

**中国能源建设股份有限公司**  
CHINA ENERGY ENGINEERING CORPORATION LIMITED

# Environmental, Social & Governance Report 2022

*(A joint stock company incorporated in the People's Republic of China with limited liability)*

Stock Code: 3996    A Share: 601868

## ABOUT THIS REPORT

### REPORTING SCOPE

This report is applicable to China Energy Engineering Corporation Limited and its subsidiaries (hereinafter referred to as the “Company” or “we”, “China Energy”) and states the overall performance in the environmental, social and governance of its principal businesses (survey, design and consulting, construction and contracting, equipment manufacturing, civil explosion and cement production, investment and others) during the operation.

### REPORTING PERIOD

This report covers a period from 1 January 2022 to 31 December 2022 (the “Reporting Period”), and part of this report may be beyond the period to ensure completeness of the report.

### REPORTING PREPARATION PRINCIPLES

This report is prepared pursuant to the Guiding Opinions on the Fulfillment of Social Responsibilities by Central Enterprises of the SASAC of the State Council, the Guidelines on the Preparation of Social Responsibility Report of Listed Companies of the Shanghai Stock Exchange and the Environmental, Social and Governance Reporting Guide in Appendix 27 to the Rules of Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited and with reference to the Sustainability Standards issued by the Global Reporting Initiative (GRI Standards), the International Organization for Standardization (ISO)’s Guidance on Social Responsibility (ISO26000:2010) and the Guidelines for Social Responsibility Report of Chinese Enterprises of Chinese Academy of Social Sciences (CASS-CSR4.0). This report is prepared in accordance with the principles of materiality, quantitative, balance, and consistency.

**Materiality:** The materiality of ESG matters of the Company shall be determined by the board of directors, and communication with stakeholders and the process of identifying substantive issues and matrix of substantive issues are disclosed in this report.

**Quantitative:** The statistical standards, methods, assumptions and/or calculation tools for quantitative key performance indicators in this report, as well as the source of the conversion factors, are explained in the note of the report.

**Balance:** This report presents the Company’s performance during the Reporting Period in an unbiased manner so as not to improperly influence the decision or judgment of the readers of the report.

**Consistency:** The statistical methods and calibers used in the information disclosed in this report are consistent with previous years unless otherwise specified.

### DATA DESCRIPTION

The financial data is abstracted from the annual report of 2022 of the Company, in case of any discrepancies, the annual report shall prevail. Other data are mainly based on the statistics of internal systems of the Company and its subsidiaries. The amounts reported in this report are denominated in Renminbi unless otherwise specified.

Unless otherwise defined, capitalized terms used herein have the same meanings as those defined in the 2022 annual report of the Company.

## ABOUT THIS REPORT

### PLACE OF MAINTENANCE OF THIS REPORT

This report is published in electronic copy, which could be downloaded at the HKExnews's website ([www.hkexnews.hk](http://www.hkexnews.hk)) the Company's website ([www.ceec.net.cn](http://www.ceec.net.cn)).

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## CHAIRMAN'S STATEMENT

The year 2022 is the year of successfully holding the 20th Party Congress, an important year for China to embark on a new journey of building a modernized socialist country and advancing towards the second 100-year goal, and a crucial year for the implementation of the 14th Five-Year Plan. It is an extremely difficult and challenging year. In the past year, we adhered to the guidance of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, thoroughly studied and implemented the important speeches and instructions of General Secretary Xi Jinping, resolutely implemented the decisions of the Party Central Committee, the State Council and the work requirements of SASAC of the State Council. We insisted on the guiding principles of "Certain Opinions" and "1466" Strategy, centered on the "two strategic goals" of building "three new" China Energy and constructing a world-class enterprise, and adhered to the "two main lines" of high-quality development and scientific management. We systematically promoted several tasks including development, reform, management and party building. We have been working together, making efforts, responding to changes with stability, and consolidating stability with progress, and we have showed a new situation of comprehensive progress, comprehensive expansion, comprehensive improvement and comprehensive energy accumulation.

**We have been working steadily for a long time to promote the reform and development.** We focused on the general requirements of "three-to-be (三要)", insisted on strategic leadership, deepened reform and innovation, vigorously improved the modern enterprise system, continuously improved the market-oriented operation mechanism, strengthened technological innovation and transformation and upgrading, paid close attention to safety production, and made every effort to promote the high-quality development to achieve new results. The Company was awarded A grade in six major assessments including head of central enterprise, term business performance, three-year reform action, party construction, disciplinary committee and inspection; we jumped to 269th in the Global 500, ranked 2nd in the Top 150 Global Engineering Design Firms, and ranked 11th in the Top 250 Global Engineering Contractors. The amount of newly-signed contracts throughout the year has exceeded a trillion for the first time. In terms of the growth of international business contracts, we were among the top in the "going out" central enterprises. The Baihetan Hydropower Station, Hualong No.1 Demonstration Project and a number of "backbone of the country" undertaken by the Company have been put into operation. The Company's overall corporate strength, core competitiveness and brand influence continued to grow. The Company received 21 national quality engineering, 153 provincial and ministerial quality engineering awards, 230 provincial, ministerial and industry-level science and technology awards and 2,100 authorized patents.

