed “how to make management more fine-grained at the Company through internal risk control”, which registered 100 attendances. The Company also carried out two educational sessions on risks with the focus placed on the corporate management and governance requirements of HKEX and the three lines of defences for risk management.

## Compliance with Business Ethics

BEHL earnestly advocates for integrity in business. It strictly abides by the *Anti-Monopoly Law of the People's Republic of China*, the *Anti-Unfair Competition Law of the People's Republic of China*, the *Supervision Law of the People's Republic of China*, the *Anti-Money Laundering Law of the People's Republic of China* and other laws and regulations. BEHL also complies with regulations related to commercial bribery, monopoly, money laundering and other business practices, vigorously advocates for anti-corruption, rigorously investigates violations and disciplinary issues, avoids conflicts of interest among related parties, and fosters business ethics. During the Reporting Period, there is zero violation at BEHL.

### Anti-Corruption

BEHL formulated and distributed the *Statement of Responsibility for Improving Party Conduct and Upholding Integrity* and the *Letter of Commitment to Integrity* to strengthen the standardized guidance and institutionalized management and control in anti-corruption work. The Company attaches importance to anti-corruption supervision. It regularly conducts anti-corruption and business ethics audits every year to ensure honest and lawful operation. In 2022, we formulated the *Anti-bribery and Anti-corruption System* and earnestly fulfilled our responsibilities for supervision. In the year, we implemented and carried out 28 audit programs, which included various kinds of business ethics audit such as economic responsibility audit, and operation and management audit, covering the headquarters of BEHL and 66.7% of its subsidiaries. The audit programs of 2022 spotted 66 issues for rectification, and 57 have completed the rectification.

As instructed by its *Management Policy of Sustainable Supply Chain*, the Company requires partners to abide by its anti-bribery and anti-corruption policies and regulations. In addition, BEHL, according to the *Statement of Responsibility for Integrity in Project Management*, curbs all kinds of abuse of power by suppliers for personal gains in all forms in construction projects. Such efforts aim to safeguard fairness and honesty in business dealings, protect the creditability and reputation of parties involved and foster a favorable business environment.

The Company continuously organizes anti-corruption training and special inspections targeting regular employees and suppliers alike to foster integrity and ensure the effectiveness of anti-corruption and anti-bribery measures. In 2022, BEHL organized five integrity educations<sup>1</sup>, with 3.5 hours of training per executive director and 1.5 hours of training per employee. During the Reporting Period, there was no lawsuit in connection with corruption in BEHL.

<sup>1</sup> Training-related statistics here all refer to regular employees of BEHL. There are no part-time employees at BEHL.



#### We promise:

- The Company shall strictly comply with applicable laws and regulations against bribery and corruption, and require all employees to comply with the Company's policies and systems against bribery and corruption.
- Employees of the Company shall be honest and self-disciplined and not take advantage of their positions to accept bribes from others during the performance of their duties. They shall strictly abide by the rules of fair competition, operate in good faith, and not bribe others to seek illegitimate benefits.
- Committing bribery in the name of charitable donations is forbidden.
- Company-wide publicity on anti-bribery and anti-corruption shall be carried out.
- The Company shall keep whistleblowing channels smooth, and accept and register complaints filed against bribery and corruption behaviors.
- The Company shall establish a work mechanism for combating bribery and corruption and fulfill relevant tasks.

In 2022, BEHL



organized

**5** integrity  
educations

with

**3.5** hours  
of training per  
executive director

**1.5** hours  
of training per  
employee

## Reporting and Whistleblowing

To improve the management of business ethics supervision and whistleblowing, BEHL, in accordance with the *Measures for Implementing Discipline Inspection and Supervision and for Handling Whistleblowing and Reports*, regulates the whistleblowing channels and procedures to ensure that complaints and reported incidents can be handled timely and effectively. Guided by the principles of centralized management, standardized procedures and rigorous discipline, BEHL has put in place smooth and open channels for whistleblowing against corruption. Whistleblowers can file complaints against corruption through the email or phone.

According to the *Work Rules for Disciplinary and Supervision Organs' Investigation and Handling of Reports and Accusations*, the *Regulation on Complaint Letters and Visits*, the *Guidelines at Hong Kong Headquarters on Equal Opportunity and Privacy of Beijing Enterprises Holdings Limited*, the *Management Policy of Workers' Rights and Interests* and other relevant regulations, BEHL strictly applies the principle of confidentiality and recusal and specifies the legal protection for whistleblowers, controls the scope of access to complaints and clues, and strictly prohibits the disclosure of related clues and handling methods. Accessing related clues without approval and retaliation against whistleblowers in any form are forbidden. In 2022, BEHL formulated the *Whistleblowing Management System* and the *Whistleblower Protection System* to clarify whistleblowing protection measures and confidentiality measures. In 2022, BEHL received 8 complaints and visits regarding corruption, with a handling rate of 100%.



### BEHL's whistleblowing channels

Hotline: 010-85879113

Email: Jubao@behl.net.cn



### We promise:

- The legitimate rights and interests of any individual or unit who files whistleblowing complaints with the Company according to law shall be protected by law. The Company must keep utterly confidential the content of complaints and the information of whistleblowers.
- If anonymous whistleblowing falls within the scope of acceptance, the Company shall accept it according to procedures.
- Whistleblowers have the right to “file whistleblowing complaints against suspected violations of laws, regulations and disciplinary procedures” and other rights.
- Whistleblowers have their legitimate rights and interests stipulated by the national laws and regulations. The relevant departments in the Company shall put in place strict confidentiality provisions, strict excusal mechanisms and effective measures against retaliation to protect the legitimate rights and interests of whistleblowers and accept their request concerning protection of their legitimate rights and interests.

## Information Security

BEHL attaches the utmost importance to information security and customer privacy protection. It strictly complies with the *Cybersecurity Law of the People's Republic of China* and the *Personal Information Protection Law of the People's Republic of China*. All its subsidiaries have established appropriate information security and privacy protection mechanisms according to their own reality, specified the authority for information collection and utilization, clarified responsibilities for information security and taken proper cybersecurity measures to avoid information and privacy leakage. In 2022, no incident of information security or customer privacy breach occurred in BEHL.

In building and implementing information security management systems, Beijing Gas has met the requirements of international standards. It has passed the ISO 27001 certification for information security management system for seven consecutive years and passed the Level 2 information security network assessment by the Ministry of Public Security. In 2022, Beijing Gas established the Information and Digitization Management Committee, which doubles as the Cybersecurity and Information Management Committee, thereby putting in place a comprehensive information security responsibility system. Beijing Gas has introduced many systems, including the *Cybersecurity Management Regulations*, the *Management Measures for Cybersecurity Incidents*, the *Management Measures for Information System Security*, the *Management Measures for Information Security Risks*, the *Management Measures for Cybersecurity Emergencies*, the *Management Measures for Mobile Terminal Cybersecurity*, and the *Management Measures for Information System Data Security*; such information and technology management systems are all-encompassing, including security management, emergency management, and operation and maintenance, thus serving as effective safeguards for data and information security. In 2022, Beijing Gas released *Detailed Implementation Rules for Personal Information Security of Information Systems*, further clarifying the personal information security protection requirements.



In line with the uniform safety strategies and orderly management procedures, BE Water has established an integrated information security management system that can be managed, controlled and trusted, consisting of security strategies, management systems, operation procedures and record forms, which covers 15 areas including information security strategies and governance organization, system running, information-related asset security and data security. It has produced more than 60 management documents including *Information Security Management System of BE Water* and *Information Security Strategy of BE Water*; meanwhile, it has established an information security management committee to supervise the internal implementation of information security policies. In 2022, BE Water carried out information security risk assessment through interviews and surveys, system verification and penetration testing, and formulated corresponding rectification measures for each risk spotted. BE Water obtained the ISO 27001 information security management system certification in the year.

Based on the *Information System Security and Emergency Planning System of Beijing Enterprises Environment Group Limited (Trial)*, *Management Measures for Assessment and Evaluation of Adoption of Genuine Software and Computer and Software Management Measures (Trial)* and other systems, BE Environment has strengthened the management of information system user accounts, the stability management of hardware and software, and the ability to deal with information security emergencies, thereby stepping up its information security governance. In 2022, BE Environment released the "1+3" work plan of informatization, which consists of one company-wide digital platform and three department-level informatization projects (upgrading of the production and operation system, OA system and the financial system); through such endeavors, BE Environment has subjected information flow and business operation to uniform management and surveillance, thereby ensuring the stable and safe operation of information platforms.



Yanjing Brewery continuously strengthens its information security management. It has formulated the *Cybersecurity and Information Security Emergency Response Plan*, and tailored risk management measures to each level of safety risks to ensure timely response to information security issues. Yanjing Brewery had passed the Level 2 information security network assessment by the Ministry of Public Security. In 2022, Yanjing Brewery safeguarded security of its online capital flow and confidential information through the proper hardware and software and also data backup, thereby guaranteeing the stability and security of the entire e-commerce operation.

BEHL has also made important efforts to protect customer privacy. To effectively safeguard customer privacy and information security, Yanjing Brewery, in accordance with the management requirements of the Excellent Quality Management System, laid out strict requirements on customer information protection and made it clear that any violation of such requirements would be dealt with seriously in accordance with the regulations. Beijing Gas, based on the *Beijing Gas Regulations on Information Secrecy Management*, formulated specific rules on the conditions for and means of using customer information, the duration for keeping customer information, and third-party disclosure policies. Beijing Gas requires all employees with access to customer information to sign a confidentiality pledge letter. In 2022, Beijing Gas received no complaint related to violations of customer privacy. BE Water formulated reasonable and feasible data security protection measures and strict rules on information access authority to protect customer privacy to the largest extent possible. In 2022, no major information security incidents occurred at BE Water.



In 2022,

**no** incident of

information security or customer privacy breach occurred in BEHL

# Development and Innovation

BEHL is committed to becoming a responsible, strong and reliable integrated utility service provider. To that end, it has been continuously improving the quality of its products and services in each business segment and enhancing R&D and innovation capabilities. While meeting people's basic and daily needs and creating responsible products, BEHL has been promoting joint building of the industry by engaging its suppliers and stepping up whole-process management of suppliers, striving to create a favorable environment for development and innovation.

## Major progresses of the year

- The third-party assessment of service windows of Beijing Gas was completed, with the score averaging **92.48**
- BE Water put in place the management system for **26** standardized water plants
- Yanjing Brewery completed the setting of **1,162** articles of audit standards in **17** modules of the quality system
- BEHL invested a total of RMB **1.927** billion in R&D, with the number of R&D positions being **4,222** and newly granted patents being **213**



## Product Responsibility

Product responsibility is the eternal theme of the Company's development. Based on the specific situation of each business segment, BEHL has taken a wide range of measures to improve refined and lean management in production and operation, making the utmost efforts to ensure safe and reliable product quality.

### Gas

To continuously meet the growing demand for gas from residential, industrial, and commercial customers, Beijing Gas has improved the construction of gas storage facilities, strengthened communication with upstream resource suppliers such as CNPC and PipeChina, and expanded gas storage capacity through multiple channels such as signing framework agreements for emergency gas supply assurance. Meanwhile, Beijing Gas has bolstered forecast monitoring and formulated scientific-analysis-based gas consumption plans. To safeguard gas supply, a resource balance and gas volume management system has been put in place, in addition to a system which integrates the production, supply, storage and marketing of natural gas. As of 31 December 2022, Beijing Gas had a total of approximately 7.29 million piped gas subscribers and approximately 31,600 kilometres of natural gas pipelines in operation.

To provide consistently safe and stable gas supply, Beijing Gas leveraged a host of new-generation technologies such as BeiDou and 5G in the construction of smart pipeline networks with the goal of widening application of intelligent technologies, which has significantly improved production and operation efficiency and enhanced refined management. The production and operation system applied by Beijing Gas comprises fifteen management modules, including pipe network operation, leakage detection and pressure regulation operation, with full coverage of operation and management business and full measurement of the operation process. By the end of 2022, the penetration rate of smart meters reached 24.54% and 83.3% among residential customers and non-residential customers respectively.



### Beijing Gas's construction of smart pipeline network

The SCADA<sup>2</sup> intelligent monitoring system set in Beijing Gas's operation and dispatch center enables it to manage the operation of a city's entire gas pipeline networks dynamically and holistically, providing data support for scientific dispatching of gas across the city. This system has laid the foundation for better production and operation management, providing stronger assurance for the safe and stable operation of the capital's gas pipeline network.



> The SCADA monitoring system in Beijing Gas's operation and dispatch center

### Beijing Gas built new gas transmission and distribution stations

In 2022, Beijing Gas added two new gas transmission and distribution stations—the Chengnanmo Station and Pinggumen Station. The Chengnanmo Station connected to the LNG external transmission pipeline offers new gas transmission channels for the external supply of natural gas in Beijing, playing an important role in safeguarding energy supply and energy security in the city. The Pinggumen Station, as the gas source in the northeast of Beijing, supplies gas to the high-voltage ringed network A of the sixth ring of Beijing and to Pinggu District of Beijing in its proximity. The Pinggumen Station, as the second gas source in Pinggu District, provides assurance for the local gas supply and drives economic development in the district.



> Chengnanmo Station in Beijing

<sup>2</sup> SCADA, Supervisory Control and Data Acquisition

## Water

With a high-quality delivery strategy in place, BE Water devoted itself to establishing a product quality control system which focuses on systematic standards, control process and quality assurance by leveraging the *Delivery Quality Standards Manual for Wastewater Treatment Plant of BE Water*. The application of this quality control system in standards, control processes and quality control evaluation has made quality lean management knowable, visible, and controllable. To strengthen product quality control, BE Water released the first set of visualized standards for detailed projects<sup>3</sup> in 2022, divided into five sections: plant communal space, complex buildings, interior of complexes, electrical automation control, fencing and gates, covering nearly 200 product nodes of 26 detailed projects. In addition, BE Water facilitates the building of an overarching digital platform in a coordinated manner and it has set the annual target for delivery of the digitization program overall and of each sub-program as well. BE Water has been promoting the speedy delivery of the digital platform with the aim of driving operational efficiency with digitization. As of the end of the Reporting Period, the headquarter of BE Water has obtained the ISO 9001 quality management system certification and 26 standardized water plants have implemented the management system.

Leveraging the star-rated evaluation system, BE Water strives to continuously improve the operation and management and establish a replicable and scalable standardized management model through promoting data standards and business process criteria in the operation and management of standardized water plants. In 2022, BE Water revised *Guidelines on Star-rated Operation Enterprise Acceptance* and other relevant prescriptive documents. It has been continuously improving the star-rating acceptance guidelines, data model and acceptance tools and vigorously exploring reforms of the management model of star-rated enterprises, striving to shift from standardized to refined star-rating management. In addition, to ensure safe and stable operations, BE Water has set up the “1+N”<sup>4</sup> group model to improve regional intensification, boost management efficiency and enhance the risk control system and emergency response mechanism. In 2022, BE Water set up the Fulfillment Inspection Team and innovatively applied the “online + offline” and “inspection + empowerment” fused model in the fulfillment inspection mechanism, which has covered 100% of the under-construction projects.

Fused model in the fulfillment inspection mechanism



In 2022, BE Water completed altogether



**55** project  
fulfillment  
inspections

identified  
**3,041**  
problems

rectified  
**2,824**  
problems

with a completion rate of  
**92.8%**  
during the year

<sup>3</sup> Detailed projects: an engineering term, also known as ancillary projects, refers to projects which are incidental or additional to the main project.

<sup>4</sup> 1+N: establishing an IoT platform to collect, exchange and act upon big data on regional operation so that relatively centralized water plants in a region can be connected and generate a clustering effect.





## Environment

With the development goal of “becoming a leading comprehensive environmental service provider with solid waste treatment and disposal as the core business”, our Solid Waste Treatment Platform, with the focus on operational efficiency and quality, dedicated consistent efforts to promoting the “standardization, specialization, normalization and refinement” of its operation system. In 2022, the Solid Waste Treatment Platform formulated the *Production and Operation Benchmarking Program, Detailed Rules for the Implementation of the Production and Operation Benchmarking Program* and other internal systems, as part of the company-wide benchmarking endeavor to improve the overall operation and project management quality by comparing its business development with the practice and exemplary projects of advanced peers. As of the end of the Reporting Period, the waste incineration power generation treatment capacity of the environmental business reached 32,895 tonnes per day.

### Quality management honors granted to the Solid Waste Treatment Platform of BEHL in 2022



The Xixian Project, one of the subsidiaries of the Solid Waste Treatment Platform, was awarded the “Two Centenaries” Model for Waste Incineration with Public Engagement in the 16th Solid Waste Strategy Forum of E20 Environment Platform.

Tai’an Project, one of the subsidiaries of the Solid Waste Treatment Platform, won the title of 2022 Provincial Excellent Sanitation Unit.

The Changde Project, one of the subsidiaries of the Solid Waste Treatment Platform, was awarded the 2022 Regional Water-saving Enterprise and the 2022 Regional Safe Enterprise.

Haidian Project, one of the subsidiaries of the Solid Waste Treatment Platform, was granted the plaque of “Environmental Education Base” by the Publicity and Education Center of Beijing Municipal Ecology and Environment Bureau.

### One of the Solid Waste Treatment Platform’s subsidiaries won the second prize of SOE Management Innovation Achievements

In 2022, the domestic waste bio-safety disposal incineration cogeneration project in Xixian New Area came to fruition after 20 months of construction, with successful defect-free startup in one go. The defect-free start-up managerial model, which was designed to complete the commissioning and start-up operation in one shot before the startup of the whole system through comprehensive refined management on site to reduce the waste of time and capital caused by the overly long commissioning cycle due to defects. In June 2022, the “defect-free start-up management model of Xixian New Area domestic waste bio-safe disposal incineration cogeneration project” was awarded the second prize of 2021 SOE Management Innovation Achievements.