**We pioneered and innovated to create the "three new" China Energy.** We thoroughly implemented the national "double carbon" strategy and insisted on building the "three new" China Energy of new energy, new infrastructure and new industry, which is a key step to promote the implementation of the "Certain Opinions" and the "1466" Strategy. We took the lead in establishing the "Four Alliances" including the "Three New Alliance", the Energy Storage Innovation Alliance, the Supply Chain Alliance and the Overseas New Energy Investment Alliance; we expressed the voice of "three new" China Energy in systems such as Boao Forum, ASEAN Expo and China International Import Expo, and forged a broad strategic consensus on green development. Throughout the year, the amount of newly-signed new energy contracts increased by 82.2% year-on-year; our overseas new energy and integrated smart energy business increased despite the downward trend. A number of strategic, exemplary and leading projects designed, invested or constructed by the Company, such as Chongzuo Comprehensive Energy Base, Tai'an Compressed Air Storage Energy, Qichun Pumped Storage Energy, Lanzhou Hydrogen Energy Industrial Park and Zaozhuang-Heze Cross Energy Fusion Project, have been launched in an orderly manner. The development potential of the "three new" China Energy has been accelerated and upgraded.

## CHAIRMAN'S STATEMENT

**We gathered talents and helped them achieve greatness.** We adhered to the view that development is the "first priority", talent is the "first resource" and innovation is the "first driving force", firmly established the concept of "grasping talent is grasping development" and put the development of talent resources in the highest priority. We systematically put forward the "4223" strategy of strengthening enterprises with talents, formulated and implemented the "Implementation Plan of the Talent Building Project of China Energy", and constructed the "1+5+N" talent cultivation system, which has comprehensively enhanced the core competitiveness of talents and promoted the development and growth of employees and enterprise together. We actively promoted the incentive measures such as position bonus, excess profit sharing, employee shareholding and project follow-on investment, by virtue of which, the passion of the staff for entrepreneurship has been unprecedentedly high; we improved the long-term mechanism of "I do practical things for the public", and handled more than 2,300 practical things in total, and the sense of achievement, happiness and security of the working public has been enriched.

**We stood together through rain and wind, showing responsibilities.** Guided by General Secretary Xi Jinping's important instructions on rural revitalization, we have taken the lead in consolidating and expanding the achievements in poverty eradication, promoting rural revitalization and fulfilling our social responsibility. The projects such as the Guangxi Tianxi Expressway and the Shaanxi Zhenba Pumped Storage Power Station invested and constructed by us have contributed to the rural revitalization in a comprehensive manner; we have solidly promoted assistance to Xinjiang and Tibet, and fully launched our counterpart support to Basu County in Tibet; we have done our best to deal with emergency rescue and disaster relief, participated in 26 social rescue and relief operations with more than 600 people and 360 units of equipment; we protected the lives and health of our employees to the greatest extent possible; we continued to strengthen our overseas responsibilities, actively assisted project sites in carrying out rescue and relief activities, actively improved the ratio of employment and skills of our site staffs, and actively participated in local charity activities.

As the national team, the main force and the leader in the field of energy, power and infrastructure construction, the Company always insists on the priority of new ideas, the lead of new thoughts and the victory of new strategies. We comprehensively integrate into the "three major economic forms" of digital smart economy, green and low-carbon economy and shared and integrated economy, and actively comply with and embrace the "three major development trends" of high-quality development, integrative development and integrated development. With higher standing, greater determination, more practical measures and better performance, the Company will accelerate the transformation of green, digital, intelligent and integrated "one innovation, three transformations" led by innovation, focus on "energy+", "green+" and "digital+", accelerate the in-depth integration of "seven networks" including energy network, transportation network, digital network, water network, ecological network, industrial network and cultural network, and make every effort to create a "three new" China Energy platform for new energy, new infrastructure and new industries. The Company will promote high-quality development, accelerate the construction of a world-class enterprise and make greater contributions and create greater value for economic and social development.

## COMPANY PROFILE AND CORPORATE GOVERNANCE

### • Company Profile

Founded on 19 December 2014, the Company is a joint stock company with limited liability established and cosponsored by China Energy Engineering Group Co., Ltd. (中國能源建設集團有限公司) (a central enterprise supervised and administered by the State-owned Assets Supervision and Administration Commission of the State Council), and its wholly-owned subsidiary, Electric Power Planning and Engineering Institute Co., Ltd. (電力規劃總院有限公司). The Company issued H shares under the initial public offering on 10 December 2015 and listed on the main board of The Stock Exchange of Hong Kong Limited (the “Stock Exchange”) (Stock Code: 3996.HK), and formally listed on the main board of the Shanghai Stock Exchange on 28 September 2021 (Stock Code: 601868.SH), realizing the listing of “A+H” shares.

The Company is an ultra large comprehensive group company that provides systematic, integrated, life cycle and package of development solutions and services to industries such as energy and power, infrastructure in the PRC as well as over the world. Its main businesses cover traditional energy, new energy and integrated intelligent energy, water conservancy and water affairs, eco-environmental protection, comprehensive transportation, municipal administration, property construction, real estate (new urbanization), building materials (cement, sand and stone aggregate, etc.), civil explosive, equipment manufacturing, capital (finance) and other fields, with a complete industrial chain integrating planning and consulting, evaluations and review, survey and design, construction and contracting and management, operational maintenance and investment operation, technical services, equipment manufacturing and building materials. The Company aims to become a world class group of “four types” and “six businesses” with global competitiveness (“four types” refers to the shared and integrated type, green and low-carbon type, digital smart type and healthy and civilized type; “six businesses” refers to a first-class energy integration solution provider, a first-class EPC contractor, a first-class infrastructure investors, a first-class comprehensive ecological environment management provider, a first-class urban comprehensive development operator, a first-class building materials, industrial products and equipment provider).

The Company successfully ranked as one of the Fortune 500 for nine consecutive years. In 2022, the Company ranked 269th in the Global 500, 2nd in the Top 150 Global Engineering Design Firms, 11th in the Top 250 Global Engineering Contractors, and 16th in the Top 225 International Engineering Design Firms. The Company has set up over 200 overseas branch offices in more than 90 countries and regions with its businesses extending to over 140 countries and regions outside China.

The Company always insists on “empowering beautiful China and building a better world” as the starting and standing point, follows the concept of social responsibility of “independent innovation, contributing to the society, scientific development and building harmony society”, upholds the organizational mission of “Bringing the Energy to the World” and the strategic vision of “industry-leading and world-class”, and always put the promotion of high-quality corporate development through all its work. The Company continues to enhance enterprise competitiveness, innovation, control, influence and risk resistance, and is committed to providing first-class quality project, products and services for China and the world, and creating maximum value for customers, shareholders, employees and society.

## COMPANY PROFILE AND CORPORATE GOVERNANCE

### • Corporate Governance

Diversity of the members of the Board is an important factor in maintaining a good standard of corporate governance, achieving sustainable development and meeting strategic objectives of the Company. The independence of the Board members is an important safeguard to protect the interests of the Company, especially those of the small and medium-sized shareholders.

The Board of Directors of the Company consists of nine Directors, three of whom are executive Directors and six of whom are non-executive Directors. The non-executive Directors came from various industries such as electricity, investment, manufacturing and finance, and their professionalism is highly relevant to the Company's businesses, among which 3 are independent non-executive Directors, accounting for 1/3 of the number of Directors. 3 of the non-executive Directors have professional background in accounting, including 1 from Hong Kong and 2 from the Mainland.

In 2022, the Company newly established the Supervisory Committee under the Board of Directors in accordance with the requirements of SASAC of the State Council. Currently, there are five special committees under the Board of Directors, namely the Strategy Committee, the Audit Committee, the Supervisory Committee, the Nomination Committee, and the Remuneration and Assessment Committee, of which, the Supervisory Committee and the Audit Committee operate in parallel with "one door, two licenses". Except for the Strategy Committee, all other special committees have a majority of external Directors, of which the members of the Audit Committee, Supervisory Committee, and Remuneration and Assessment Committee are all non-executive Directors, and the number of independent Directors reaches 2/3. The Company's Board of Directors and special committees are sound, the corporate governance structure is perfect, the governance system is standardized, and the Board of Directors can effectively perform its duties in accordance with the law.

The independent Directors of the Company are able to perform their duties conscientiously in accordance with the relevant requirements of laws and regulations and the Articles of Association of the Company to safeguard the interests of the Company as a whole, and in particular, to pay attention to the legitimate rights and interests of the small and medium shareholders from being damaged. The independent Directors perform their duties independently, they do not work for or receive remuneration from our controlling companies or connected companies, and are not subject to the influence of major shareholders of the Company, the de facto controller or other entities or individuals with interests in the Company.



# RESPONSIBILITY MANAGEMENT

## 2.1 ESG MANAGEMENT

- **Board Statement**

The Board of Directors is the highest decision-making body of the environmental, social and governance (“ESG”) work of the Company and bears ultimate responsibility for the ESG work of the Company. The Board of the Company has established a Social Responsibility Work Committee with the Chairman of the Board of Directors as the chairman. It is responsible for the review and decision-making of major ESG issues, formulating ESG-related work policies, strategic plans, annual work plans and annual budgets, assessing and determining risks and opportunities relating to ESG of the Company, overseeing the risk management and monitoring system, and regularly reviewing the Company’s ESG performance and progress in achieving its goals to evaluate on the results of our ESG performance.

As authorized by the Board of Directors, the Company’s Social Responsibility Working Committee has commenced the collection and disclosure of ESG information for the year 2022. This report is prepared pursuant to the Guiding Opinions on the Fulfillment of Social Responsibilities by Central Enterprises of the SASAC of the State Council, the Guidelines on the Preparation of Social Responsibility Report of Listed Companies of the Shanghai Stock Exchange and the Environmental, Social and Governance Reporting Guide in Appendix 27 to the Rules of Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited and with reference to the Sustainability Standards issued by the Global Reporting Initiative (GRI Standards), the International Organization for Standardization (ISO)’s Guidance on Social Responsibility (ISO26000:2010) and the Guidelines for Social Responsibility Report of Chinese Enterprises of Chinese Academy of Social Sciences (CASS-CSR4.0).

This report is issued after consideration and approval by the Board of Directors.

## RESPONSIBILITY MANAGEMENT

### • ESG Management Mechanism

The Company strictly complies with the Environmental, Social and Governance Reporting Guide in Appendix 27 to the Rules of Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited and the Guidelines on the Preparation of Social Responsibility Report of Listed Companies of the Shanghai Stock Exchange, and attaches high importance to ESG governance works.

The Company formulated and implemented the Management Measures of Social Responsibilities. Under the leadership of the Social Responsibility Committee, the office will join hands with various departments of the headquarters and the business division to discuss the operations and ESG performance of the Company, analyze ESG substantive issues, and evaluate the relevant performance and impact of material issues. We have set up a long-term Plan-Do-Check-Act (PDCA) social responsibility management mechanism.