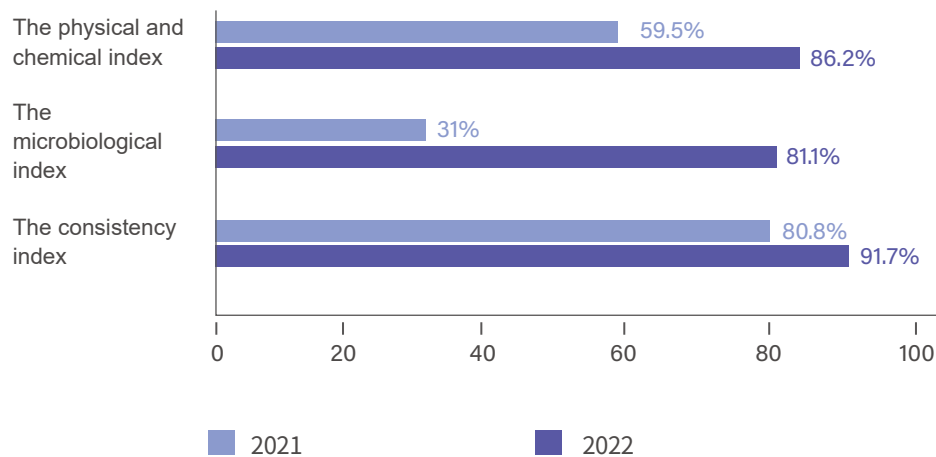
> The Xixian New Area BE Environmental Protection Technology Development Co., Ltd.

## Beer

Food safety and quality management is the core of Yanjing Brewery's operational management. Yanjing Brewery strictly abides by the food safety and quality-related laws and regulations of the People's Republic of China, including the *Food Safety Law of the People's Republic of China*, the *Product Quality Law of the People's Republic of China*, the *Standardization Law of the People's Republic of China*, the *General Hygienic Code for Food Production of the National Food Safety Standard (GB14881-2013)*, the *Standard for the Use of Food Additives of the National Food Safety Standard (GB2760 -2014)*, *Regulations on the Hygiene License of Sterilized Product Manufacturing Enterprises*, and *Beer (GB/T4927-2008)*.

Guided by the "Quality is Life" strategy and steadfast commitment to quality, Yanjing Brewery holds fast to high-quality standards and strives to promote the Excellent Quality Management System to fulfill the goal of "every bottle in every batch is of the highest quality". In 2022, Yanjing Brewery established 17 modules and 1,162 articles of auditing standards for the quality system, formulated nearly 300,000 requirements on quality correction action, and performed audits, which show that the results of quality KPIs such as the physico-chemical index, microbiological index and consistency index of Yanjing Brewery products are improving.

Performance of quality KPIs of Yanjing Brewery 2021-2022



To improve process quality management, Yanjing Brewery has in place a unified quality testing standard system and testing methods, which has further improved quality inspection and monitoring capabilities. In 2022, Yanjing Brewery bolstered its laboratory testing capabilities through controlled sample operation, process capability analysis, inter-laboratory capability comparison and improvement based on method consistency. As a result, the dissatisfaction rate of inter-laboratory capability comparison decreased by 6% and the satisfaction rate increased by 4% compared with 2021. In addition, to realize company-wide quality improvement, Yanjing Brewery attaches great importance to the capability cultivation of personnel involved in quality management. In 2022, 36 quality training sessions were conducted, which provided a total of 120 hours of training.

Yanjing Brewery has formulated the *Yanjing Brewery Product Recall Management System* in accordance with the *Food Recall Management Measures* issued by the former China Food and Drug Administration, which specifies the process, grading, information source, confirmation and validation, execution, disposal, and mock drills of product recall. During the Reporting Period, no product recall due to food safety and quality issues occurred in Yanjing Brewery.

Quality management honors received by Yanjing Brewery in 2022

National Leading High-quality Beer Brand

National Leading High-quality Beer Enterprise

National Quality and Integrity Benchmark Enterprise

National Quality Inspection Stable and Qualified Products



## Customer Service Management

Closely following customer demands, we devote tireless efforts to improving the customer service system while creating safe and high-quality products, which protects the rights and interests of customers on all fronts and responds to and handles customer complaints without delay. Customer satisfaction surveys and complaint callbacks are conducted to effectively solve the problems encountered by customers, and continuously improve customer satisfaction.

### Gas

To sustain improvements in service quality, Beijing Gas has set up a four-level quality inspection system at the group level, company level, management office level and service center level, supported by a closed-loop working mechanism which comprises dynamic problem review, regular meetings for analysis and rectification efforts. By combining quality inspection data and on-site examination, services are delivered accurately to improve the refined management of service quality. In 2022, Beijing Gas made callbacks to 100% of the maintenance and repair work orders, with the satisfaction rate reaching 97.71%; the third-party evaluation of gas service center windows has been completed, involving 344 visits to the service centers, which scored 92.48 on average, thanks to the preliminary standardization of service window hardware facilities and service personnel performance.

For complaint handling and response, Beijing Gas has improved the “handling of complaints upon receipt” system and vigorously promoted proactive and preemptive actions in dealing with complaints. In 2022, in accordance with the requirements of the *Beijing Municipal Regulations on Handling of Complaints Upon Receipt*, the Company revised and completed the *Beijing Gas 2022 Work Plan for the Stability Maintenance of Complaint Letters and Visits and Handling of Complaints Upon Receipt* and *Beijing Gas 2022 Work Plan for the Promotion of Proactive Governance and Preemptive Measures & 2022 Work Plan for Handling of Complaints Upon Receipt*, to maintain order within the Complaint Letter and Visit system. The “2 million” special project was carried out, with the target of “installing 1 million smart gas meters and 1 million safe accessories for residential customers”, which was overfulfilled with the actual installation of 1.1 million and 1.03 million respectively. In 2022, Beijing Gas received a total of 7 complaints, all of which had been properly resolved and handled.

### Beijing Gas's Safety Housekeepers in the Communities

In 2022, Beijing Gas established a team of over 600 indoor and outdoor housekeepers, whose information were fully disclosed. The grid gas service network which features diverse service channels and consistent quality has realized 100% coverage, providing new mechanisms, innovative contents, and wider management channels to community service.



> Beijing Gas launched “Gas Safety Housekeeper in the Communities” campaign

In 2022, Beijing Gas



made callbacks to

**100%**

of the maintenance and repair work orders

with the satisfaction rate reaching

**97.71%**

## Water

Upholding the corporate tenet of “customer-centric and creation-focused”, BE Water has built a whole-process customer service system. In 2022, BE Water hired a third-party consulting company to customize a professional overall customer service framework for it, which benchmarks BE Water against well-known enterprises and factors in characteristics of the industry. Such efforts help BE Water further optimize its customer service system and earn greater trust of customers.

Under the framework of China Corporate Customer Satisfaction Index (CCSI) model, BE Water has formulated internal management systems such as the *Measures on Customer Satisfaction Management*, proactively reached out to customers, and continuously expanded the scope of customer satisfaction surveys and survey channels. Via the series of road shows involving senior executives, BE Water vigorously engaged in direct dialogue with high-level and local government customers to keep abreast of customers’ demands and satisfaction of BE Water in different regions. In addition, to ensure that the problems and suggestions from customers are solved in a timely and effective manner, BE Water has established a mature complaint mechanism with smooth complaint filing channels, guaranteeing that customers can file complaints by phone, email, and other means, which will be aggregated at the headquarters for decision making and processing in the operation management meeting, special operation management meeting or the CEO’s Office. In addition, BE Water conducts complaint callbacks to improve customer experience.

## Beer

Being consumer-centric, Yanjing Brewery has developed a host of internal management systems, including the *After-Sales Service Management System* and the *Complaint Handling Process* in accordance with the *Consumer Complaints Law of the People’s Republic of China*, the *Quality Law of the People’s Republic of China*, and other relevant regulations to standardize after-sales services and perpetuate improvement in service quality.

To optimize the customer service experience, Yanjing Brewery has set forth customer service provider management indicators and provided professional trainings to its customer service team. Shipments and the processing of after-sales work orders at each store are monitored in real time. In addition, holding consumer complaints and suggestions in high regard, Yanjing Brewery requires relevant departments and responsible persons to respond to complaints, solve problems and improve processes without any delay. In 2022, Yanjing Brewery flexibly dealt with various complaints through a wide range of approaches such as online meeting and commissioned negotiation in accordance with the principle of handling complaints upon receipt and in places nearby. The complaint resolution rate reached 100% and the customer satisfaction coverage rate reached 97.5%.



Complaint resolution rate

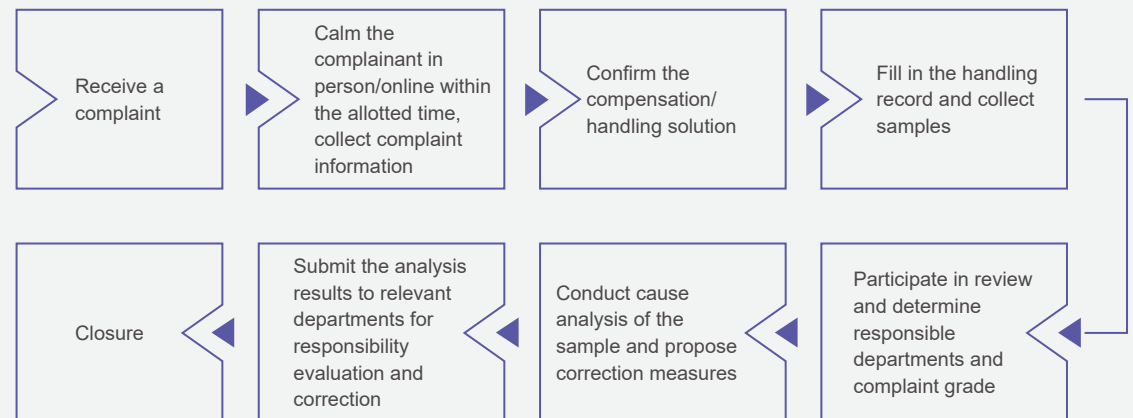
100%



Customer satisfaction coverage rate

97.5%

### Yanjing Brewery’s complaint handling flowchart





As of the end of the Reporting Period,  
we obtained **213** newly approved  
patents

## Development of Innovative Products

Regarding innovation as an inexhaustible driving force for corporate development, BEHL has devoted tireless efforts to improving the innovation management system, strengthening innovation capability, and cultivating an innovation culture. We are committed to respecting the intellectual property rights (IPR) of others while protecting our own IPRs from infringement. In 2022, BEHL invested RMB 1.927 billion in R&D, employing 4,222 R&D personnel. We continued to unleash the technological advantages of each business segment and made considerable achievements. During the year, 277 patents were applied for and 213 new patents were granted.

## Gas

Committed to the “technology-driven and technology-empowered” strategy, Beijing Gas has doubled efforts in research projects and information technology projects. A host of technology projects in gas transmission and distribution, gas application, metering services, comprehensive energy and smart gas have reaped fruits, providing stronger technology support to urban operation.

### Beijing Gas' research projects passed the acceptance test of the Beijing Municipal Science and Technology Commission

In February 2022, the research project “Research and Demonstration Verification of Adaptability Evaluation of Hydrogen Blending into Natural Gas”, jointly undertaken by Beijing Gas, the SPIC Hydrogen Energy Technology and Beijing Gas and Heating Engineering Design Institute, successfully passed the acceptance test of the Beijing Municipal Science and Technology Commission. Among the involved parties, Beijing Gas was mainly responsible for the research on the risk evaluation of hydrogen blending into natural gas. Through the implementation of this project, Beijing Gas has fully reactivated the existing pipeline network resources, laying the groundwork for the technologies of zero-carbon energy transmission paths to widen Beijing Gas's energy transformation.

### Beijing Gas completed the “Research and Demonstration of Key Technologies for Gas Meter Protection and Intelligent Safety Monitoring for Gas Users”

In 2022, Beijing Gas completed all the research tasks in “Research and Demonstration of Key Technologies for Gas Meter Protection and Intelligent Safety Monitoring for Gas Users”, a project under Beijing Municipal Science and Technology Commission. Beijing Gas presided over the project and jointly implemented it with the Institute of Urban Safety and Environmental Science under the Beijing Academy of Science and Technology and Beijing University of Posts and Telecommunications. The project has developed the intelligent meter with meter body protection and the integrated meter with video collection and analysis, which have been applied by heating boiler users for demonstration purposes. The project has provided strong support for improving the safety protection, monitoring and early warning, and safe handling capabilities of gas metering facilities.



## Water

BE Water has been pushing forward the building of an organizational system for scientific and technological innovation at full steam: it has kept improving the *Outline of Science and Technology Development Planning of BE Water (2021-2025)* and issued the *Implementation Guidelines for Promoting Scientific and Technological Innovation of BE Water*, and continuously optimized the top-level design of the R&D system. BE Water has gradually propelled the transformation from research outcomes into products and the ensuing commercialization.

With the emphasis placed on its main business, BE Water has been actively exploring and developing new cutting-edge technologies, such as ceramic membrane, membrane-based pre-concentration (MPC) and targeted flocculants. BE Water is bent on promoting technology innovation and transformation and the application of scientific and technological outcomes to drive industrial technology iteration and upgrading. Meanwhile, BE Water has been vigorously engaged in the R&D of digital technologies. It works hard to make water business intelligent and build more intelligent water plants. By tapping into the data of the water business systems, it has been working towards precise management, intelligent control and smart decision-making and upgrading the operational and management models to better ensure the safe operation of water facilities. In addition, BE Water has built the Yuehui Digital Technology Platform, which internally extracts digital knowledge and expertise within BE Water and externally takes on digital technology-focused product development and consulting in the area of environmental protection infrastructure. As of December 2022, the Yuehui Digital Technology Platform had obtained 12 corporate qualifications and certifications, including National High-Tech Enterprise, Capability Maturity Model Integration (CMMI) Level 3, ISO 9000, ISO 14000, ISO 20000.

In 2022, BE Water revised and improved internal systems such as Management System of Intellectual Property Rights of BE Water and sorted out the process of application and approval, transfer and transformation, management and use, confidentiality, rewards and punishments for all kinds of intellectual property rights to standardize and improve the management system of intellectual property rights (IPR) and to better manage IPRs. Meanwhile, BE Water actively set up special incentives for IPRs and incorporated rewards for IPRs and standard formulation into Implementation Guidelines for Promoting Scientific and Technological Innovation of BE Water. The special incentives for patents, software copyrights, trademarks, as well as national, industry and local standards have been given for four consecutive years to comprehensively enhance the capabilities for scientific and technological innovation and stimulate the organizational vitality.

## Environment

The Solid Waste Treatment Platform continues to improve the science and technology innovation work mechanism. In 2022, Solid Waste Treatment Platform formed a science and technology development committee, established a technical work liaison group and built a basic technical information library. Through such efforts, Solid Waste Treatment Platform advocates for the sharing of scientific and technological R&D achievements and fosters a positive atmosphere favorable to innovation within the company. In addition, Solid Waste Treatment Platform vigorously promotes research on cutting-edge technologies, and accelerates the transformation and application of technological achievements. In 2022, Solid Waste Treatment Platform carried out 35 R&D programs covering sludge treatment, leachate treatment process, fly ash and slag resource utilization, incineration process, and waste gas denitration, among others. Among them, 26 programs have been evaluated and accepted and subsequently successfully applied in production. The research outcomes have effectively increased resource utilization efficiency, reduced pollution emissions and discharge and also lowered equipment maintenance and repair frequency, delivering environmental and safety benefits as well as economic benefits.



**The Solid Waste Treatment Platform steadily promotes the application of polymer denitration technology**

In 2022, through data analysis, the Solid Waste Treatment Platform defined the application criteria, investment, and cost of polymer denitration, which can replace SCR (selective catalytic reduction) and keep  $\text{NO}_x$  emission concentration below  $100\text{mg}/\text{Nm}^3$ . Compared with SCR process, polymer denitration can cut down investment by 70%, reduce systematic resistance and eliminate steam heating, saving a considerable amount of energy. As of the end of the Reporting Period, the technology has been introduced in the Shuyang Project of the Solid Waste Treatment Platform, where the equipment installation and commissioning has also been completed.

## Beer

To meet the development needs of China's beer industry and tackle the key and generic technological issues that urgently need to be addressed, thereby driving progresses on a larger scale, Yanjing Brewery has carried out research on cutting-edge technologies involved in the whole process of beer making from raw and auxiliary materials to finished products. It is committed to pursuing innovative and new technologies, processes and equipment for modern beer brewing and establishing itself as a Chinese beer enterprise with strong influence.

In 2022, Yanjing Brewery, adhering to the mission of "Brewing for a Beautiful Life", continued to stimulate consumption demand as the trendsetter; to that end, it dived into development of products in multiple categories, research on new brewing techniques, and study of consumer science, initiating altogether 47 projects of research and innovations. Among them, *Research on the Interaction Mechanism of Multiple Flavors of Beer and Key Technology of Hop Aroma Regulation* won the second prize of Science and Technology Progress Award granted by the China Light Industry Federation; *Development and Application of Key Technology of Wheat Beer Quality Improvement and Precise Regulation* won the third prize of Science and Technology Progress Award granted by China Alcoholic Drinks Association (CADA); and *Development and Application of Intelligent Evaluation Method of Beer Preference Based on Consumer Neuroscience* was evaluated by CADA and recognized as an internationally leading scientific and technological achievement.

### Some technological breakthroughs made by Yanjing Brewery in 2022

#### Mixed fermentation technology

Yanjing Brewery has built a stable non-brewing yeast-based dual yeast co-fermentation system, developed EMA-qPCR rapid characterization technology used to monitor the dynamic changes of yeasts during the dual yeast co-fermentation process. Flavors of existing products have been improved and new product lines featuring special flavors are under development. Transcriptome studies have further shed light on the differential gene expression and interaction mechanism between non-brewing yeast and brewing yeast.

#### Flavor analysis technology

Using the modern gas chromatography-mass spectrometry-olfactometry (GC-MS-O) technique, Yanjing Brewery has thoroughly separated and identified hundreds of flavor compounds in beer. Aided by multi-gradient dilution and professional judges' tasting and appreciation, it has further vigorously explored the composition of flavor-active compounds in beer, studied how to balance between flavor and beer style and quality, analysed the interplay and synergy mechanism between various components, and shed light on the inherent factors that influence product quality. Such efforts underpin further in-depth research on product upgrading to deliver higher-quality products and experience to consumers.