The Company formulated the “ESG Construction and Disclosure Compliance Guidelines” to clarify the key points of ESG disclosure with reference to the regulatory requirements of the Hong Kong Stock Exchange, Shanghai Stock Exchange and ESG corporate standards.

In accordance with the Guiding Opinions on Better Fulfillment of Social Responsibilities by State-owned Enterprises (《關於國有企業更好履行社會責任的指導意見》) of the SASAC of the State Council, and the relevant requirements of the third edition of the Environmental, Social and Governance (ESG) Reporting Guide of the Hong Kong Stock Exchange, and with reference to the United Nations 2030 Sustainability Goals and the GRI Sustainability Reporting Standards issued by the Global Sustainability Standards Board and other related standards, and combining the key concerns of international ESG rating agencies, we have further optimized and improved the social responsibility indicator system, enhanced the pertinence and effectiveness of the work. Meanwhile, the Company has formulated a mature ESG performance reporting process, optimized the quality of ESG information disclosure year by year based on the internal and external environments, and continuously improved the professional ability in ESG management.



ESG Management Organization System

## RESPONSIBILITY MANAGEMENT

### 2.2 COMMUNICATION WITH STAKEHOLDERS

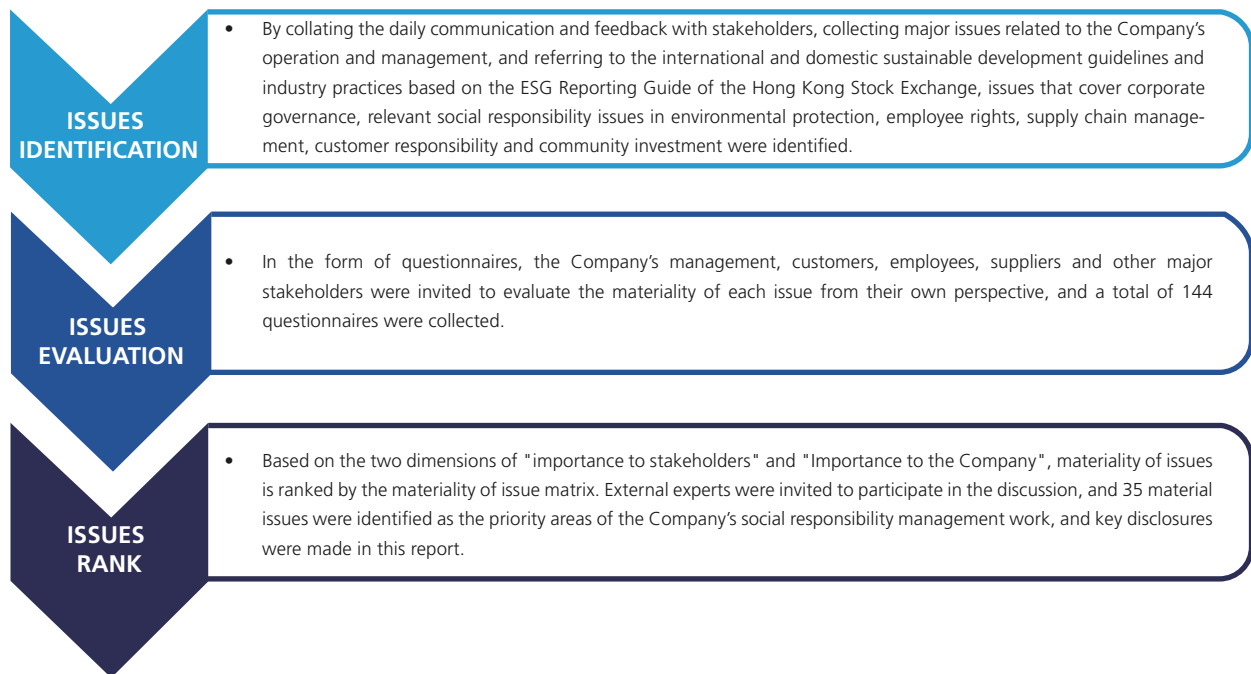
The Company attaches great importance to communication with stakeholders. The Company has established a diversified, stable and effective communication channel and feedback mechanism to keep abreast of and respond positively the appeals of the stakeholders, improve the Company's ESG performance in a targeted manner, and reduce social risks in corporate operations.