#### Strain metabolism regulation technology

Yanjing Brewery conducted studies on the flavor metabolism regulation mechanism of beer yeasts for the precise regulation of beer flavor. The research on the regulation mechanism of the metabolism of low-yield ethanol in yeasts provides a theoretical basis for gene-based research on this topic. In addition, by leveraging the high-throughput targeted mutagenesis breeding technology, when the fermentation performance of the yeasts in Yanjing Original Weissbier remains unchanged, the higher alcohol content of the selected strain is reduced by 20-25%. Furthermore, the selected strain showed good genetic stability whereby product quality can be improved.

#### Consumer science technology

Yanjing Brewery has developed a mature beer consumer preference smart evaluation system (IAA) by integrating EEG (electroencephalogram) and FACS (facial action coding system), with a prediction accuracy rate of over 85%. In addition, it has developed an intelligent headset and a supporting integrated software with independent IPRs designed to test consumer preference, which can be adopted to gain market consumer insights and shorten the consumer research cycle.



## Cooperation for Development

At BEHL, we actively participate in industry-wide discussions and endeavors as we are committed to promoting the collaborative development across the industry. We share our experience and thoughts on industry development through industry-academia-research cooperation, alliance/organization forums, and industry standard preparation to empower industry-wide sustainable upgrade. In 2022, Beijing Gas participated in standard development for more fields and released 4 national standards related to scientific research project evaluation and 5 national standards on PE pipes and fittings. Yanjing Brewery has published 11 professional papers, participated in the publication, formulation, revision and feedback provision of 5 national standards of technology, and drafted and published 2 group standards of technology.



Yanjing Brewery published

**11** professional papers

### President of Beijing Gas took office as the President of the International Gas Union (IGU)

On May 27, 2022, Li Yalan, then President of Beijing Gas, was officially inaugurated as IGU President for the 2022-2025 term at the IGU Presidency Handover Ceremony of the 28th World Gas Congress (WGC2022) in Daegu, South Korea. Li Yalan delivered a speech and joined the discussion at the plenary meeting. In her speech, Li Yalan introduced the role of natural gas in Asia and beyond, as well as the measures that Asian countries had taken to achieve carbon neutrality and proposed relevant suggestions. In addition, Li Yalan shared the efforts and achievements of Beijing Gas on the way to carbon neutrality.



> The International Gas Union President Handover Ceremony

### BE Water adopted an innovative model featuring industrial-academic integration

Together with industry associations, backbone enterprises, higher education institutions and scientific research institutes, BE Water established the Eco-environmental Industry and Education Alliance in accordance with the principles of voluntariness, equality and win-win cooperation. The alliance aims at vigorously exploring the long-term mechanism of cooperation between enterprises and universities and creating an all-encompassing talent and value chain spanning “industry, education, research, application and creation”. In 2022, the alliance upgraded its website to the 3.0 version and effectively integrated resources with the focus placed on in-depth development. With the support of the alliance, the “BE Water” Cup China “Internet+” Eco-environmental Innovation and Entrepreneurship Competition and the High-tech Entrepreneurship and Investment Competition were held to vigorously scout innovations and quality startups in the eco-environmental field and cultivate the backbone entities of “mass entrepreneurship and innovation”.

### The Solid Waste Treatment Platform actively promotes industry cooperation projects

The Solid Waste Treatment Platform partners well with universities, research institutes, enterprises, and industry associations to share good practices. In 2022, it conducted technical exchanges with many universities and research institutes such as Zhejiang University and Tsinghua Institute of Internet Industry in macro policy, industry planning and outlook, emerging technology R&D, transformation, and application. The Solid Waste Treatment Platform shared experience in applying key technologies, including treating and disposing of sludge and organic solid waste in leftovers, using fly ash, AI-based SNCR (selective non catalytic reduction), polymer denitration, CCU (carbon capture and utilization), etc. It and E20 co-compiled influential industry standards such as *Quality Grading and “Fronrunner” Evaluation Criteria for Low-carbon Operation and Management of Waste Incineration Plants* and *Quality Grading and “Fronrunner” Evaluation Criteria; the Operation and Management of Waste Incineration Plants*.



Yanjing Brewery actively carries out external cooperation and exchanges to explore new frontiers of science and technology and expand its development. In 2022, Yanjing Brewery held academic exchange activities with universities and institutes such as China National Research Institute of Food & Fermentation Industries, Beijing Technology and Business University, Jiangnan University, Tsinghua University and the Chinese Academy of Sciences, and established 10 cooperation projects, two of which were evaluated and identified as internationally leading scientific and technological achievements in the industry. Out of consideration for its future development needs, Yanjing Brewery has been building various types of innovation platforms in line with the characteristics of its business. It has established

a postdoctoral workstation to build on basic research of beer brewing techniques and dive deeper, strengthening its scientific and technological prowess in the industry. It established an internship base with China Agricultural University, which boosts the company's profile and offers opportunities for hiring and being hired for the company and for the students respectively. Yanjing Brewery has also been an active presence in the research service activities organized for enterprises by the Science Association of Shunyi District, Beijing, to reach and tap a wider array of research institutions and seek more opportunities for partnerships that help enterprises involved apply research outcomes with greater success.

## Responsible Supply Chain

Setting its sights on shaping and creating a sustainable supply chain, BEHL implements quality management, regulates supplier management and helps suppliers improve performance across the entire supply chain with the goal of working together to offer stable and reliable products and services to its customers.

### Supplier Management

BEHL strictly abides by laws and regulations such as the *Civil Code of the People's Republic of China* and the *Law of the People's Republic of China on Tenders and Bids*. It standardizes the management measures in key steps such as procurement, supplier material management and supplier audit. The Company has formulated the *Supplier Management System*, which specifies the eligibility, daily management, audit and evaluation as well as the removal mechanism for suppliers to fully guarantee the supply quality and avoid supply risks.

The Company implements a tiered management of suppliers and separately assesses the goods quality, delivery progress, safety and environment of suppliers on a regular basis before evaluating and determining the performance score of suppliers. For key suppliers and high-sustainability risk suppliers, the Company conducts an annual sustainability risk assessment that covers business ethics, labour security and environmental protection, etc. Suppliers with unqualified scores are defined as high-sustainability risk suppliers and will be allocated to the pool of removed suppliers barred from procurement activities of BEHL.

The Company carries out annual supplier inspection and audit, which includes reviewing the name, management team, business premises, corporate qualifications and other information of suppliers and calculating suppliers' timely delivery rate, product quality qualification rate, product price change rate and after-sales service effectiveness ratio, etc. In 2022, Beijing Gas evaluated qualified suppliers of gas-specific supplies on multiple dimensions, including product quality, delivery time, service and price, and carried out irregular monitoring of the operation of qualified suppliers. Yanjing Brewery conducted thorough investigation on the current management status of commodities suppliers, drew up documents on new supplier management procedures, and updated the annual evaluation criteria for suppliers for centralized procurement. Based on the new procedures and criteria, Yanjing Brewery carried out the annual assessment of suppliers in its centralized procurement programs and thus produced a list of qualified suppliers for centralized procurement. BE Water prepared the Supplier Admission Review Form and updated the assessment dimensions for eligibility determination, which include ten major facets such as supplier's operation and management, product review, procurement management, quality management, technology R&D, service capability and ESG, with the weight assigned to ESG specified to be 5%.

As of the end of the Reporting Period, there were 90 qualified suppliers of gas-specific materials for Beijing Gas, all of which had obtained ISO 9001, ISO 14001 and ISO 45001 certification. For Yanjing Brewery, 390 suppliers obtained the ISO 9001 certification, 178 suppliers the ISO 14001 certification, and 100 suppliers the ISO 45001/OHSAS 18001 certification. For the Solid Waste Treatment Platform, 189 suppliers obtained the ISO 9001 certification, 171 suppliers the ISO 14001 certification, and 168 suppliers the ISO 45001/OHSAS 18001 certification.

In addition, BEHL has conducted classification management and risk assessment of key suppliers. In 2022, BEHL has 638 Tier 1 suppliers, including 143 key Tier 1 suppliers. In the past three years, BEHL has conducted risk assessment exercises for 100% of its Tier 1 suppliers.

## Sustainable Supplier Chain

BEHL actively practices green and responsible procurement. It has released the *Management Policy of Sustainable Supply Chain*, which puts forward ESG management initiatives and requirements for suppliers, provides detailed regulations on supplier classification, eligibility, and management guidelines, and clearly defines qualified suppliers and key suppliers. BEHL requires suppliers to comply with business ethics, value environmental protection, and protect and safeguard the legitimate rights and interests of their employees in the course of their operations.

For different business segments, BEHL has formulated corresponding internal systems, including the *Tendering and Bidding Management System*, *Procurement Control Manual* and *Contract Management Regulations*, which aim at incorporating the ESG performance of suppliers into the whole-process supply chain management. During the tendering process, the Company requires all bidders to sign an agreement of integrity, gives priority to suppliers who hold ISO 9001, ISO 14001, ISO 45001 and other ESG-related certifications and factors partnering suppliers' certifications into their performance evaluation. We factor environment-related performance into the consideration of supplier eligibility and encourage suppliers to choose recyclable packaging materials, energy-saving and environmentally friendly products. For instance, Yanjing Brewery laid out clear environmental protection and energy saving standards in the technical documents of equipment and material procurement for suppliers to refer to and act upon. BE Water set up environmental protection requirements as a threshold for suppliers of pharmaceutical raw materials, requiring them to provide supporting information on the use of environmental protection materials as the prerequisite for bid validity.

### BEHL supplier quantity and certification statistics



Total number of suppliers

2,129

Suppliers on Chinese mainland

2,078



ISO 9001-certified suppliers	669	
ISO 14001-certified suppliers	439	
ISO 45001/OHSAS 18001-certified suppliers	358	
Classification of key suppliers <sup>5</sup>	Tier 1 suppliers	638
	Key Tier 1 suppliers	143
Number of suppliers that have conducted risk assessment over the past three years <sup>6</sup>	Tier 1 suppliers	638
	Key Tier 1 Suppliers	143

Suppliers in Hong Kong, Macao and Taiwan and overseas

51

<sup>5</sup> The data does not include Yanjing Brewery.

<sup>6</sup> The data does not include Yanjing Brewery.

# Environment, Health and Safety

Placing the management of environment, health and safety at the core of its corporate operation, BEHL has been advancing the construction of an integrated HSE management system with BEHL's characteristics in an orderly manner. In adherence to the business tenet of green development and safe development, the Company vigorously carries out climate change response actions, preserves biodiversity and makes painstaking efforts to ensure workplace safety for protecting the health and safety of employees.

## Major progresses of the year

- The proportion of BEHL subsidiaries obtaining the ISO 14001 environmental management system certification was **75%**
- Beijing Gas set and met the annual resource usage target of “keeping the total amount of coal used below **7,335.69** tonnes of standard coal equivalent”
- Beijing Gas has accumulatively built **81** integrated energy projects with a total area of **20.44** million square meters in operation, reducing energy consumption by **54,000** tonnes of standard coal equivalent and carbon emissions by **134,000** tonnes for customers
- The proportion of BEHL subsidiaries obtaining the ISO 45001 occupational health and safety certification was **67%**



## Environmental Management

BEHL strictly follows the *Environmental Protection Law of the People's Republic of China*, the *Law of the People's Republic of China on Prevention and Control of Air Pollution*, the *Law of the People's Republic of China on Prevention and Control of Water Pollution*, the *Law of the People's Republic of China on Prevention and Control of Solid Waste Pollution*, and other relevant laws and regulations. It strictly requires each business segment to formulate environmental management systems according to its business characteristics and sticks to the approach of stepping up environmental management system certifications through building environmental management systems. BEHL set the target of incurring no major environmental penalties within the whole year. In 2022, Yanjing Brewery, the Solid Waste Treatment Platform, EEW GmbH, and BE Water passed the ISO 14001 environmental management system certification, elevating the proportion of BEHL subsidiaries obtaining the ISO 14001 certification to 75%<sup>7</sup>, and no environmental violation or penalty have occurred.

In adherence to the well-defined responsibility system for environmental protection, BEHL set up a department dedicated to safety and environmental protection and tasked it with environmental management in the daily operation to better clarify the environmental responsibilities of employees.

To get the environmental management system up and running, the Company carried out environmental factor assessment to spot existing major environmental factors and formulate rectification actions. In 2022, Yanjing Brewery carried out on-site audit of factories, thoroughly investigating environmental hazards and laying out rectification measures targeting existing hazards to reduce the probability of environmental incidents. The Solid Waste Treatment Platform has formulated environmental risk control measures and established a risk control information ledger to ensure clear responsibilities for the control.

<sup>7</sup> In the calculation of the percentage of BEHL subsidiaries obtaining the ISO 14001 certification, the weight assigned to Beijing Gas, BE Water, the environmental business segment and Yanjing Brewery is 25% respectively (with BE Environment, BE Environment Technology and EEW GmbH each accounting for 1/3 of the weight assigned to the environmental business segment).

### Environmental management policies of each business segment at BEHLA\*



#### Gas

- *Energy Management Policy and Energy Conservation and Environmental Protection Work System* were set forth to standardize energy management, improve the overall management of energy conservation and environmental protection, reduce unnecessary energy consumption and pollutants



#### Water

- Various environmental management systems were created, including the *Practices and Measures of Key Control Nodes in Traditional Water Construction Projects*, the *Design Regulations for Urban Sewage Treatment Projects*, and the *Environmental Index Evaluation System*, in accordance with the *National Quality Management System -Requirements (GB/T19001:2016)* and the *National Environmental Management Systems - Requirements with Guidance for Use (GB/T24001:2016)*



#### Environment

- A variety of regulations such as *Environmental Management Policy*, *Environmental Assessment Standards* and *Environmental Reward and Punishment Policy* have been formulated to ensure that responsibilities can be attributed to individuals with fair rewards and punishments



#### Beer

- *Beijing Yanjing Brewery Co., Ltd. Special Response Plan for Environmental Emergencies* and *Beijing Yanjing Brewery Co., Ltd. On-site Response Plan for Environmental Emergencies* were rolled out
- The *Emergency Response Plan for Environmental Emergencies of Beijing Yanjing Brewery Co., Ltd.* was formulated
- The certifications of GB/T24001-2016 / ISO14001:2015 environmental management system and GB/T23331-2020 / ISO 50001:2018 energy management system have been obtained
- An environmental protection and energy saving department was set up to guide and supervise each production department for clean production
- A centralized management platform and a joint inspection mechanism for exhaust gas and wastewater were established to improve the joint prevention and control system for environmental protection
- The *Environmental Protection Management System* was revised to add provisions on the disposal of hazardous waste and solid waste

## Green Operation

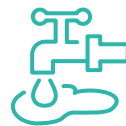
BEHL has implemented a proactive green and low-carbon operation mode, strengthened energy resource management, and continuously promoted green office practices. It is committed to reducing various pollutants and waste generated from corporate operations to achieve its sustainable development goals.

## Resource Utilization

BEHL places great emphasis on resource conservation and has adopted a performance-oriented resource management model that focuses on conserving, recovering, and recycling water resources and production consumables during its production and operations. We are dedicated to promoting fine management of resources and improving resource utilization efficiency. In 2022, Yanjing Brewery continued to promote resource conservation by implementing measures such as saving packaging materials in the production process, and formulated the *Management Operating Procedures for Packaging Materials Suppliers* to procure high-quality packaging materials from the source to reduce material losses. The company also launched a broken glass bottle recycling project with its subsidiaries to effectively recycle waste materials. In 2022, Yanjing Brewery used a total of 70,525.56 tonnes of packaging materials. The Solid Waste Treatment Platform also established a leading group for water conservation, clarified water conservation management responsibilities, leveraged water recycling processes, and reused treated wastewater for production.

**The Haidian Project of the Solid Waste Treatment Platform launched a wastewater reuse equipment project**

In 2022, the Haidian Project of the Solid Waste Treatment Platform focused on promoting the application of production wastewater treatment and reuse facilities. The project ensures that after treatment, the wastewater meets the required standards and can be reused in production. As a result, the consumption of purchased water was significantly reduced without any sewage discharge. Throughout the year, the Haidian Project saved a total of 76,188 tonnes of purchased water.



Saved a total of **76,188** tonnes of purchased water in 2022

### Water Conservation Measures Adopted by Yanjing Brewery in 2022



The Beijing plant of Yanjing Brewery conducted major inspections of the water supply pipes in the production system and fire-fighting water pipes in all production workshops to eliminate dripping and leakage



The Hebei plant of Yanjing Brewery implemented a reclaimed water recycling technology improvement project, which has increased the weekly consumption of reclaimed water from 2,000 tonnes to about 6,000 tonnes



The Guilin Liqian plant of Yanjing Brewery launched a condensate recycling project. After its completion, steam consumption has been reduced from 306.99 Kg/KL to 288.09 Kg/KL, saving RMB 3,698,300

## Energy Use

BEHL strictly adheres to the *Energy Conservation Law of the People's Republic of China* and other laws and regulations, and requires each business segment to develop management systems related to energy conservation. The Company sets targets to guide the orderly implementation of energy conservation efforts. In 2022, Beijing Gas recorded an actual energy consumption of 7,171.16 tonnes of standard coal, achieved its annual resource usage target of "keeping the total energy consumption below 7,335.69 tonnes of standard coal".

### Energy conservation and consumption reduction of each BEHL business segment



#### Gas

- Beijing Gas has formulated the *Energy Conservation and Environmental Protection Work System*, which requires prioritization of clean energy in daily life, production and construction and the adoption of processes with high resource utilization efficiency and low pollutant emissions or discharges;
- Beijing Gas established a smart energy management platform and a regional multi-energy-coupling energy network, spearheading the green and low-carbon and circular development;
- China Gas built a coal-to-gas control system and enhanced its technical expertise in natural gas storage and transportation.



#### Water

- Formulated standard procedures such as the *Procedures for Project Operation Control* and the *Procedures for Performance Monitoring and Control* to continuously optimize energy and resource consumption.
- Conducted low-carbon operations from the aspects of production energy saving, energy substitution and recycling, and continuously increase investment in operation energy-saving technology transformation.



#### Environment

- Each project company established a leading group for energy conservation and incorporated energy conservation into its important agendas.



#### Beer

- Established a functional department dedicated to environmental protection and promoted the construction of a green manufacturing system; carried out energy consumption benchmarking and continued to study energy consumption and utilization to spot areas with potential for further energy saving;
- Implemented an energy-saving KPI management mechanism and promoted the energy-saving target responsibility system;
- Strictly followed the principles of reduction, reuse and recycling, and launched a special CO<sub>2</sub> recycling program;
- Further improved the energy metering system and the Energy Management System (EMS), and enhanced the level of refined management.

**The Changde Project of the Solid Waste Treatment Platform completed the optimization of its fluidized incinerators**

In 2022, the Changde Project of the Solid Waste Treatment Platform renovated its fluidized bed waste incinerators through high-tech research and development. This, combined with various management initiatives such as strengthened personnel training and optimized combustion, has significantly reduced the proportion of coal used in the upgraded incinerators and lowered raw coal consumption by about 38,000 tonnes. These efforts are expected to reduce CO<sub>2</sub> emissions by around 53,035 tonnes throughout a year.



Lower raw coal consumption by about

**38,000** tonnes

These efforts are expected to reduce CO<sub>2</sub> emissions by around

**53,035** tonnes throughout a year

**Yanjing Brewery promoted the electrification of its construction machinery and equipment**

In 2022, some plants of Yanjing Brewery carry out the transformation of construction machinery and equipment electrification, replacing diesel forklifts with electric forklifts. This move led to a reduction in diesel consumption by 71,000 liters and CO<sub>2</sub> emissions by about 188.21 tonnes throughout the year.



Led to a reduction in diesel consumption by

**71,000** liters

Reduction in CO<sub>2</sub> emissions by about

**188.21** tonnes throughout the year



> A new electric forklift



## Major Resources and Energy Utilization by BEHL Business Segments

Indicators	Unit	2021	2022
<b>Gas<sup>8</sup></b>			
Purchased electricity	10,000 kWh	1,688.2	1,603.6
Purchased steam for heating	GJ	44,794.2	32,844.9
Natural gas usage	10,000 cubic meters	248.8	240.5
Liquefied petroleum gas usage	Tonnes	2.1	-
Gasoline usage	KL	813.3	777.2
Diesel usage	KL	48.9	43.3
Fresh water consumption	10,000 tonnes	23.5	23.5
<b>Water</b>			
Purchased electricity	10,000 kWh	169,898.0	191,288.3
Purchased steam for heating	GJ	10,005.0	4,748.0
Natural gas usage	10,000 cubic meters	201.9	154.6
Gasoline usage	Tonnes	581.0	767.0
Diesel usage	Tonnes	782.0	1,638.0
Fresh water consumption	10,000 tonnes	461.2	460.5
<b>Environment<sup>9</sup></b>			
Purchased electricity	10,000 kWh	2,528.7	4,176.0
Purchased industrial steam	Tonnes	-	-
Natural gas usage	10,000 cubic meters	1,839.5	1,405.9
Liquefied petroleum gas usage	Tonnes	47.6	14.6
Coal consumption	Tonnes	34,002.8	19,030.8
Gasoline usage	KL	3.9	57.4
Diesel usage	KL	27.1	65.8
Fresh water consumption	10,000 tonnes	352.6	402.8

Indicators	Unit	2021	2022
<b>Beer</b>			
Purchased electricity	10,000 kWh	33,643.2	35,926.2
Purchased industrial steam	Tonnes	266,903.9	378,981.9
Natural gas usage	10,000 cubic meters	12,137.5	11,987.9
Coal consumption	10,000 tonnes	6.0	4.2
Gasoline usage	KL	1,180.4	1,312.7
Diesel usage	KL	90.5	1,831.1
Fresh water consumption	10,000 tonnes	2,084.2	1,361.6

## Total Energy Consumption of BEHL Business Segments in 2021-2022 (tonnes of standard coal equivalent)<sup>10</sup>

Segment	2021	2022
Gas	7,842.6	7,171.2
Water	214,414.0	241,187.0
Environment	62,257.9	47,088.6
Beer	280,555.0	282,121.4

<sup>8</sup> All gas-related data in the "Environment, Health and Safety" section covers only Beijing Gas.

<sup>9</sup> Environmental business data covers BE Environment, BE Environment Technology, and EEW GmbH. Fresh water consumption statistics do not include EEW GmbH.

<sup>10</sup> The comprehensive energy consumption was calculated according to the *General Principles for Calculation of the Comprehensive Energy Consumption (GB/T2589 2020)*.



## Emission Reduction and Pollution Control

BEHL always adheres to the principle of source management and sticks to emission and discharge compliance, and makes every effort to reduce all kinds of waste and pollutants generated from its production and operation. BEHL strictly follows the *Law of the People's Republic of China on Prevention and Control of Air Pollution*, the *Law of the People's Republic of China on Prevention and Control of Water Pollution*, the *Law of the People's Republic of China on Prevention and Control of Solid Waste Pollution*, and other relevant laws and regulations. Each business segment has established its management system related to emission reduction and pollution control to ensure stable operations of pollutant treatment facilities and proper disposal of various types of waste.

In 2022, BEHL continuously encourages each business segment to set pollutant reduction targets and strengthened the implementation of initiatives to reduce wastewater, exhaust gas, and solid waste.

### "Three Wastes" Treatment and Management in BEHL Business Segments



#### Gas

- Signed the *Guiding Principles on Reducing Methane Emissions across the Natural Gas Value Chain*;
- Continuously counted and calculated air pollutants with methane emissions as the main component.



#### Water

- Strictly abided by relevant national and local standards such as the *Discharge Standards of Pollutants for Municipal Wastewater Treatment Plants* (GB18918-2002), implemented strict operational emission management, and controlled five kinds of pollution: atmospheric pollution, water pollution, noise pollution, light pollution, and solid waste;
- Formulated internal management regulations such as the *Guidebook for Safe and Civilized Construction of Urban Water Projects* and the *Manual of BE Water for Civilized Construction*, and set up working groups of construction project emission reduction to strictly control the discharge of various pollutants.



#### Environment

- Worked in accordance with laws and regulations including the *Standards for Pollution Control of the Municipal Solid Waste Incineration* (GB18485-2014), the *Pollution Control Standards for Hazardous Waste Incineration* (GB18484-2001), and EU 2000/76/EC & 2010/75/EC, conducted online monitoring of the exhaust gas generated during operations and connected it with the environmental protection department in real time, and continuously upgraded the flue gas purification process and equipment to reduce the concentration of pollutants in the flue gas;
- Exhaust gas is mainly the waste gas (dioxin, carbon monoxide, nitrogen oxides, sulfur dioxide, soot, hydrogen chloride, etc.) generated during domestic waste incineration, which is discharged up to the standard after treatment. Among them, fly ash is transferred to the domestic waste landfill after being chelated and solidified in the fly ash solidification workshop and stabilized for 3 days. Part of the raw ash is transferred by qualified third-party institutions to cement kilns for co-processing;



- Wastewater is mainly the leachate and sewage generated from the accumulation of domestic waste and is reused after collection and treatment by the sewage treatment station;
- General wastes are mainly sludge and kitchen waste, which is treated through incineration; hazardous wastes are mainly fly ash from domestic waste incineration, waste engine oil, waste catalyst and laboratory waste liquid, etc., which are entrusted to qualified third-party institutions for treatment;
- Established and optimized the standardized management ledger of hazardous waste, implemented dynamic monitoring of hazardous waste and systematic management of hazardous waste generation, transfer and disposal, and achieved full coverage of standardized management of hazardous waste in all project companies.



### Beer

- Established a centralized control platform for exhaust gas and wastewater in line with industry standards such as the *Clean Production Standards for Brewing Industry* and the *Discharge Standards for Pollutants of Beer Industry* (GB 19821-2005) to ensure that all indicators meet the standards; strengthened the control of pollutant discharge and improved wastewater treatment capacity.



### Yanjing Brewery refines waste diatomaceous earth recycling

In 2022, Yanjing Brewery refined its waste diatomaceous earth recycling methods by changing the original diatomaceous earth reception from "open storage" to "closed storage in cans", effectively reducing odours and dust and reducing environmental hazards.

### New equipment installed to reduce noise pollution at the Wuhan project of the Solid Waste Treatment Platform

By installing a new technology fan-less extraction torch, the Wuhan project of the Solid Waste Treatment Platform has reduced the noise level of the plant boundary at night when the torch is in operation from 55 dB to within 30 dB, effectively eliminating the hidden danger of noise exceeding the standard in the plant. In addition, the newly installed equipment has the characteristics of energy saving, achieving a daily saving of 180 kWh, an annual saving of 65,700 kWh and an annual CO<sub>2</sub> emission reduction of approximately 34.47 tonnes.



Achieving a daily saving of

**180** kWh

An annual saving of

**65,700** kWh



An annual CO<sub>2</sub> emission reduction of approximately

**34.47** tonnes



> The replaced new technology fan-less extraction torch



> Waste diatomaceous earth recycling equipment

### Waste Discharge of BEHL's Business Segments in 2021-2022

Indicators		Unit	2021	2022
<b>Gas</b>				
Hazardous solid waste	Waste filter elements, etc.	Tonnes	15.0	10.6
Non-hazardous solid waste	Waste soil and stone, etc.	10,000 tonnes	12.1	5.1
<b>Water</b>				
Wastewater	Effluent wastewater	10,000 tonnes	-	-
Exhaust gas	Nitrogen oxides	Tonnes	305.0	337.0
	Sulfur dioxide	Tonnes	37.0	48.0
Hazardous solid waste	Hazardous waste generated by sewage treatment process, etc.	Tonnes	199.0	328.0
Non-hazardous solid waste	Sludge, etc.	10,000 tonnes	255.6	273.5
<b>Environment<sup>11</sup></b>				
Wastewater	Effluent wastewater	10,000 tonnes	111.8	158.6
	COD	Tonnes	10.4	52.1
	Ammonia nitrogen	Tonnes	1.1	1.7
Exhaust gas	Exhaust gas	Million cubic meters	16,133.7	15,550.0
	Nitrogen oxides	Tonnes	2,938.8	3,037.3
	Sulfur dioxide	Tonnes	363.5	570.9
	Dioxin	Milligram	290.7	330.9
	Soot	Tonnes	84.4	94.9
Hazardous solid waste	Fly ash, etc.	10,000 tonnes	52.8	44.3
Non-hazardous solid waste	Slag, etc.	10,000 tonnes	273.0	503.8

Indicators		Unit	2021	2022
<b>Beer</b>				
Wastewater	Effluent wastewater	10,000 tonnes	1,398.4	1,412.2
	COD	Tonnes	581.4	618.9
	Ammonia nitrogen	Tonnes	30.4	20.5
	Total phosphorus	Tonnes	43.4	36.1
Exhaust gas	Exhaust gas	Million cubic meters	2,313.4	5,400.3
	Nitrogen oxides	Tonnes	259.0	142.1
	Sulfur dioxide	Tonnes	197.0	79.0
Hazardous solid waste	Waste lubricating oil, etc.	Tonnes	413.3	128.1
Non-hazardous solid waste	Waste glass	10,000 tonnes	5.1	5.0
	Waste wheat grains, waste hops, coagulum and waste yeast, etc.	10,000 tonnes	18.7	41.2

<sup>11</sup> Data related to the environmental business covers BE Environment, BE Environment Technology and EEW GmbH, but the wastewater and exhaust gas indicators do not include EEW GmbH.

## Green Office

BEHL also vigorously advocates for and advances green and low-carbon office. To that end, it formulated the *Regulations for the Management of Company Vehicles and Drivers (Trial)*, the *Management Measures for Video Conference Systems*, and the *Regulations for the Management of Local Area Networks and Office Automation Systems*. Each business segment is required to attend to the specific matters around: adopting green behaviors such as water saving, electricity saving, paperless office and green travel in daily work settings, thereby contributing to low-carbon development with concrete action. At the same time, the Company continues to carry out various publicity activities around the themes of resource and energy conservation to foster a more favorable atmosphere for green operation.

### Green Office Measures of BEHL



#### Electricity conservation

- Strengthening the management of electrical equipment to avoid unduly long standby
- Replacing existing bulbs with energy-saving ones and using more energy-efficient office equipment
- Using acousto-optic switches in production and office areas to avoid electricity waste
- Controlling air conditioning time and setting the temperature range for air conditioning use in winter and summer respectively



#### Water conservation

- Strengthening the regular maintenance of water-using equipment, posting water-saving signs, and advocating multi-purpose use of water



#### Consumption reduction

- Implementing paperless processes in offices
- Collective procurement of office supplies in uniform specifications to reduce replacement and maintenance loss
- Unified management of company vehicles, reduction of unnecessary trips
- Encouraging the use of public transportation services to reduce personal vehicle use
- Gradual switch to new energy vehicles

### Beijing Gas carried out energy conservation and low-carbon publicity activities

In 2022, Beijing Gas stepped up publicity on energy conservation by launching the “Energy Conservation Publicity Week” and “National Low-Carbon Day” activities, which involved a quiz on conservation and environmental protection, the publicity film for the Energy Conservation Publicity Week and other items, and a total of 3,800 employees took part in the quiz. The wide reach of the activity significantly boosted employees’ awareness of energy conservation.



The total participant of quiz reached  
**3,800** employees



> The 2022 Energy Conservation Publicity Week of Beijing Gas

### The Beijing factory of Yanjing Brewery hosted Water Conservation Publicity Week

In October, the Beijing factory of Yanjing Brewery carried out the Water Conservation Publicity Week themed “building water-saving cities and promoting green development”. During the event, the factory encouraged employees to fill out the questionnaire and altogether 3,104 employees did, registering a 100% participation rate. The activity was a great success as it boosted the resource conservation awareness of factory workers across the board.



> Publicity materials prepared by the Beijing factory of Yanjing Brewery

> Hand-drawn posters created by employees

### Main Environmental Data of BEHL Headquarters Offices 2021-2022<sup>12</sup>

Indicators	Unit	2021	2022
Electronic waste	Kg	160.0	-
Office paper usage	Tonnes	2.4	2.2
Purchased electricity	10,000 kWh	22.9	22.4
Gasoline usage	KL	19.6	15.9
Fresh water consumption	Tonnes	582.0	647.0
Comprehensive energy consumption	Tonnes of standard coal equivalent	16.4	44.4
Greenhouse gas emission	Tonnes of carbon dioxide equivalent	176.1	162.7

<sup>12</sup> The statistics of the office buildings cover the Hong Kong headquarters office and the Beijing headquarters office. The calculation method of greenhouse gas emissions is consistent with the calculation method of Beijing Gas and the environmental business.

# Response to Climate Change

Climate change has become a common challenge for mankind, hence the urgency of taking action to mitigate climate change. BEHL supports global climate action, and we, in accordance with the framework and recommendations of the Task Force on Climate-related Financial Disclosure (TCFD), disclosed information on our climate change governance system, response strategies, risk management, indicators and targets.

## Governance

BEHL views climate change risks as an important concern. On the basis of its sustainable development system, BEHL has established a climate change governance system that involves the Board of Directors, which structurally has three layers for strategy planning, organization and coordination, and execution respectively, to decide on and implement climate change-related matters of BEHL. In 2022, BEHL formulated the *Policy of Climate Change Response*, which further refines the governance of climate change issues by making commitments in three dimensions: mitigation, adaptation, and capacity building for adaptation.










## Climate Change Risk Governance System of BEHL<sup>13</sup>

Layer	Units in charge	Responsibilities
Governance layer	The Board of Directors	<ul style="list-style-type: none"> <li>The highest decision-making body for BEHL's climate change work, responsible for approving climate change-matters such as policies, strategies, targets, work planning and risk assessment results and keeping the sustainability work of the Company overall in line with the business strategies of the Company</li> </ul>
Management layer	Sustainable Development Committee	<ul style="list-style-type: none"> <li>The unit in BEHL shouldering primary responsibilities for climate change work, mainly tasked with reviewing the Company's climate change strategies, understanding and assessing the potential impact of climate change risks, deliberating on management of climate change risks and making decisions in daily operation</li> </ul>
Execution layer	Sustainable Development Working Group  Focal points of sustainable development from departments and offices of the headquarters and the sustainable development working group of subsidiaries	<ul style="list-style-type: none"> <li>Responsible for the organization, implementation and coordination of the climate change work plan, regularly monitoring initiatives against climate change risks and risk changes, and reporting to the Board of Directors</li> <li>Responsible for the day-to-day management and implementation of climate change work, and facilitating all functional departments and subsidiaries to identify climate change risks and take countermeasures</li> </ul>

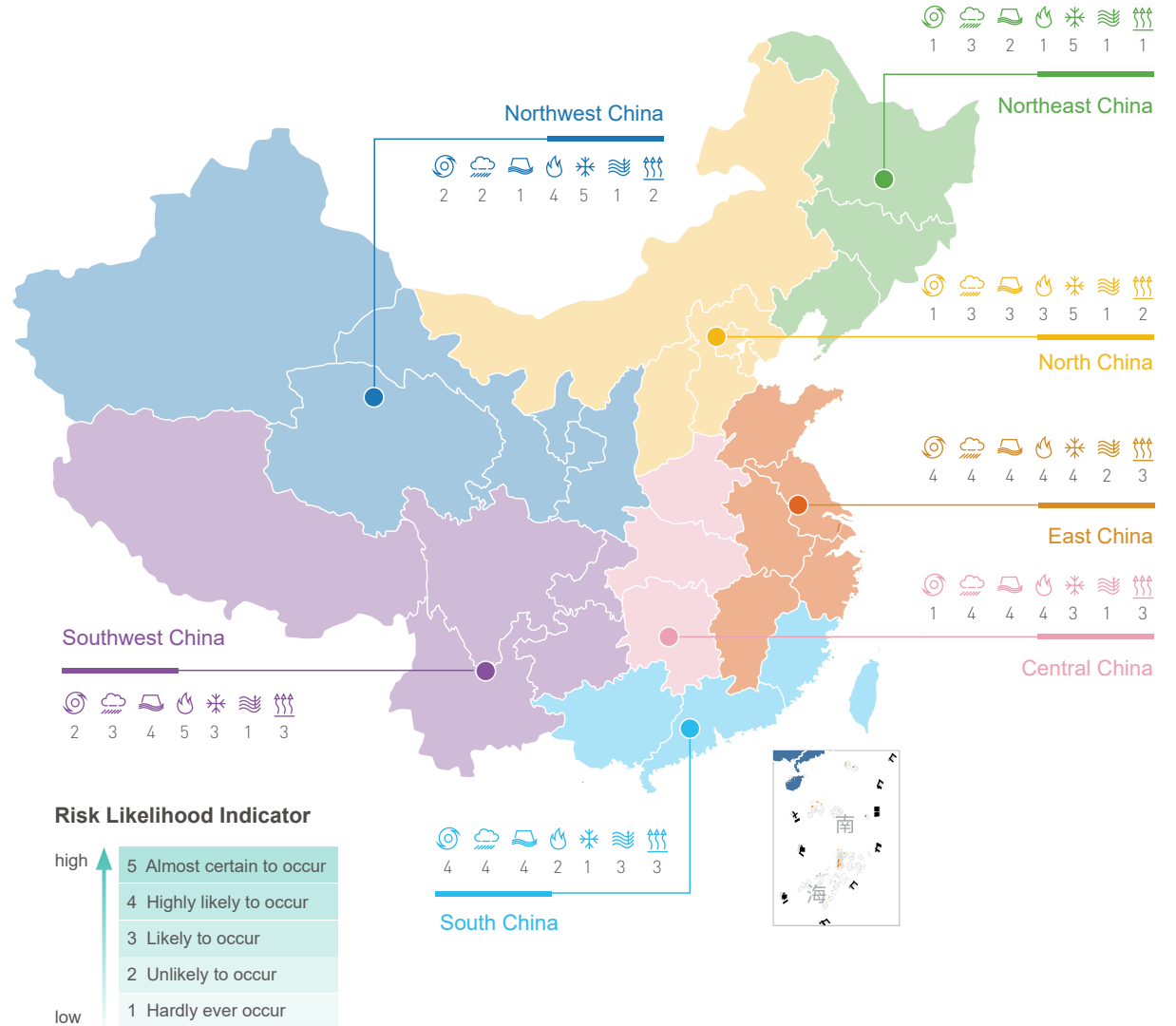
<sup>13</sup> The Climate change risk governance system of BEHL was revised in 2022.