Stakeholders	Communication mechanism	Stakeholder's requisition	The Company's response
Government	<ul style="list-style-type: none"> <li>Policy guidance</li> <li>Report at the special meeting</li> </ul>	<ul style="list-style-type: none"> <li>Response to national strategies</li> <li>Legal and compliance operation</li> <li>Pay taxes according to laws</li> </ul>	<ul style="list-style-type: none"> <li>Service national strategies</li> <li>Uphold steady operation</li> <li>Compliance with laws and regulations</li> </ul>
Shareholders	<ul style="list-style-type: none"> <li>General meeting</li> <li>Board Meeting</li> <li>Daily communication</li> </ul>	<ul style="list-style-type: none"> <li>Continuous creating values and return</li> <li>Regulate corporate governance</li> <li>Transparent information disclosure</li> </ul>	<ul style="list-style-type: none"> <li>Improve operating results</li> <li>Enhance corporate governance</li> <li>Timely release of information</li> </ul>
Customers	<ul style="list-style-type: none"> <li>Customers service hotline</li> <li>Satisfaction investigation</li> <li>Visiting</li> <li>Company's website</li> </ul>	<ul style="list-style-type: none"> <li>Promote technology innovation</li> <li>Guarantee project quality</li> <li>Provide satisfactory service</li> </ul>	<ul style="list-style-type: none"> <li>Improve innovation mechanism</li> <li>Enhance quality management</li> <li>Improve service system</li> </ul>
Partners	<ul style="list-style-type: none"> <li>Regular communication</li> <li>Business communication and cooperation</li> <li>Participate in industry association</li> </ul>	<ul style="list-style-type: none"> <li>Mutual benefit</li> <li>Common development</li> </ul>	<ul style="list-style-type: none"> <li>Carry out strategic cooperation</li> <li>Participate in the formulation of industry standards</li> </ul>
Employees	<ul style="list-style-type: none"> <li>Employees representative meeting</li> <li>Daily communication</li> <li>Corporate culture activities</li> </ul>	<ul style="list-style-type: none"> <li>Reasonable remuneration and welfare</li> <li>Healthy and safe working environment</li> <li>Occupational development and training</li> <li>Care for employees</li> </ul>	<ul style="list-style-type: none"> <li>Protect legitimate rights and interests</li> <li>Ensure safety production</li> <li>Improve training system</li> <li>Organize employee activities</li> </ul>
Community	<ul style="list-style-type: none"> <li>Learn of community</li> <li>Formulate action plan</li> </ul>	<ul style="list-style-type: none"> <li>Participate in community construction</li> <li>Care for vulnerable groups</li> </ul>	<ul style="list-style-type: none"> <li>Promote rural revitalization</li> <li>Promote community development</li> <li>Support Xinjiang and Tibet</li> <li>Carry out public welfare activities</li> </ul>
Environment	<ul style="list-style-type: none"> <li>Insight into domestic and international trends</li> <li>Master advance technology</li> <li>Improve environmental awareness</li> </ul>	<ul style="list-style-type: none"> <li>Compliance with environmental protection laws and regulations</li> <li>Provide environmental business</li> <li>Energy saving, emission reduction and carbon reduction</li> <li>Protect ecological environment</li> </ul>	<ul style="list-style-type: none"> <li>Reduce pollutants discharge</li> <li>Development of environmental protection industry</li> <li>Improve energy efficiency</li> <li>Construct green projects</li> </ul>