## Response Strategies

Based on the natural ecology, socioeconomic circumstances and other facets of the macro environment of its operation, BEHL has identified and analysed the two types of potential risks of climate change, namely physical risks and transition risks, and developed countermeasures and strategies based on its own conditions for the identified risks to improve its resilience. In addition, we identified the degree of impact of seven kinds of physical risks and drew a map of BEHL's business distribution on which the physical risks for each business region and their relevance are marked.

-  Typhoon
-  Extreme cold
-  Extreme precipitation
-  Rising sea levels
-  Flood
-  Global warming
-  Extreme heat

## Relevance of Each Physical Risk for Each BEHL Business Region



### Risk Likelihood Indicator






high	5 Almost certain to occur
	4 Highly likely to occur
	3 Likely to occur
	2 Unlikely to occur
low	1 Hardly ever occur

### Climate Change Risks Identified and Response Strategies of BEHL

Risk category	Risks	Response Strategies	
Acute risks	Extreme precipitation/flood	<ul style="list-style-type: none"> <li>The cost of repairing or replacing damaged or destroyed equipment</li> <li>Safety risks to customers, employees and the public</li> </ul>	<ul style="list-style-type: none"> <li>To strictly implement the shutdown and evacuation system in extreme weather and the system of assigning staff on duty in the flood season</li> <li>To make emergency plans for extreme precipitation</li> </ul>
	Extreme heat	<ul style="list-style-type: none"> <li>Greater safety risks for workers working outdoors</li> <li>Higher maintenance cost of gas supply equipment and higher operating cost of ventilation equipment in stations</li> </ul>	<ul style="list-style-type: none"> <li>To skip high-temperature periods when making work schedule</li> <li>To carry out equipment safety patrol and inspection</li> <li>To make an emergency plan for heat stroke</li> </ul>
	Extreme cold	<ul style="list-style-type: none"> <li>Fluctuation of natural gas demand affects its supply stability</li> <li>Greater damage and loss of gas supply pipeline facilities and greater safety risks of workers working outdoors</li> </ul>	<ul style="list-style-type: none"> <li>To strictly implement various safety precautions against snow and icy roads and take emergency measures in time</li> <li>To carry out daily equipment safety patrol and inspection</li> </ul>
	Typhoon	<ul style="list-style-type: none"> <li>Greater cost of building design and building materials to cope with strong winds</li> <li>Damage and loss of equipment and greater safety risks to customers, employees and the public</li> </ul>	<ul style="list-style-type: none"> <li>To continue to improve the typhoon emergency plan</li> <li>To actively cooperate with meteorological departments and pay attention to typhoon progress in real time</li> </ul>
Chronic risks	Sea level rise	<ul style="list-style-type: none"> <li>The migration of investment and commercial activities to inland regions, and the impact on the existing market</li> <li>The need to consider the impact of sea level rise for site selection and design of new projects</li> </ul>	<ul style="list-style-type: none"> <li>To regularly monitor the sea level rise over the long term, study the product transportation and export routes to reduce the impact caused by the interruption of logistics routes</li> </ul>
	Global warming	<ul style="list-style-type: none"> <li>Global warming may reduce the gas consumption of customers and increase the maintenance cost of gas supply facilities</li> </ul>	<ul style="list-style-type: none"> <li>To include climate risk factors into future project construction and equipment procurement considerations</li> </ul>
Policy risk	Energy mix risk	<ul style="list-style-type: none"> <li>China and the European Union introduced a package of energy policies, which may affect the energy use mix of BEHL, resulting in increased operating costs and compliance risks</li> </ul>	<ul style="list-style-type: none"> <li>To formulate carbon-neutrality planning and path, and publicly publish policies related to low-carbon management</li> <li>To use more renewable energy</li> </ul>
	Environmental disclosure compliance risk	<ul style="list-style-type: none"> <li>The international or local regulatory authorities, and capital market rating guidelines, among others, all pay more attention to corporate efforts to cope with climate change or their carbon emission reduction</li> </ul>	<ul style="list-style-type: none"> <li>To disclose environmental information according to compliance requirements</li> <li>To conduct assessment of climate change risks and opportunities</li> </ul>
Technology risk	Low-carbon equipment transformation and improvement cost risk	<ul style="list-style-type: none"> <li>The promotion of carbon emission reduction targets will require low-carbon upgrading and transformation of production equipment, which will lead to an increase in R&amp;D cost and investment cost</li> </ul>	<ul style="list-style-type: none"> <li>To actively follow the latest progress of low-carbon technology</li> <li>To strengthen the R&amp;D or introduction of energy-saving and emission-reducing equipment</li> </ul>
Legal risk	Pollutant discharge compliance risk	<ul style="list-style-type: none"> <li>The increasingly strict environmental regulation and emission standards will add to the compliance cost of enterprises</li> </ul>	<ul style="list-style-type: none"> <li>To constantly follow the legal content related to climate change and adjust the operation plan</li> </ul>
Market risk	Demand and supply risk of natural gas	<ul style="list-style-type: none"> <li>Natural gas business may embrace market opportunities, which will lead to gas supply fluctuations and equipment upgrading</li> </ul>	<ul style="list-style-type: none"> <li>To carry out short-, medium- and long-term forecast of natural gas business, and make relevant moves and preparations in advance</li> </ul>
	Cost risk of solid waste treatment	<ul style="list-style-type: none"> <li>With the increasing demand for solid waste treatment and ecological restoration in China, the environmental business, water business and other business operations will be influenced</li> </ul>	<ul style="list-style-type: none"> <li>To improve the ecological environment protection in related business operations</li> </ul>
Reputation risk	Risk of stakeholder communication	<ul style="list-style-type: none"> <li>The Company's performance in environmental protection and carbon emission reduction may not meet the expectations of stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>To strengthen communication with stakeholders and adjust environmental protection and carbon emission reduction measures</li> </ul>



### Climate Change Opportunities Identification of BEHL

	Opportunities	Description
	<p>» <b>Production process energy efficiency opportunity</b></p>	<ul style="list-style-type: none"> <li>By improving resource and energy efficiency in production, distribution, buildings, equipment and transportation, we can reduce operating costs</li> </ul>
	<p>» <b>Natural gas supply opportunity</b></p> <hr/> <p><b>Opportunity for the transition to renewable energy</b></p>	<ul style="list-style-type: none"> <li>As the most important product of the gas segment under BEHL, natural gas is the cleanest fossil fuel and has created environmental benefits in terms of air quality and greenhouse gas emissions</li> <li>In terms of energy use, the transition to low-emission energy (renewable energy) is a great transition opportunity that we need to consider</li> </ul>
	<p>» <b>Product carbon footprint opportunity</b></p>	<ul style="list-style-type: none"> <li>Creating and developing new low-emission products and services help us better meet the needs of customers and the market</li> </ul>
	<p>» <b>New business opportunity</b></p>	<ul style="list-style-type: none"> <li>Actively seeking new markets or new assets will help us diversify our business activities and make them more competitive amid the transition to low-carbon economy</li> <li>With the release of documents such as <i>Catalogue of Green Bond Endorsed Projects (2021 Edition)</i> and the gradual improvement of the green financing system, energy conservation, environmental protection and clean production-related industries will receive more financial support. We may, with the aid of green financing tools such as green bonds, improve the resilience of our capital chain</li> </ul>
	<p>» <b>Adaptability opportunity</b></p>	<ul style="list-style-type: none"> <li>By improving efficiency and developing new products, we can provide more products and services with lower carbon footprint to downstream enterprises to satisfy and adapt to their needs, thereby better managing climate change-related risks and seizing opportunities</li> </ul>

## Risk Management

BEHL incorporates climate change risks into its risk management system and coordinates risk management based on the integrated risk management framework. Thanks to the identification, assessment and management of climate change risks throughout the process, we are in a better position to resist climate change risks and ensure sustainable and stable operations.

### Climate Risk Management Process of BEHL



- BEHL, based on national policies and regulations, the Listing Rules and its current operation, organizes all departments and subsidiaries to carry out regular identification of climate change risks.
- During the process of making assessments and identifying material issues, we communicate with stakeholders on climate change issues to understand the degree to which each stakeholder is concerned about different climate change risks.

- We holistically determine the impact of an identified climate risk on BEHL by considering both the likelihood of the risk and the severity of its impact, and form a final climate change risk list.
- The climate change risk list is approved by the Board of Directors of the Company and serves as the main basis for BEHL's climate change work.

- Based on the climate change risk list, BEHL formulates action plans and defence mechanisms against risk changes, and regularly carries out monitoring, analysis, pre-warning and reporting for the actions.

In 2022, to address the lack of clarity about risk exposure of urban gas pipeline networks in extreme weather and other current issues, Beijing Gas conducted a pre-research project "Research on Key Risk Factors and Trend Analysis Methods for Urban Gas Pipeline Networks in Extreme Weather". Through this project, Beijing Gas collected cases of damage to gas pipeline network in extreme weather, gleaned information about the specifics of damage, existing risks and key risk factors, learned about the methods of evaluating risk trends, and conducted a feasibility study of those methods. This research project went a long way towards helping enterprises build a climate change risk response framework.

## Indicators and Goals

BEHL continuously pays attention to and tracks its own CO<sub>2</sub> emissions, and regularly discloses greenhouse gas emission data for the past three years in our ESG reports. We will continue to reduce our emissions of carbon dioxide, methane, and other greenhouse gases, striving to minimize our impact on the climate.

**Total Greenhouse Gas Emissions of Each Business Segment of BEHL in 2022 (tonnes of carbon dioxide equivalent)<sup>14</sup>**

	Scope 1	Scope 2	Total
Gas	7,027.7	12,758.0	19,785.7
Water	11,448.8	1,101,225.5	1,112,674.3
Environment	95,203.4	23,815.8	119,019.2
Beer	482,609.0	270,496.0	753,105.0

<sup>14</sup> Scope 1 greenhouse gas emissions are converted from gasoline, diesel, natural gas, liquefied petroleum gas, raw coal, and residual oil. Scope 2 greenhouse gas emissions are converted from purchased electricity, purchased heat and purchased industrial steam. The accounting methods and coefficients are based on the greenhouse gas emission accounting methods and reporting guidelines for 24 industries issued by the National Development and Reform Commission; the basis for Beijing Gas and the environmental business specifically is the *Guidelines on Greenhouse Gas Emissions Accounting and Reporting for Enterprises in Other Industries (Trial)* and that for Yanjing Brewery specifically is the *Guidelines on Greenhouse Gas Emissions Accounting and Reporting for Food, Tobacco and Alcohol, Beverages and Refined Tea Enterprises (Trial)*. Purchased electricity is converted based on the national grid emission factors specified in the *Notice on Properly Carrying out Key Tasks Related to Management of Enterprise Greenhouse Gas Emissions Reporting in 2022* issued by the Ministry of Ecology and Environment of China. Please note that the water business is not included in the consolidated statistics of BEHL.

Based on the BEHL development strategy, historical environmental data and other information, BEHL continues to promote the formulation and implementation of medium- and long-term environmental targets for the Company and its subsidiaries to better guide its low-carbon development path. Beijing Gas already set methane emission reduction targets over the medium and long term in line with its actual conditions. EEW GmbH has also set its greenhouse gas emission target, which is the achievement of climate neutral operations by 2030.

### Methane emission target

Beijing Gas will take stronger measures and strive to reduce methane emission intensity

to less than **0.12%** by 2025

and reduce the emission intensity to

**nearly zero** by 2030

### EEW GmbH's Greenhouse Gas Emission Target

Achieve **climate-neutral** operations by 2030

## Actions

In 2022, BEHL continued to control methane emission, promote integrated energy services, further accelerated the implementation of renewable energy projects, and took various practical measures to contribute to the goal of "carbon peaking by 2030 and carbon neutrality by 2060".

## ► Methane Emission Control

Methane is the second largest greenhouse gas contributor to global warming, and methane emission control is an important part of BEHL's efforts to actively address climate change and reduce greenhouse gas emissions. As a major methane emitter under BEHL, Beijing Gas has been taking various methane emission control actions for years.

### 🎯 Beijing Gas reduces methane emissions together with other players across the industrial chain

Beijing Gas is a pioneer of methane emission reduction in the urban gas industry and is the first downstream gas company in China to have carried out methane emission reduction. Over the years, Beijing Gas has been an active presence in global methane emission reduction cooperation and initiatives:

Beijing Gas signed Methane Guiding Principles (MGP), part of wider efforts of the global energy industry to tackle climate change. That Beijing Gas is the first gas company in Asia to join this initiative speaks volumes about its role as a bridge that facilitates exchanges of methane emission reduction technologies and experience with the international community.

Beijing Gas joined the China Oil and Gas Methane Alliance as its founding member. Beijing Gas will take a series of actions in cooperation with enterprises across the whole industry chain to improve methane emission reduction efforts across the board and make methane monitoring and measurement more systemic, regular and standardized and up to international standards as well.



> Beijing Gas and other domestic oil and gas peers jointly initiated the China Oil and Gas Methane Alliance

2018

2020

May 2021

October 2021

March 2023

Beijing Gas, together with Woodside Energy Group and the China Gas Association (CGA), co-hosted the "Seminar on Methane Reduction under the MGP Framework" to actively promote the implementation of methane reduction work in China.



> Seminar on Methane Reduction under the MGP Framework

A seminar on Methane Emission Reduction for Carbon-Neutral Urban Gas was held in Zhengzhou. With the support of Beijing Gas, ten Chinese urban gas enterprises signed the Methane Emission Reduction Initiative for Chinese Urban Gas Enterprises, marking an important and substantial step forward for Chinese urban gas enterprises in this regard.



> signing ceremony of Methane Emission Reduction Initiative for Chinese Urban Gas Enterprises

A seminar on "Methane Emission Reduction for Safe Operation of Urban Gas Enterprises" was held in Hangzhou. The seminar dived into how the urban gas industry could leverage methane emission reduction efforts to achieve safe operation in the context of carbon neutrality, and how to strike a balance between economy, safety and sustainable development. It was hoped that this would be an opportunity to promote methane emission reduction and its effective integration with safe operation in urban gas enterprises.

## ► Integrated Energy Solutions

Beijing Gas, as an energy supply subsidiary under BEHL, proactively invests in various integrated energy projects with its gas business as a basis, and gives full play to its technological expertise in the integrated use of natural gas energy. The company integrates various new energy technologies and maximizes the efficiency of renewable energy to provide customers with cooling, heating and power supply services, ensure unified energy scheduling and management across the region, and efficiently contribute to the restructuring of the energy industry. As of December 31, 2022, Beijing Gas had launched 81 integrated energy projects, covering an area of 20.44 million square meters. The company managed to reduce energy consumption by 54,000 tonnes of standard coal and carbon emissions by 134,000 tonnes for its customers in 2022.

### 📍 Beijing Gas invested in an integrated energy project in West District I, Fengtai Park of Zhongguancun Science Park

In October 2022, Beijing Gas and Beijing Fengtai Technology Park Construction Development Co., Ltd. established a joint venture to invest in the development of an integrated energy project in West District I, Fengtai Park of Zhongguancun Science Park. The total investment is expected to be RMB 280 million, with its heating services covering a total area of 1,336,100 square meters. The project prioritizes the use of shallow geothermal energy, which can provide 100% clean energy, and reduce CO<sub>2</sub> emissions by about 9,000 tonnes, SO<sub>2</sub> emissions about 100 tonnes, NO<sub>x</sub> emissions about 120 tonnes, and dust emissions about 37 tonnes. The project can significantly reduce the environmental hazards caused by its emissions.



> The integrated energy project in West District I, Fengtai Park of Zhongguancun Science Park

## ► Renewable Energy Use

As the climate crisis intensifies, the clean energy transition has become a priority in climate action plans. BEHL places a high premium on the use of clean energy and regards renewable energy as a crucial tool to reduce carbon emissions and achieve sustainable development goals. The Company continuously promotes the implementation of various clean energy projects, involving energy sources such as solar photovoltaics, biomass, wind energy, and geothermal energy. In 2022, BEHL consumed 320,711.79 MWh of renewable energy.

### 📍 Yanjing Brewery promoted photovoltaic power generation powering the energy transition and upgrading

In 2022, Yanjing Brewery continues to promote distributed photovoltaic power generation projects in accordance with its own situation to effectively reduce carbon emissions. The distributed photovoltaic power generation projects utilized PERC monocrystalline solar modules, and a total number of 320,540 60-cell 370Wp PERC monocrystalline photovoltaic modules were used. Every 20 photovoltaic modules were connected in series to form a string, and every 26 strings were connected to one 136kW string inverter, which totaled 64 and were all eventually connected to the plant distribution room. The total capacity of the project reached 12 MW. In 2022, this project achieved an average annual power generation of 13.2 million kWh and an annual CO<sub>2</sub> emission reduction of 8,000 tonnes, resulting in great success in terms of both its economic and social benefits.



> Distributed photovoltaic panels

## ► Carbon Sink Projects

BEHL has taken phased steps to encourage its subsidiaries to develop voluntary greenhouse gas emission reduction projects and obtain emission reduction carbon assets. In 2022, Xixian New Area Project, a subsidiary under the Solid Waste Treatment Platform, completed its project<sup>15</sup> registration with the Global Carbon Council (GCC). The Changde Project, also a Solid Waste Treatment Platform subsidiary, held a surplus of 156,200 tonnes of carbon allowances in December 2021 thanks to the application of various energy-saving and emission-reducing technologies and traded a total of 110,000 tonnes of carbon allowances in its first carbon sink transaction in April 2022.



Held a surplus of

**156,200** tonnes of carbon allowances in December 2021

Traded a total of

**110,000** tonnes of carbon allowances in its first carbon sink transaction in April 2022

<sup>15</sup> The project is a voluntary greenhouse gas emission reduction project in the Middle East and North Africa.

## Biodiversity Conservation

BEHL attaches great importance to biodiversity conservation and continues to facilitate the implementation of ecological restoration projects, setting an example for complying with the ecological red line. Through the *Management Policy of Biodiversity Protection* and other internal systems, we comprehensively coordinate the management of biodiversity conservation work within the Company. In addition, BE Water has formulated the *Water Source Management Policy of BE Water* and the *Biodiversity Conservation Management Measures of BE Water* to continuously promote biodiversity conservation and improve ecological protection.



## BEHL's ecological protection pledges:

- Give priority to biodiversity conservation in corporate development and take active measures for effective protection of important ecosystems, biological species and genetic resources to ensure ecological security.
- Ensure that every project will generate good ecological benefits, integrate biodiversity conservation into the design, construction, operation and maintenance of projects across all business segments, conduct regular biodiversity assessments and information disclosure, and subject ourselves to the scrutiny of multiple parties.
- Refrain from operations/exploration/exploitation/drilling in World Heritage sites and Category I-IV protected areas identified by IUCN (International Union for Conservation of Nature).
- Protect the natural environment such as forests, lakes and grasslands during the construction and operations of the Company, and avoid disrupting or damaging biodiversity and natural habitats.
- Prioritize the use of renewable natural resources and raw materials, minimize the production of polluting emissions or discharge, and reduce damage to the surrounding environment.
- Respect the traditions of ethnic minorities and try our best to avoid or minimize the impact on local communities during the construction or operation of projects.
- Actively engage in cooperation and research on biodiversity conservation with international conventions or organizations, industry associations, universities or research institutions and partners to improve the Company's environmental management capabilities and promote further improvement of biodiversity in China.
- Enhance the awareness of biodiversity and conservation matters among employees, customers, suppliers, and those who do business with the Company, and conduct regular trainings in this regard.
- Avoid deforestation of natural forests and severe deforestation during project construction or business operations and maintain the diversity and integrity of forest ecosystems.



To deliver good ecological and social benefits, BEHL has integrated the ecological protection measures throughout the entire cycle of all projects and implemented a three-stage initiative to step up ecological protection in areas where projects are undertaken. In 2022, the percentage of newly built, renovated, and expanded projects under BEHL that carried out environmental impact assessment was 100%.

### BEHL Ecological Protection Measures



#### Pre-project

- Thorough identification of environmental factors
- Scientific and reasonable site selection
- Eviction of wild animals inhabiting the project construction area in advance

#### Mid-project

- Developing environmental protection facilities operation and maintenance plans
- Regularly carrying out inspection of environmental hazards
- Conducting targeted education for employees on environmental protection and animal protection to raise their awareness of ecological protection

#### Post-project

- Restoring the vegetation and green landscape within the project area to avoid damage to the local ecosystem



**Beijing Gas promoted ecological restoration in Tianjin's ecological protection areas**

Beijing Gas strictly abided by policies related to biodiversity protection, and took measures to preserve biodiversity and the ecological environment in implementing its Tianjin Nangang LNG Emergency Storage Project. For instance, Beijing Gas made prompt ecological restoration efforts in 2022 such as the hydrological and water environment restoration, base structure and soil restoration, and wetland habitat improvement in the Beidagang wetland nature reserve in north China's coastal city Tianjin. It also engaged in ecological tracking and monitoring in Tianjin's permanently protected ecological areas and ecological protection red line areas including surveys on vegetation restoration, birds, and benthic animals, water quality and soil monitoring, and surveys on soil and water conservation. Other efforts included analyzing the controllability of ecological and environmental impacts based on the comparison prior to and after construction. Beijing Gas has taken a variety of ecological restoration measures surrounding the construction area based on the local conditions, and managed to meet the restoration requirements.



> Bird survey and benthic sampling



> Reclamation and replanting of the farmland crossed by pipelines

**BE Water constructed the Changde Tailwater Wetland Project ecological protection project**

In 2022, BE Water completed the construction of the Changde Tailwater Wetland Project in Hunan Province, utilizing a combination of vertical submerged wetland-ecological trench-type diffuse wetland process in the deep tailwater treatment project to build a biodiversity conservation system with *Vallisneria spiralis* as the dominant species. At the same time, BE Water stocked a certain proportion of carnivorous and filter-feeding fish in the ecological ditch to build a stable ecosystem of clear-water submerged plant communities, which enhanced the perception and transparency of the water body, inhibited the growth of algae and prevented eutrophication of the water body. The construction of this project has effectively maintained the ecological balance of Changde Liuye Lake and provided a rich biodiversity conservation value.



> Submerged wetland area in Changde tailwater, Hunan

## Health and Safety

BEHL always upholds a safety-first and preventive approach to workplace safety and practices comprehensive management for it. It deems safety management as an important task in production and operation activities and earnestly improves inherent safety. We place a strong emphasis on safety culture fostering and publicity and occupational health and safety system building to effectively protect the safety and health of employees.

### Safety Management

BEHL strictly complies with laws and regulations including the *Workplace Safety Law of the People's Republic of China*. It has formulated various internal systems including the *BEHL Workplace Safety Management Regulations*, the *BEHL Administrative Measures for Investigation and Management of Hidden Dangers of Workplace Safety Accidents* and the *Emergency Management System*. Setting its sights on “having no severe and particularly severe accidents, no ordinary-liability accidents and zero death from accidents”, BEHL has formed a safety management system up to high standards. In 2022, the company formulated the *Management Policy of Health, Safety and Environment* to safeguard the health of employees, employees in the supply chain, business communities and other stakeholders. Yanjing Brewery took the lead in setting non-zero safety management goals, and from 2020 to 2022, the number of employees with occupational diseases, the number of accidents causing work-related death and the number of accidents causing severe injuries in Yanjing Brewery were all 0, reaching its pre-set workplace safety targets<sup>16</sup>.

#### Safety management non-zero targets of Yanjing Brewery

Frequency of accidents causing severe injuries

≤ 0.08%

Frequency of accidents causing work-related injuries

≤ 0.7%

To fulfill its responsibilities for workplace safety, BEHL established a Workplace Safety Management Committee, which is responsible for leading, organizing and coordinating workplace safety matters. Meanwhile, the Company has established a responsibility system that factors into “annual key tasks & characteristics of the business segment”, distributed the letter of workplace safety responsibility and had it signed at all levels so that the

<sup>16</sup> The workplace safety data of Yanjing Brewery only includes the Beijing region.

safety responsibilities could be clarified all the way down to the minimum management unit, and also conducted a closed-loop assessment of the execution. In this way, BEHL has built a responsibility network featuring “horizontal and vertical integration” to ensure the effectiveness of safety management across the board. In 2022, the Company issued the *Call for Shouldering Primary Responsibility for Your Safety, Implementation Plan of Beijing Enterprises Holdings Limited to Better Fulfill Safety Responsibilities and Prevent Severe Accidents in Accordance with Upper-level Guidance*, and revised *Supervision and Management Regulations on Workplace Safety* and *Workplace Safety Responsibility System* to ensure that responsibilities for workplace safety can be attributable to individual employees and specific matters.

In 2022, BEHL had 1 severe injury accident with 3,782 work days lost due to work-related injuries; its suppliers had 1 severe injury accident with 1 work-related injury.

#### Work-related deaths at BEHL in 2020-2022

Indicators	Unit	2020	2021	2022
Number of work-related deaths among employees	Person	0	5	0
Percentage of work-related deaths among employees	%	0.00	0.01	0.00

#### Safety management indicators for employees and contractors of BEHL in 2022

Indicators	Unit	2022
Number of accidents causing work-related severe injuries among employees	Time	1
Number of work-related severe injuries among employees	Person	1
Frequency of accidents causing work-related severe injuries among employees <sup>17</sup>	%	0.00297
Number of work-related deaths among suppliers	Person	0
Number of accidents causing work-related injuries among suppliers	Time	1
Coverage rate of safety education and training among employees	%	100
Lost time per million hours worked among employees <sup>18</sup>	/	452.25

<sup>17</sup> Frequency of accidents causing work-related severe injuries among employee = (number of employees seriously injured due to industrial accidents/number of employees during the reporting period) ×100%.

<sup>18</sup> Lost time per million hours worked among employees = total lost working hours / actual total working hours ×1,000,000.

In 2022, BEHL focused on the control of safety risks at source. In accordance with the *Implementation Plan for the Three-year Special Rectification of Workplace Safety*, we organized and enforced special rectification, improvement, and upgrading actions for workplace safety, conducted hazard investigation and handling, and continuously optimized our dual prevention system. In 2022, BEHL leveraged a professional platform to monitor administrative punishment and public opinion in real time of more than 330 major subsidiaries, and collected more than 1,300 pieces of public opinions and risk information. We invested a total of RMB 1.771 billion in workplace safety, organized 47,961 safety inspections of various types and at all levels, and investigated 133,744 risks and hazards, with a rectification rate of 95.2%.

To improve the effectiveness of hazard investigation and rectification, Beijing Gas regularly conducts household inspections for residential and non-residential pipeline gas customers in rural "coal-to-gas" areas. The problems spotted during the inspections are classified into different levels according to the *Guidelines for the Classification, Control and Rectification of Safety Hazards in Households*, and will be resolved with corresponding rectification measures. In 2022, Beijing Gas continued to improve the process of household inspections for residential and non-residential customers and enhance the rate of household inspections to eliminate more hidden hazards and effectively ensure safe gas usage for customers. In 2022, Beijing Gas conducted 4.965 million household inspections for 4.46 million residential customers, covering 3.425 million households and increasing the inspection rate to 76.8%. The Company also organized multiple rounds of non-residential safety hazard inspections, cumulatively totaling 240,000 safety inspections and covering a total of 75,000 non-residential customers. These inspections helped eliminate 130,000 safety hazards, accounting for 92.2% of the total identified hazards. The Company realized the goal of reducing Class 1 hazards to dynamic zero for non-residential customers.

To address the risk of gas leakage, Beijing Gas has adopted various preventive approaches: installing pipeline anti-corrosion defences by technical means, strengthening leakage inspection and detection by high-precision instruments and avoiding damage in construction via markings and surveillance.



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### Leak Prevention and Control Program of Beijing Gas

#### Installing anti-corrosion defences by technical means

- Increase investment in corrosion control technology improvement
- Install additional cathodic protection equipment and facilities
- Strengthen anticorrosive layer detection and repair
- Timely eliminate stray current interference to effectively put in place a pipeline anticorrosive defence

#### Strengthen leakage inspection and detection by high-precision instruments

- Deploy high precision inspection vehicles
- Combine daily perforation inspection, five-metre line inspection, anticorrosion layer inspection and high precision inspection to carry out pipeline inspection in an all-round and systematic manner

#### Avoid damage in construction via markings and surveillance

- Enhance communication with the communities for greater cooperativeness in constructions
- Fix ground markings and prevent gas leakage caused by damage from external force
- Strengthen the pipeline operation surveillance

## Emergency Drills and Training

BEHL continuously improves its emergency plans and on-site response plans, and organizes emergency drills based on an organizational mode that emphasizes both on-site practical drills and high-frequency tabletop exercises. The goal is to ensure that the Company can respond in a prompt, scientific and proper manner in the event of an emergency or an accident. In 2022, the Company took further steps to make its emergency plans more comprehensive and practical in key areas, sites, and processes. In 2022, BEHL conducted 3,196 emergency drills and exercises to effectively improve its employees' capabilities to respond to safety emergencies.

### Yanjing Brewery conducted firefighting safety training and drills

From August to September 2022, Yanjing Brewery organized two fire safety training sessions and simulation drills for its employees. The training and drills included the fire hazards and prevention measures within the company, how to use firefighting facilities, general knowledge of firefighting response at the initial stage, and escape and self-rescue tips. Through the training and drills, its employees had a more comprehensive understanding of the self-examination and investigation of fire hazards and firefighting response at the initial stage, further raising their safety awareness and firefighting capability.

### Tai'an project under the Solid Waste Treatment Platform conducted an emergency drill

On June 23, 2022, during the 21st national "Work Safety Month", Tai'an project under the Solid Waste Treatment Platform conducted an emergency drill in response to hydrochloric acid leaks (confined space) to test whether its emergency plans were scientific, effective, and operable enough. Based on the principle of "being effective, in line with the actual situation, and similar to the actual scenarios", the drill was designed to cover four subjects: emergency response to hydrochloric acid leaks, first aid for poisoning and asphyxiation, cardiopulmonary resuscitation, and on-site decontamination and environmental testing. After the drill, the company meticulously summarized its experience and weaknesses, and accelerated the improvement of its emergency and rescue system and mechanisms. This is part of its efforts to continuously improve the ability to command, coordinate, make targeted deployment, and provide professional rescue services.



> Fire safety training and drills at Yanjing Brewery



> The emergency drill at Tai'an project under the Solid Waste Treatment Platform

In terms of creating a safety culture, BEHL always insists on starting with its rank and file and organizes diversified activities to translate its safety culture into employees' conscious actions. In addition, we make full use of various forms of safety protection publicity to popularize safety knowledge among the public. In 2022, BEHL's various types of safety education and training registered 211,245 attendances.

**BEHL organized the "Ankang Cup" Competition for Confined Space Operations**

In September 2022, BEHL organized the "Ankang Cup" Competition for Confined Space Operations, its first multi-industry safety competition. The event covered industries such as Beijing's water supply and drainage, environment, beer, property, and gardening. It was attended by 12 teams from 13 companies such as BE Water, BE Environment, and Yanjing Brewery. The event remarkably raised the safety awareness and improved the professional skills of our employees and strengthened safety communication and integration among our subsidiaries in various business segments.



> The "Ankang Cup" Competition for Confined Space Operations at BEHL

**Beijing Gas launched a large-scale gas safety promotion campaign in the Chaoyang Joy City**

On September 29, 2022, Beijing Gas launched a large-scale gas safety promotion campaign in the Chaoyang Joy City area, to answer customers' questions in detail, actively promote gas equipment and products sold on the Beijing Gas WeChat mini-program, and distribute promotional materials on gas safety. During the activity, more than 200 copies of publicity materials were distributed, involving hundreds of people in the surrounding areas. This further strengthened the publicity and popularization of gas safety knowledge in the region and improved the public's ability to prevent and respond to gas accidents.



> The gas safety promotion campaign

**The Solid Waste Treatment Platform provided education and training on workplace safety**

In 2022, the Solid Waste Treatment Platform organized its employees to watch safety education videos and mini films to further raise their safety awareness and skills and consolidate the foundation of its safety efforts.



> Education and training on workplace safety by the Solid Waste Treatment Platform

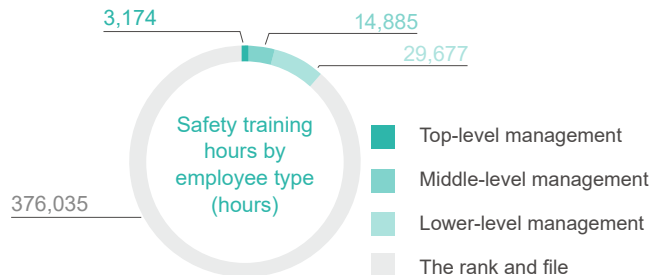
**Yanjing Brewery organized its annual Emergency Response Knowledge and Skills Competition**

In October 2022, Yanjing Brewery held the 4th Emergency Response Knowledge and Skills Competition, attended by a total of 440 participants in 82 teams. The competition included individual events such as 50-meter run with positive pressure breathing apparatus, and firefighting using fire extinguishers, and also team events such as the three-player three-fire-hose relay to pump firefighting water to the target, and the online emergency knowledge theory test. The competition effectively improved its employees' emergency and rescue capabilities and raised their risk awareness, providing strong guarantees for work safety.



> Yanjing Brewery's annual Emergency Response Knowledge and Skills Competition

**Safety training at BEHL in 2022**



**Occupational Health and Safety**

BEHL strictly abides by laws and regulations including the *Law of the People's Republic of China on the Prevention and Control of Occupational Diseases*, and implements the occupational health management in accordance with the various requirements set forth in the ISO 45001 occupational health and safety system. The Company formulated the *Management Regulations for Employee Accident Emergency Responses of Beijing Enterprises Holdings Limited*. In 2022, Beijing Gas, BE Water, BE Environment Technology and EEW GmbH all obtained the ISO 45001 certification, elevating the proportion of BEHL subsidiaries obtaining the ISO 45001 certification to 67%<sup>19</sup>.

BEHL earnestly protects the safety and health of employees. It equips employees with personal protective equipment in accordance with regulations and instructs them to use them correctly, and requires employees to wear and use corresponding personal protective equipment when engaging in production activities according to the potential occupational hazards in the operations so that the protective equipment can prevent personal injuries to the largest extent possible. We also carry out routine medical checkups and occupational disease hazard tests for employees according to the characteristics of the business segment involved, and conduct occupational disease screening for employees in positions with occupational hazards. In 2022, the coverage of medical checkups for BEHL employees<sup>20</sup> reached 99.05% and the employee health spending<sup>21</sup> reached RMB 5.0581 million.