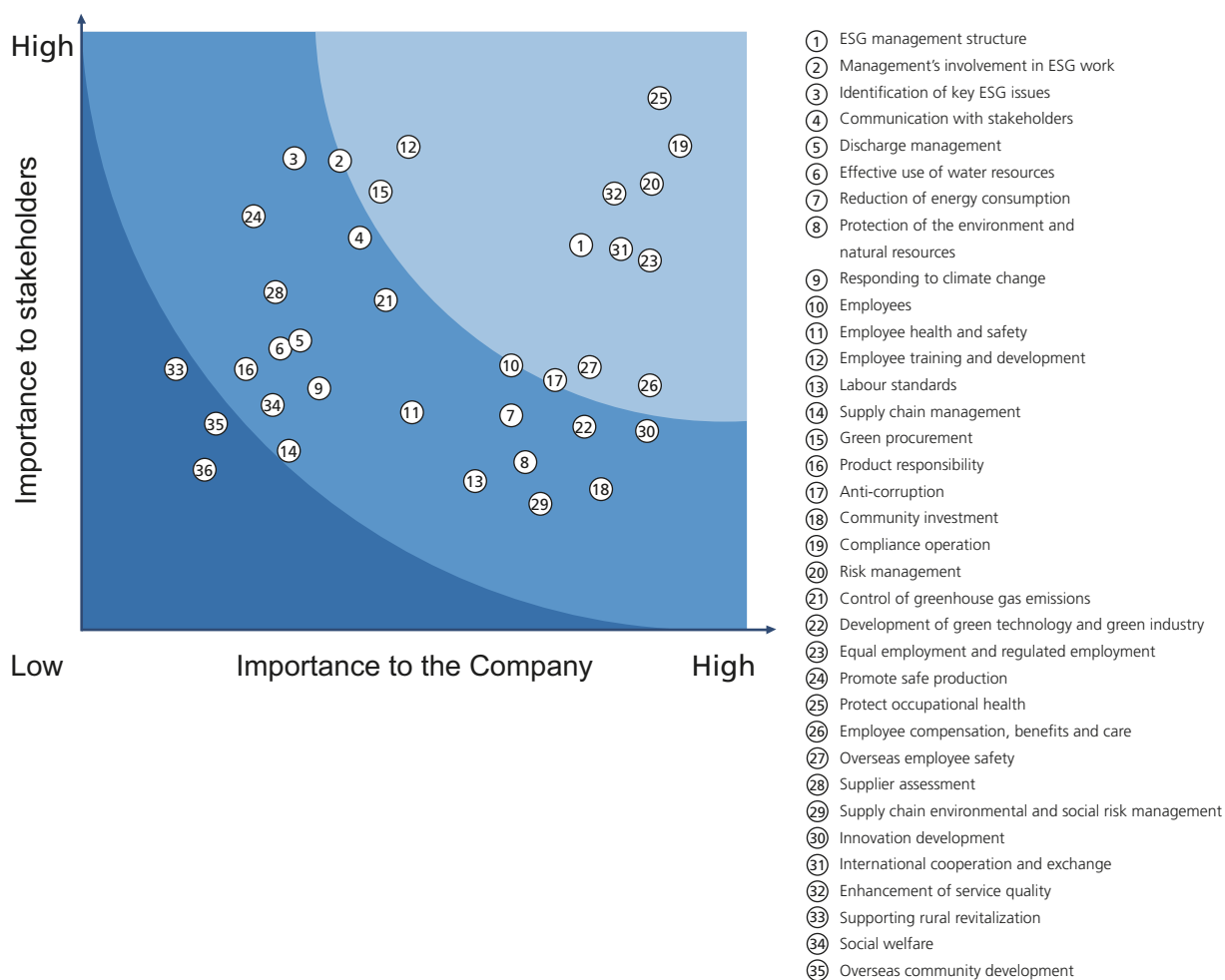
## RESPONSIBILITY MANAGEMENT

## 2.3 IDENTIFYING MATERIAL ISSUES

The Company rigorously treated the demands of all stakeholders, integrated the demands of all parties into the Company's development strategies, actively assumed social responsibilities, and continued to improve the Company's sustainable development capabilities. In 2022, the Company continued to identify, evaluate and screen sustainable issues that are important to the Company and stakeholders by collecting and recording stakeholders' feedback through questionnaires, so as to accurately and completely disclose the information of operation and management as possible as practicable.



## RESPONSIBILITY MANAGEMENT



## GREEN DEVELOPMENT

### 3.1 COPING WITH CLIMATE RISKS

Global climate change is becoming increasingly severe, posing a huge challenge to the sustainable development of human society. Despite the uncertainty of the international situation, the direction of global green development and transformation is unshakable. In 2022, in the face of the complicated international situation, China was determined to promote the strategic determination of green and low-carbon development, made a good start around the “double carbon” target, and formed a good atmosphere of active support and participation from the whole society.

- **Governance**

<b>Board</b>	To review and decide on major issues related to climate change; to formulate work direction, strategic planning, annual work plan and annual work budget; to evaluate and determine the climate risks and opportunities of the Company and to supervise the risk management and control system; to review the progress of achieving the targets periodically; to evaluate and assess the work results.
<b>Management</b>	To evaluate, manage and monitor climate change issues; to set related targets and goals; to allocate costs and resources to manage climate change issues; and to coordinate across departments so to facilitate effective collaboration.

- **Strategy**

Guided by Xi Jinping Thought on Socialism with Chinese Characteristics in the New Era, the Company comprehensively studied and implemented the spirit of the 20th Party Congress. The Company adheres to the new energy security strategy of “four revolutions and one cooperation” of General Secretary Xi Jinping as the fundamental guideline, accurately grasps the national target requirements of accelerating energy transformation, and systematically promotes the implementation of the “1253” principle of carbon peaking and carbon neutrality of China Energy Engineering. In other words, the Company shall adhere to the “one leading” (guided by the national carbon peaking and carbon neutrality strategic goals), grasp the “two keys” (building a new energy system and a new power system), follow the “five paths” (low-carbon energy supply, electrification of energy consumption, industrialization of new energy technologies, institutionalization of low-carbon development and coordination of carbon neutrality responsibilities), and focus on the “dialectical relationship among three parties” (clean and low-carbon fossil energy based on coal, intensive renewable energy based on wind and photovoltaic, and systematic efficiency improvement and energy conservation based on major users). The Company will fully serve the transition of China’s energy structure to green and low-carbon, and always be a pioneer in the energy revolution.

In 2022, the Company closely focused on the key proposition of green and low-carbon energy development to promote relevant work in depth, and of China Energy (《中國能建踐行碳達峰、碳中和“30·60”戰略目標行動方案(白皮書)》). Also, the Company seized the historic opportunity brought by carbon peaking and carbon neutrality. Based on the analysis of the current state of development of the Company’s new energy industry, its resources and market environment, the Company led the leapfrog development of its new energy industry by focusing on the “30·60” system solution “one center” and the “two supports” of hydrogen energy and energy storage, and made breakthroughs in the development of the energy revolution and energy transformation.

## GREEN DEVELOPMENT

The Company insisted on promoting its own green and low-carbon transformation and serving the country and the industry to reduce carbon emissions. The Company coordinated development and safety. And, with green and low-carbon transformation of energy as a start point, industrial field and construction segment emission reduction as the key, and green and low-carbon technology innovation as the driving force, the Company deeply and solidly promoted the carbon peaking and contributed to the national realization of carbon peaking.

### • Identification and Response to Climate Change Risks

Category of risk	Type of risk	Description of risk	Response to Risk
Transition risk	Policy risk	Tightening of carbon emissions policy	Construct a clean, low-carbon, safe and efficient energy system, increase the development of renewable energy; research and apply energy-saving technologies; and actively participate in the national carbon market
		Fluctuation of carbon trading price	
	Cost risk	Increased cost of energy saving technology retrofit	Implement innovation-driven development strategy, develop technical cooperation, and reduce R&D costs; develop integrated energy utilization projects
Entity risk	Acute risk	Extreme weather events affect normal business operations	Improve emergency plans, standardize emergency measures for emergencies, and purchase relevant insurance
		Damage to equipment	
		Threats to employee life and safety	
	Chronic Risk	Persistent high temperatures and sea level rise	Improve flood control management of coastal enterprises

### • Objective

During the 14th Five-Year Plan period, we aim to reduce total annual carbon dioxide emissions by 1.38%, and decrease carbon dioxide emissions per RMB10,000 annual output value (revenue) by 3.9%, with 2021 as the base year. In 2022, the total carbon dioxide emissions decreased by 6.2% year-on-year.