To help suppliers perform better in management of occupational health and safety, we encourage them to formulate relevant policies internally for that purpose. During the Reporting Period, some of BEHL's partnering suppliers have formulated the *Quality, Environment, Occupational Health and Safety Management Manual* and the *Guidelines on Workplace Safety Compliance* with reference to regulatory standards to ensure their workplace safety.

<sup>19</sup> In the calculation of the percentage of BEHL subsidiaries obtaining the ISO 45001 certification, the weight assigned to Beijing Gas, BE Water, the environmental business segment and Yanjing Brewery is 25% respectively (with BE Environment, BE Environment Technology and EEW GmbH each accounting for 1/3 of the weight assigned to the environmental business segment).

<sup>20</sup> The data scope here does not include EEW GmbH.

<sup>21</sup> The data scope here does not include EEW GmbH and Beijing headquarters.

# Employees and Public Welfare

In proactive fulfillment of its corporate social responsibilities, BEHL has built a law-abiding, fair and healthy work environment with diversified learning paths for employees to achieve common development of the enterprise and employees. We also actively participate in social undertakings and charity activities to contribute to the development of a harmonious society.

## Major progresses of the year

- Attendances of employee training totaled **315,593** person-time, and training hours totaled **921,898.9**, covering **96.60%** of employees
- Financial aid totaling RMB **1.49** million for **436** employees in distress
- Employee satisfaction rate of Solid Waste Treatment Platform reached **100%**, with the coverage of **100%** employee
- BEHL was awarded the “Good MPF Employer” for the third consecutive year and the “Caring Company” logo for the fifth consecutive year
- External charitable donations totaled HK\$ **3.998** million
- Attendances of employee participation in charity projects totaled **4,749** person-time, with man-hours reaching **16,885**



## Employees Rights and Interests

Upholding the “talent first” tenet, BEHL has sought to attract talents from all sectors by improving talent management strategies and optimizing remuneration and benefits. We, in accordance with the laws, make painstaking efforts to protect the legitimate rights and interests of employees, safeguard their human rights, and build an equal, diversified and inclusive work environment.

## Talent Attraction

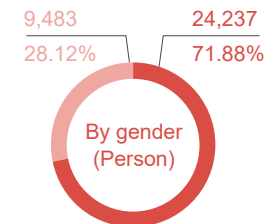
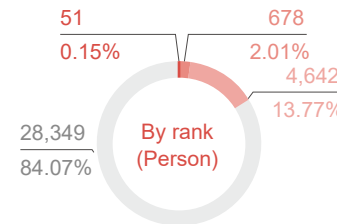
BEHL makes continuous efforts to build a stronger talent base by both expanding recruitment channels for fresh graduates and experienced candidates and creating a fair and just internal talent selection and appointment mechanism. In 2022, the Company released the *Talent Development Plan of BEHL during the 14th Five-year Plan Period*. Human capital analysis was conducted to identify risks and opportunities related to talent movement, and, factoring in the 2022 talent summary, analyze the talent gap, capability gaps and talent needs of the Company. The plan also further clarifies the work standards for talent team building, laying the foundation for various HR management measures. As of the end of the Reporting Period, BEHL had a total of 33,720 employees.

Through statistical analysis of employee attrition rate and reasons for attrition, we continuously optimize our employment management strategy to retain key talents in a targeted manner and with justifiable action. In 2022, the total number of employees that left BEHL was 2,813, and the employee attrition rate 7.70%.

### In-service employees at BEHL in 2022<sup>22</sup>

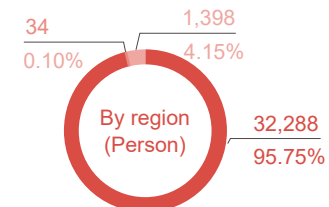
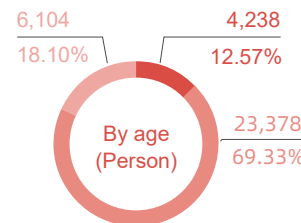


Total number of employees **33,720**



- Top-level management
- Middle-level management
- Lower-level management
- The rank and file

- Male
- Female

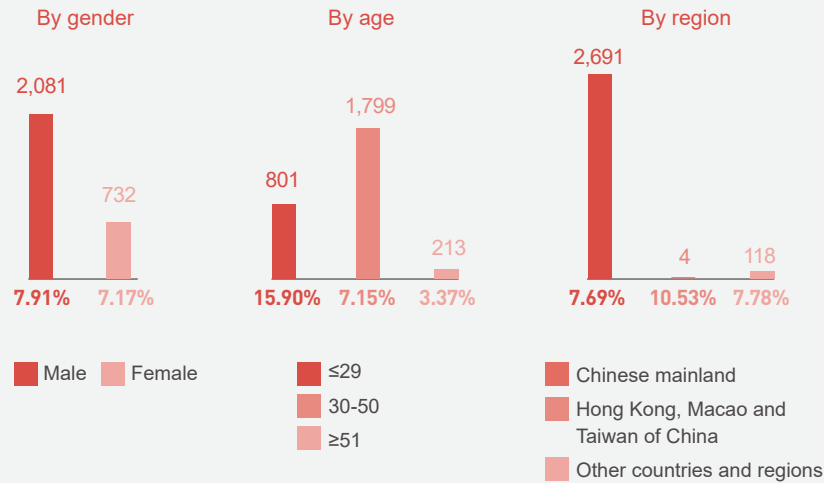


- ≤29
- 30-50
- ≥51
- Chinese mainland
- Hong Kong, Macao and Taiwan of China
- Other countries and regions

<sup>22</sup> This data only includes the number of employees who have signed labor contracts.



### Employee attrition at BEHL in 2022



BEHL strictly abides by the relevant national policies and regulations on remuneration and benefits, and it has formulated the *Remuneration Management System of Beijing Enterprises Holdings Limited*, the *Management Measures for Corporate Supplementary Medical Insurance of Beijing Enterprises Holdings Limited* and *Implementation Rules for the Supplementary Medical Insurance Scheme of the Beijing Headquarters of Beijing Enterprises Holdings Limited (for Solicitation of Opinions)*, which comprise the remuneration and benefits system of BEHL. BEHL offers insurance for pensions, unemployment, work-related injury, and medical maternity needs and also a housing provident fund for employees. On top of that, BEHL provides employees with supplementary social medical insurance to further ease their medical burden.



In 2022, the coverage of social insurances among employees was

**100%**

## Human Rights Safeguard

In adherence to the central proposition of the *Universal Declaration of Human Rights*, the *United Nations Guiding Principles on Business and Human Rights* and with reference to the core tenets of international human rights conventions such as the *Declaration on Fundamental Principles and Rights at Work* adopted by the International Labour Organization, BEHL released the *Management Policy of Workers' Rights and Interests*, which is applicable to all employees of BEHL and all its domestic and overseas subsidiaries. We resolutely prohibit child labour and forced labour and other violations of human rights, improve the democratic management system underpinned by the employees' congress, offer more channels for employees to give feedback, and earnestly protect employees' legitimate rights and interests.



### We are committed to:

- Prohibiting forced labour and child labour
- Avoiding discrimination and harassment
- Setting reasonable remuneration and enabling fair promotion
- Ensuring thorough communication between employees and the Company
- Protecting privacy
- Safeguarding employee benefits
- Creating a safe and healthy workplace

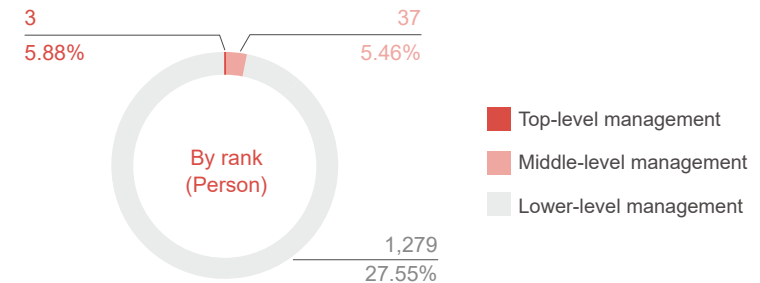
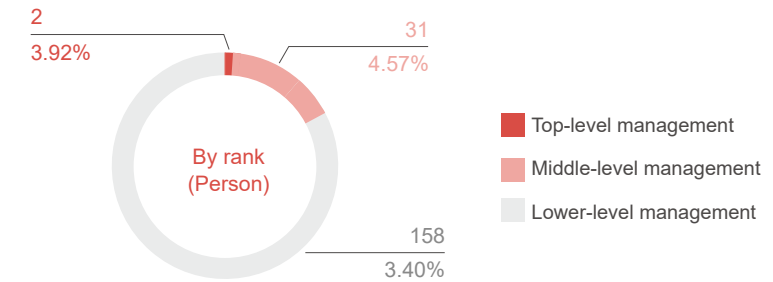
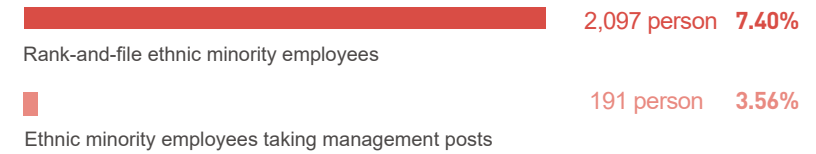
All subsidiaries of BEHL respect human rights in their operations or services. For instance, BE Water put forward the *BE Water Statement on Employee Rights and Interests*, which covers the regulations and requirements on human rights protection for employees, suppliers and partners alike. BEHL pays attention to suppliers' protection of labour rights and interests. It has formulated the *Management Policy of Sustainable Supply Chain* and pledged to factor the performance of suppliers in terms of labour rights and interests protection into supplier evaluation for product or service procurement decision-making, in a bid to build a human rights-friendly environment together with its supplier partners.

## Equal Employment

To safeguard employees' legitimate rights and interests and establish good employee relations, in such aspects as recruitment, dismissal, leave and working hours, BEHL strictly abides by laws and regulations including the *Labour Law of the People's Republic of China* and the *Labour Contract Law of the People's Republic of China* and formulated rules and regulations and code of conduct such as the *Regulations on the Management of Labour Contracts and Personnel Files of Beijing Enterprises Holdings Limited* and the *Regulations on Recruitment Management of Beijing Enterprises Holdings Limited*, *Regulations on Paid Annual Leave for Employees of Beijing Enterprises Holdings Limited* and the *Guidelines at Hong Kong Headquarters on Equal Opportunity and Privacy of Beijing Enterprises Holdings Limited*. They provide safeguards for creating an equal and harmonious employment environment. In 2022, BEHL drew up *Attendance and Leave Management Measures for Employees of the Beijing Headquarters of Beijing Enterprises Holdings Limited* and the *Labour Contract Management Measures for Headquarters of Beijing Enterprises Holdings Limited* to further optimize the management rules of work hours and labor contracts.

BEHL prohibits discrimination and harassment in recruitment, remuneration, training and promotion on the basis of gender, region, ethnicity, religion, age, pregnancy or marital status, disability and political stance, etc. BEHL seeks to increase employee diversity under the premise of lawful employment. In 2022, no discrimination or harassment incident occurred at BEHL.

## Employee Diversity at BEHL in 2022



As of the end of the Reporting Period



The Company had  
**2,288**  
ethnic minority employees

Of all the personnel holding management positions, ethnic minorities accounted for

**3.56%**

overseas employees accounted for

**24.56%**



**1,398**  
overseas employees

BEHL vigorously safeguards the legitimate rights and interests of female employees and thoroughly implements the remuneration and leave rules and regulations for female employees in accordance with the *Constitution of the People's Republic of China*, the *Law of the People's Republic of China on the Protection of Women's Rights and Interests*, the *Special Rules on the Labour Protection of Female Employees* and other relevant laws and regulations. We pay close attention to the career development opportunities of female employees and ensure no gender difference in promotion, remuneration adjustment and professional and technical job title evaluation in a bid to create a gender-neutral work environment. Simultaneously, we continue to focus on equal pay for male and female employee, and promote gender equality through pay allocation. As of the end of the Reporting Period, the percentage of female employees in management positions at BEHL was 19.87%, the percentage of women in revenue-generating positions<sup>23</sup> was 25.24% and the percentage of women in STEM-related positions<sup>24</sup> was 32.81%.

<sup>23</sup> The data scope here does not include EEW GmbH.

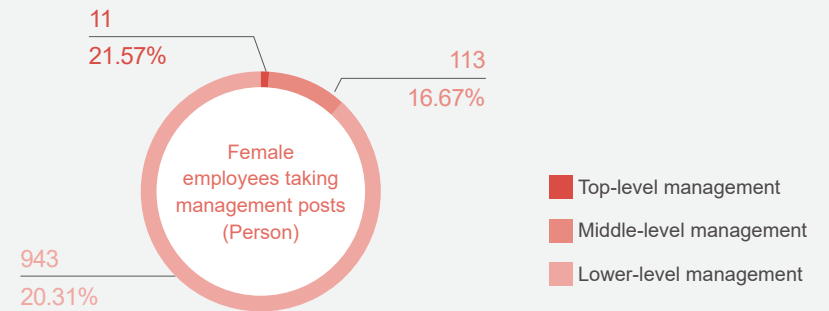
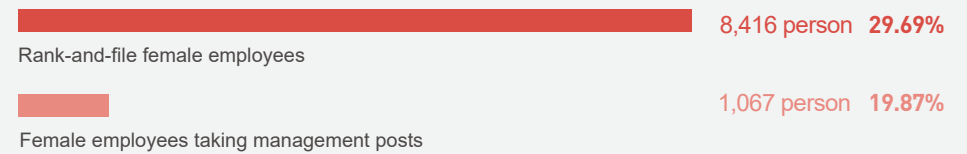
<sup>24</sup> The data scope here does not include EEW GmbH.

<sup>25</sup> The data scope here does not include EEW GmbH.

<sup>26</sup> The data scope here does not include EEW GmbH.

## Statistics on female employees at BEHL in 2022

### Quantity and percentage of female employees by rank



Female employees in revenue-generating posts<sup>25</sup>



4,314

Accounted for

25.24%

Female employees in STEM-related posts<sup>26</sup>



457

Accounted for

32.81%

## Employee Growth

BEHL pays attention to the development needs of employees at different stages. The Company has established a sound promotion channel for employees, built a well-working talent training mechanism, and provides fair and equal development opportunities for employees to bring into full play their initiative and creativity and empower their development.

### Promotion Planning

BEHL makes great efforts to improve the employee promotion system. In accordance with relevant national laws and regulations, it has formulated the *Management Measures for the Evaluation of the Business Performance of the Subsidiaries of BEHL (Trial)*, *Measures for the Vigorous Implementation of the Tenure System and Contractual Management of the Manager-level Staff of BEHL*, the *Management Measures for Tying Remuneration to Performance for Heads of Subsidiaries of Beijing Enterprises Holdings Limited (Trial)* and the *Management Measures for Remuneration of Heads of Subsidiaries of Beijing Enterprises Holdings Limited (Trial)*, among other systems. Such endeavors aim at ensuring fair and reasonable promotion, remuneration and performance evaluation for employees in every way and providing support and assistance for employees to advance their career path and realize their self-worth.

We have set up a dual-channel development system for management and technology talents separately and clarified employee qualifications and job-taking procedures. To build a stronger talent base, we have, in accordance with relevant systems, kicked off internal recruitment. In 2022, the percentage of job vacancies that were open to internal recruitment at Yanjing Brewery was 18%.

BELH has established a quarterly performance appraisal program and regularly conducts employee performance evaluations, which factor in employee performance, capabilities and work outcomes with the focus placed on the annual key tasks of their job. We also offer year-end bonuses, presidential special awards, and employee engagement awards to incentivize all employees to work hard towards the high-quality development of BEHL. In 2022, BEHL has formulated and implemented the *2022 Staff Rank Adjustment Plan for the Beijing Headquarters of BEHL* to explore, together with employees, a win-win position rank system and management standards in a bid to motivate employees to enhance their performance and advance and grow together with BEHL.

## Training System

Based on the *Training Management Regulations of Beijing Enterprises Holdings Limited* and other institutional requirements, BEHL has continued to enrich the content and diversify the means for employee training. In 2022, we conducted surveys of departments and individual employees to learn about their training goals and desired capability enhancement respectively. According to survey results, we carried out training online, in offline classrooms or on project sites, of various forms such as on-boarding training for new hirees, staff outward bound training, professional skills training, and professional technical talents training for subsidiaries to enhance professional skills and competency of staff across the board.

### Employee training outcomes and spending at BEHL in 2022



Total training attendances  
**315,593**  
person-time

Percentage of employees trained  
**96.60%**



Total training hours  
**921,898.9** hours



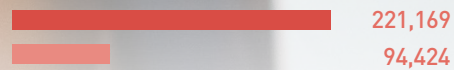
Per capita training hours  
**27.34**  
hours/person

Spending on training  
RMB **8.95** million

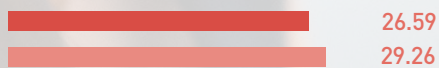
### Employee training at BEHL in 2022

#### By gender

Attendances (person-time)



Per capita training hours (hours/person)



Male Female

#### By rank

Attendances (person-time)



Per capita training hours (hours/person)



Top-level management Middle-level management  
Lower-level management The rank and file

### Beijing Gas organized "Science and Technology Lectures" on the "Monthly Classroom" Learning Platform

To develop the digital mindset of its employees, Beijing Gas organized the first "Monthly Classroom" and "Science and Technology Lectures" in 2022. Dr. Zhou Jian, Vice President and Secretary General of Zhongguancun Alliance for Integration of Information Technology and Real Economy and President of Beijing Guoxin Digital Transformation Technology Research Institute, was invited to deliver a lecture themed "Digital Transformation Strategies for Large Enterprises" to share ideas of improving digitalization of enterprises and promoting digital innovation of internal business models, management models and operating models.