## GREEN DEVELOPMENT

### • Our Actions

During the Reporting Period, the Company vigorously pursued initiatives to address climate change, including but not limited to:

- prepared the “Carbon Peaking Action Plan” and the Group’s work targets and task lists for the 14th and 15th Five-Year Plan periods, laying a solid foundation for achieving carbon peaking by 2030;
- prepared the Work Plan on Strengthening New Energy Policy Research and Information Reporting, organized the establishment of a mechanism for collaborative research on new energy policies by our subsidiary, Electric Power Planning & Engineering Institute (電力規劃設計總院), and issued regular briefings on the work of new energy business;
- issued the “Notice on the Authorization of Approval of New Energy Project Company”, authorized the direct subsidiaries of the Company and the enterprises directly under Gezhouba Group and CPECC (excluding various project companies) to make their own decisions on the establishment of new energy project company with a combined 100% shareholding, completed the optimization and adjustment of the new energy business management system of the headquarters and established a new energy business department under the Company’s Marketing and Development Division;
- issued the “Notice on the Adjustment of Relevant Indicators for the Assessment of Operating Performance of Subsidiaries”, after which, the incentive points for the assessment related to the new energy business were expanded from the original 3 points to 11 points, and additional points were set for over-achieving the target values;
- prepared and published the “New Energy Project Development Assessment Plan”;
- initiated the establishment of the “New Energy, New Infrastructure, New Industry” Alliance (the “Three New Alliance”) and coordinated internal and external resources to develop the market in groups;
- under the guidance of the national energy authorities, we have taken the lead in the preparation of national-level planning, including the “14th Five-Year Plan for Energy Development”, the “14th Five-Year Plan for Electricity Development” and the “14th Five-Year Plan for Science and Technology Innovation in the Energy Segment”, proposed the overall goal of energy science and technology innovation during the “14th Five Year Plan” period, and formulated a technical roadmap for China’s energy development and project layout focusing on advanced renewable energy, new power systems, safe and efficient nuclear energy, etc.;
- participated in strategic studies on “dual carbon” organized by provincial governments, including “Study on Hubei Province Carbon Peaking and Carbon Neutrality Strategic Targets and Implementation Path”, “Study on Hubei Province New Energy Base Layout”, “Jiangxi Province Power Industry Carbon Peaking Path”, “Jiangxi Province Energy Security Supply Implementation Plan under Carbon Peaking Targets”, and “Study on the Medium- and Long-term Pumped Storage Planning Layout of the Central China Power Grid”, which has enhanced the Company’s influence in the field of energy and power planning and “dual carbon” consultation.



## GREEN DEVELOPMENT

### Case: Green and low-carbon “China Energy’s Solution” at the United Nations Climate Change Conference

In November 2022, China Energy was invited to participate in the “China Corner” of the 27th United Nations Climate Change Conference, where it co-hosted a side event with the China Electricity Council on the theme of “Actions and Prospects for Climate Change in the Power Sector” and participated in an offline exhibition to showcase to the international community the “China Energy’s Solution” on achieving the goal of “carbon peaking and carbon neutrality”.



Representative of China Energy introduces the “China Energy’s Solution” at the “China Corner” Event of COP27 Conference

### 3.2 DEVELOPMENT OF ENVIRONMENTAL INDUSTRIES

Adhering to the concept of environment-friendly development, the Company continuously improved the level of clean energy production and utilization, vigorously promoted the clean energy business and environmental protection water business, improved energy utilization efficiency, realized low-carbon clean energy utilization, and extended the layout of green industry chain.

## GREEN DEVELOPMENT

### • Clean Energy Business

The Company carried out the national carbon peaking and carbon neutrality strategy and implemented the “Action Plan for Implementing the “30·60” Carbon Peaking and Carbon Neutrality Strategic Goal (White Paper) of China Energy”, and made breakthroughs in the energy revolution and energy transformation development.

During the Reporting Period, the Company successfully implemented a number of clean energy projects, including but not limited to:

- The first batch of PV units of Zhai'an PV project in Ningming County, Chongzuo City, the first ground-based centralized PV project in the integrated energy base of “wind, photovoltaic, hydropower, thermal power and storage” in Chongzuo City invested and constructed by China Energy, were successfully connected to the grid for power generation. The project has an installed capacity of 69.66 megawatts on the DC side and 50 megawatts on the AC side, with an average annual power generation capacity of 77.7127 million kilowatt-hours, saving 23,741.2 tons of standard coal per year and reducing carbon dioxide emissions by about 62,496.6 tons per year;
- The first batch of 11 MW wind turbine units of the SPIC's Jieyang Shenquan II Offshore Wind Power Project constructed by China Energy Guangdong Institute under EPC general contracting, was successfully connected to the grid. The 11 MW wind turbine connected to the grid is the world's largest single-unit capacity wind turbine in batch production, with an annual design capacity of a single wind turbine of 38.2 million kWh, which can meet the annual electricity demand of 19,000 households;
- The world's first 300 MW Non-combustion Compressed Air Energy Storage Demonstration Project, invested by China Energy and constructed with the participation by CPECC Zhongnan Institute of China Energy started construction. Upon completion, the project will be the first in the world in the field of non-combustion compressed air energy storage, the first in the world in the scale of energy storage and the first in the world in conversion efficiency;
- The Changlongshan Pumped Storage Power Station, the largest pumped storage power station in East China constructed by China Gezhouba Group Three Gorges Construction Engineering Co., Ltd. of China Energy, was put into operation to generate electricity. With a total installed capacity of 2,100 MW, the Changlongshan Pumped Storage Power Station ranks among the top three pumped storage power stations built and under construction in China;
- The first demonstration project of hydrogen energy ecology in China, the Zhejiang Lishui Jinyun Water Hydrogen Biomass Near Zero Carbon Demonstration Project, which was constructed by China Energy Zhejiang Thermal Power was launched. The project uses renewable energy to produce and store hydrogen, and through the technology demonstration of hydrogen plus biogas to synthesize bio-natural gas, it realizes the joint application of hydrogen and biomass for energy storage.