> "Science and Technology Lectures" at Beijing Gas

## Compassion and Care

BEHL has made proactive efforts to nurture compassion and care and make them feature increasingly prominently in management work and in culture building. We are always particularly attentive to the needs of employees in distress and offer them warm and considerate encouragement as well as supplies and materials. We put in place smooth channels to stay informed about employee needs and suggestions, which goes a long way towards fostering a favorable work environment.

### Employee Care

BEHL provides both tangible aid and care to employees through organizing employee activities, helping employees in need and taking extra care of female employees' needs. We have set up baby care rooms and regularly organized physical examinations for female employees to create a more friendly and caring work environment for them. We care about employees in need and help them through pragmatic and targeted assistance programs that take care of their daily needs.

### BEHL held a team building activity themed "Being United to Embrace a New Start" to celebrate the 25th anniversary of its IPO

In August 2022, BEHL's Beijing headquarters held a team building activity to celebrate the 25th anniversary of its IPO at the Yanqing Olympic Park, attended by a total of 63 employees from the headquarters. During the activity, they completed various team building tasks in teams, which further promoted the communication and integration between the old and new employees and improved the team cohesion.



> BEHL's team building activity to celebrate the 25th anniversary of its IPO

### A health lecture for employees

On December 2, 2022, to raise employees' health awareness and protect their physical and mental health, we held a health lecture to explain to employees the concept of occupational health, identification of health hazards, and prevention measures. The lecture mainly introduced common occupation-related shoulder, neck, and back pains and their relief methods, to raise employees' awareness of physical and mental health and encourage them to enjoy a healthy life.



> The health lecture for employees

In 2022, BEHL granted financial aid totaling RMB **1.49 million** to **436 employees** in distress

## Employee Communication

BEHL has put in place labour mediation committees and appointed labour law supervisors in its subsidiaries to provide employees with smooth channels of communication. We also put in place whistleblowing channels for employees. Employees can report discrimination, harassment, and other related issues to our legal department safe in the knowledge that the handling departments will keep their identity and complaint information strictly confidential to safeguard their legitimate rights and interests.

To stay informed about employee needs and suggestions, BEHL established the *Employee Satisfaction Survey Management System of Beijing Enterprises Holdings Limited* and conducts an employee satisfaction survey every two years. The survey is about performance determination, career development and training needs, etc. Analysis of the survey results helps the Company make institutional improvement and optimize management models in a targeted manner.



In 2022, the employee satisfaction rate of  
Solid Waste Treatment Platform

reached **100%** with the coverage of **100%** employee

### BEHL was awarded the “Good MPF Employer” honour for three years consecutively

In September 2022, BEHL was awarded the “Good MPF Employer” honour for the third year running. The Good MPF Employer recognition program was launched by the Mandatory Provident Fund Scheme Authority, Hong Kong (MPFA) in 2015. It aims to facilitate employers to fulfill their legal responsibilities and encourage them to provide employees with better retirement benefits.

BEHL has been for years committed to improving employee retirement benefits and fulfilling its corporate responsibilities, making its contribution to creating a fair and just employment environment and a safe and healthy work environment.



> BEHL was awarded the “Good MPF Employer” honour

## Social Responsibility

BEHL highly values the creation of social value. Paying constant attention to charity undertakings, it works with parties from all walks of life to carry out charity activities and fulfill its obligations as a corporate citizen and give back to the community. In 2022, BEHL was awarded the Caring Company logo by Hong Kong Council of Social Service for the fifth consecutive year. This award is an affirmation of its outstanding contribution in multiple areas such as care for communities and youth development.

BEHL is concerned about rural revitalization, environmental protection, youth development, sports and the underprivileged communities, among other issues. Through Mingxi Charity Foundation (hereinafter referred to as "Mingxi") and its affiliated organization Mingxi Volunteer Team, BEHL has offered a number of charity services, contributing its share to the sustainable development of the whole society.



> the "Caring Company" certificate

In 2022

Attendances of BEHL employees in charity projects totaled	Hours spent totaled	Donations reached
<b>4,749</b>	<b>16,885</b>	HK\$ <b>3.998</b> million

## Rural Revitalization

BEHL has earnestly stepped up its fulfillment of social responsibilities. It has supported areas receiving paired assistance from it and villages with weak collective economy development in multiple facets such as industry, employment, consumption and charity undertakings, contributing to their sustainable development and rural revitalization endeavors and solidly promoting the construction of a better society of common prosperity.

In our pairing-assistance areas, BEHL has, based on its main advantages, invested in, developed and operated various kinds of industrial projects in such areas as energy, water, solid waste treatment, environment and sanitation, and photovoltaics, thereby creating local

jobs and boosting local socio-economic development. Meanwhile, we encouraged all subsidiaries to establish long-term procurement relationships with areas paired with them for receiving assistance, buying quality specialty agricultural products from them on a regular basis rather than merely making donations. For areas paired with us for assistance, we continue our cooperation with Beijing Instrumentation Senior Technical School in the dual-system order-based training project to provide training, education and employment assistance to those on the verge of poverty and those who can easily relapse into poverty again, and students from low-income families.

### Assistance Provided by BEHL in 2022

#### Industrial assistance

- BEHL has invested a total of RMB 10.32 billion in 22 existing and planned projects in Inner Mongolia, Xinjiang, Qinghai and Tibet. In 2022, an additional investment of RMB 86.009 million was made and another 354 local jobs were created

#### Employment assistance

- BEHL recruited 307 employees from rural households and 16 rural college students in the "Spring Breeze Action", an employment assistance activity initiated by the Ministry of Labour and Social Security of the People's Republic of China
- BE Environment has purchased 240 pieces of workwear to participate in the "Supporting Xinjiang with Workwear" initiative

#### Consumption assistance

- BEHL procured RMB 1.45 million of products for poverty alleviation, supporting a total of 2,862 people in poverty
- BEHL procured RMB 213,800 of agricultural products from Zhujiayu Town, Jinan City, Shandong Province, an area for which the Company provides long-term support, to further boost the economic development of villages with a weak collective economy

#### Public welfare assistance

- BEHL cooperated with the education bureaus of Laishui County, Gaoyang County, and Wei County in Hebei Province to promote the "On the Way-BEHL Green Seeds Project", popularizing the environmental protection courses among 21,000 fifth-grade students in 266 schools in the three counties. BEHL also donated teaching supplies and books for environmental protection courses and teacher award funding worth over RMB 260,000 to education and sports bureaus of the three counties respectively



## Environmental Protection Activities

We have set up research and training bases in various places, and organized activities such as open day events and science learning in exhibition halls to popularize energy-saving and environmental protection knowledge among the public. These efforts are aimed at engaging more people in protecting the ecological environment and fostering a sound environmental protection atmosphere for all.

### BEHL participated in an annual charity event organized by the Ocean Park Conservation Foundation, Hong Kong

In November 2022, BEHL participated in the annual charity event "Run for Survival 2022" organized by the Ocean Park Conservation Foundation, Hong Kong. With the theme of "Join Hands to Tackle Climate Change and Protect Our Ocean", the event was designed to promote marine conservation among the general public and raise their awareness of the serious threats to the marine ecosystem. Our participating employees did exercise and also contributed to the charitable organization's promotional campaign to raise public awareness of marine conservation.



> The "Run for Survival 2022" activity

### BEHL organized a tree-planting and reforestation activity for its Hong Kong office employees

On May 30, 2022, BEHL organized its employees to participate in a tree planting and reforestation activity at the Kadoorie Botanical Garden in Tai Mo Shan, Hong Kong, responding to the Hong Kong government's call on enterprises to plant trees. Some parts of Tai Mo Shan in Hong Kong have been severely damaged due to logging and fires, and seen slow natural recovery. To speed up forest recovery, the Company specially selected the site to plant trees here, and a total of 66 saplings were planted in this activity. This activity contributed to the restoration of ecological forest resources in Hong Kong.



> The tree planting and reforestation activity

### BEHL has implemented the "Green Seeds Project" for Years

The "Green Seeds Project" is a public welfare activity that integrates the concept of green and sustainable development into the social good. The project was launched by BEHL based on both its strengths and business characteristics, mainly for primary school students in the regions that receive paired assistance from Beijing. It focuses on popularizing environmental protection knowledge of waste classification and water treatment. In 2022, the Green Seeds Project was introduced to the 14 schools in Wei County, Hebei Province. These schools organized various educational and practice activities themed "Waste Classification Starting from Me", including speech contests, thematic class meetings, and various off-campus practices to both popularize the knowledge of waste classification and to develop good environmental protection habits among students.



> Waste classification educational and practice activities



### The Fuzhou Regional Company of the Southern Region of BE Water organized environmental protection science-learning activities

In 2022, the Fuzhou Regional Company of the Southern Region of BE Water organized environmental protection science-learning activities for the youth, the company disseminated the scientific knowledge of water environmental protection and the impact of such protection on daily life, and explained the routine operations and maintenance of the local Baima River, with the aim of promoting the knowledge of river protection and raising children's awareness of environmental protection.



> An environmental protection science-learning activity

## Youth Development

We launched various innovative activities for young people in Hong Kong and Beijing through Mingxi Charity Foundation to build consensus and empower and prioritize their development, so that they can be in a better position to grow and make a difference in this new era. We continued to sponsor the Mingxi Scholarship to help students from low-income families or in other financial difficulties in Hong Kong finish their education, and to encourage young people to give back to the society. In 2022, a total of 7 students benefited from the Mingxi Scholarship.

**Mingxi supported the 8<sup>th</sup> Hong Kong University Student Innovation and Entrepreneurship Competition and the Hong Kong Selection Competition of the 5<sup>th</sup> Beijing-Hong Kong Youth Innovation and Entrepreneur Cup**

In May 2022, the final round of the 8<sup>th</sup> Hong Kong University Student Innovation and Entrepreneurship Competition and the 5<sup>th</sup> Beijing-Hong Kong Youth Innovation and Entrepreneurship Cup-Hong Kong Regional Trials, co-organized by Mingxi and other parties, was held in Hong Kong. Mingxi has supported and participated in the competitions for six consecutive years, aiming to promote youth exchange between Hong Kong and Beijing, unlock students' potential, and inspire them to lead the way in future innovation and entrepreneurship. The project "Digital Lab System", headed by Mingxi Outstanding Youth representatives, won the Merit Award of the Entrepreneurship Project (Start-up).



> The event host presented a commemorative trophy to the Mingxi Charity Foundation

**Mingxi invested matching funds in the second Youth Innovation and Entrepreneurship Fund**

Mingxi and its partners have jointly applied for funding support from the Youth Development Fund of the Youth Development Commission of the Hong Kong Government for the "Funding Scheme for Youth Entrepreneurship in the Guangdong-Hong Kong-Macao Greater Bay Area" to establish the second Youth Innovation and Entrepreneurship Fund. Under the theme of "Funding Scheme for a New Generation of Youth in the Guangdong-Hong Kong-Macao-Greater Bay Area", the second Youth Innovation and Entrepreneurship Fund provided HK\$ 1.44 million of recoverable matching funds, and leveraged HK\$ 5.76 million of non-refundable government funding at a ratio of 1:4 to provide a total of HK\$ 7.2 million for 16 high-quality entrepreneurship projects and follow-up support in 2022. The goal was to continuously nurture young talent for mass entrepreneurship and innovation in Hong Kong and Macao.

## Sports Career

BEHL places a high value on the development of sports. Yanjing Brewery and the Chinese Football Association (CFA) have launched the "Seeds Project Campus" for nine consecutive years to strengthen children's physical fitness, support the Winter Olympic and Paralympic Games, and contribute to the development of sports in China.

**Yanjing Brewery and CFA continuously implemented the "Seeds Project"**

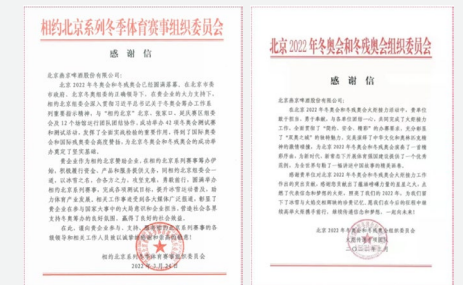
Brewery and the CFA Cup Committee jointly launched the CFA Cup "Seed Project", in which Yanjing Brewery donates 100 soccer balls to five key soccer schools in the area where the home court is located after each CFA Cup match. By the end of 2022, a total of 43,800 soccer balls had been donated to 2,095 primary and secondary schools and youth training institutions across China under the Project. Yanjing Brewery aspires to create a healthy and happy life experience for students with soccer balls and encourage more widespread participation in sports.



> The CFA Cup championship trophy and the "Seeds Project" in Chengdu

**Yanjing Brewery received letters of thanks from the Beijing Organizing Committee for the 2022 Winter Olympic and Paralympic Games**

As the official sponsor of the 2022 Beijing Winter Olympic and Paralympic Games, Yanjing Brewery has provided support for the events and witnessed the whole process from the preparation stage to the successful conclusion. Therefore, the company received two letters of thanks from the Beijing Organizing Committee for the 2022 Winter Olympic and Paralympic Games and the Organizing Committee of the Meeting in Beijing Series of Winter Sports Events.



> Letters of thanks

## Public Welfare Undertakings

BEHL is dedicated to public welfare with perseverance and mobilizes its employees to participate in voluntary services such as delivering care to elderly of no family and the disadvantaged. BEHL aims to deliver care and love, contributing to the healthy development of a harmonious society.

### BEHL organized an activity to visit the elderly in a Hong Kong community and gave them lucky bags

To care for the elderly and benefit communities, BEHL joined hands with Sowers Action and the Ta Ku Ling Kei Lok Community Association to visit the elderly living alone or with their spouse in the North District of Hong Kong on the morning of April 25, 2022, and provided them with basic supplies and anti-epidemic supplies such as masks, nucleic acid test kits, alcohol wipes. The goal was to help the elderly reduce the infection risks by going out less often.



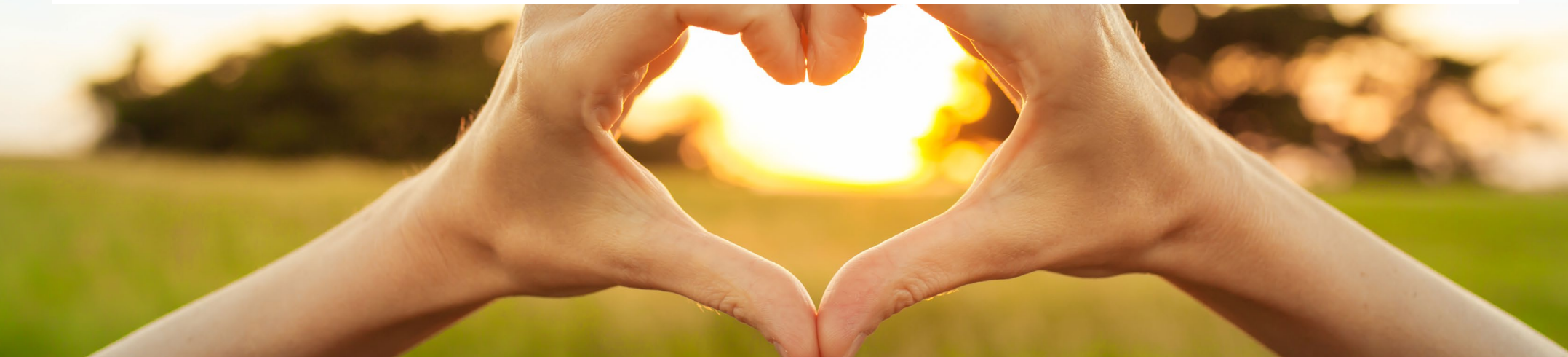
> The activity to visit the elderly and provide them with lucky bags

### Beijing Enterprises Holding Hongchuang Co., Ltd., a subsidiary of BEHL, organized a public welfare activity themed "Delivering Warmth and Love"

On September 21, 2022, the employees of Beijing Enterprises Holding Hongchuang Co., Ltd. visited the nursing home and the orphanage in Liucun Village, Changping District, Beijing, in its public welfare activity themed "Delivering Warmth and Love". The company donated basic supplies worth nearly RMB 8,000 such as rice, noodles, cooking oil, milk, snacks, mineral water, and toilet paper to convey warm greetings to the elderly, orphans, and disabled children.



> The care delivery activity



## ESG Key Performance Data

Key Performance Indicator	2020	2021	2022
Revenue (HK\$ billion)	68.41	80.44	92.30
Basic earnings per share (HK\$/share)	4.19	7.86	6.00
R&D investment (RMB 100 million)	16.7	16.7	19.3
Safety investment (RMB 100 million)	9.18	9.11	17.71
Greenhouse gas emissions (10,000 tonnes of CO <sub>2</sub> e)	111.0	89.8	89.2
Greenhouse gas emissions per HK\$ 10,000 of revenue (kg/HK\$ 10,000)	162.3	111.6	96.6
Energy consumption (10,000 tonnes of standard coal, including coal, electricity, natural gas, gasoline and diesel)	38.4	35.1	33.6
Energy consumption per HK\$ 10,000 of revenue (kg/HK\$ 10,000)	56.1	43.6	36.4
Fresh water consumption (10,000 tonnes)	2,250.8	2,460.3	1,788.0
Fresh water consumption per HK\$ 10,000 of revenue (kg/HK\$ 10,000)	3,290.2	3,058.6	1,937.1
Hazardous waste emissions (10,000 tonnes)	53.7	52.9	44.3
Hazardous waste emissions per HK\$ 10,000 of revenue (kg/HK\$ 10,000)	78.6	65.7	48.0
Non-hazardous waste emissions (10,000 tonnes)	240.7	308.8	562.1
Non-hazardous waste emissions per HK\$ 10,000 of revenue (kg/HK\$ 10,000)	351.8	383.9	609.0
Total number of regular employees	39,833	35,760	33,720
Employee training hours	601,096.0	1,047,839.5	921,898.9
Percentage of employee physical examinations (%)	99	100	99
Number of suppliers	2,150	2,670	2,129
Donations (HK\$ 10,000)	2,574.4	818.1	399.8

# HKEX ESG Reporting Guide

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Aspect B8: Community Investment		
General Disclosure		P73
B8.1	Focus areas of contribution (e.g. education, environmental concerns, labour needs, health, culture, sport).	P73
B8.2	Resources contributed (e.g. money or time) to the focus area.	P73-76



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