## GREEN DEVELOPMENT

### • Environmental Protection and Water Utilities Business

The Company endeavored to become a builder of beautiful China by vigorously developing green industries and conducting environmental protection business in subdivisions such as utilization of renewable resources, water environment treatment, sewage sludge treatment, new road materials and solid waste treatment.

During the Reporting Period, the key environmental protection and water utilities projects undertaken by the Company including but not limited to:

- China Energy Gezhouba Ecological Environmental Protection Co., Ltd. (中國能建葛洲壩生態環保有限公司) operates 63 water plants (61 sewage plants and 2 water supply plants, with the scale of water treatment reaching 2,638,050,000 tons/day) in more than ten provinces and municipalities in China. In 2022, its sewage plants/treatment stations treated about 460 million tons of sewage annually. The treated effluent was used for water reuse, which had a very obvious effect on water saving;
- The Hainan Maiwan Water Conservancy Hub Project, constructed by China Energy Gezhouba Group, is the No. 1 project in the construction of the “Hainan Water Network” and is one of the 172 major water conservancy projects identified by the State Council, which can raise the flood control standard of Haikou City from one in 50 years to one in 100 years after completion, and the project will also improve the downstream water ecological environment, to ensure the sustainable economic and social development of the Qiongbai area, and it is important to promote the construction of Hainan Free Trade Port.

### 3.3 ENHANCING ENVIRONMENT MANAGEMENT

As a global leader in the field of energy, power and infrastructure construction, the Company insists on the path of harmonious development between production and operation and environmental protection. The Company gradually established an environmental protection management system to properly coordinate the relationship between production and operation activities and the ecological environment, and is on the path of sustainable development of harmonious coexistence between the enterprise and the ecology.

During production operation, the Company strictly abides by relevant laws and regulations such as the Environmental Protection Law of the People’s Republic of China, the Law of the People’s Republic of China on the Prevention and Control of Water Pollution, the Law of the People’s Republic of China on the Prevention and Control of Atmospheric Pollution, the Law of the People’s Republic of China on the Prevention and Control of Environmental Noise Pollution, the Law of the People’s Republic of China on Prevention of Environmental Pollution Caused by Solid Waste, the Law of the People’s Republic of China on Soil and Water Conservation, the Regulations of the People’s Republic of China on the Protection of Wild Plants, the Regulations on Environmental Protection Management of Construction Projects, National Emergency Response Plan for Environmental Emergencies. Meanwhile, the Company improved own environmental protection system, and formulated and implemented environmental management systems such as “Management Regulations on Environmental Protection and Energy Saving”, “Management Regulations on Production Safety Accident, Quality Accident and Environmental Incident ” and “QHSE Reward and Punishment Regulations”. The Company implemented accountability system and strengthened supervision to prevent risks. During the Reporting Period, there was no environment pollution event nor other environmental non-compliance incidents within the Company.

## GREEN DEVELOPMENT

During the Reporting Period, the major measures taken by the Company to further strengthen its environmental management included but not limited to:

- established a technical management system related to energy saving and emission reduction;
- implemented green construction planning, adopted green construction measures, and incorporated requirements for energy conservation and energy utilization, material conservation and material utilization, water conservation and water resource utilization, land conservation and construction land protection, and environmental protection into the construction organization design;
- issued the Company's technical standards system construction program, deepened the construction of a technical standard system in the field of green and low carbon, and proposed and launched the first batch of enterprise technical standards in 20 directions, including wind power, high-altitude wind energy, photovoltaic, solar thermal, electrochemical energy storage, compressed air energy storage and hydrogen energy;
- formulated the relevant environmental objectives.

Category	Objective	Progress in 2022
<b>Goal for waste reduction</b>	Continuously promote waste separation and disposal and recycling, to continuously reduce emissions.	The amount of hazardous waste generated was 1,068 tons, representing a significant decrease compared to 2021, and the initial results were achieved in respect of emission reduction.
<b>Goal for saving energy</b>	Decrease average annual comprehensive energy consumption by 2%, and decrease average annual comprehensive energy consumption per RMB10,000 output value by 3% during the "14th Five-Year Plan" period.	The comprehensive energy consumption was 2,147,564 tons of standard coal, a year-on-year decrease of 1%.
<b>Goal for water saving</b>	Vigorously promote water conservation and water resource utilization, and increase the utilization rate of wastewater year by year.	We continued to improve the wastewater recycling technology, and reduced sewage discharge.

## GREEN DEVELOPMENT

### • Emissions

The Company's emissions mainly include sulphur dioxide, nitrogen oxides, chemical oxygen demand, ammonia nitrogen, construction waste and other non-hazardous wastes generated from production and operation. During the Reporting Period, the Company complied with relevant environmental laws, regulations and ordinances, implemented the "three simultaneous" system (environmental protection facilities are designed, constructed and put into production and use at the same time with the main project), fulfilled the requirements of environmental protection acceptance and emission permit, and did its daily operation management and equipment maintenance and repair to reduce waste gas, waste water, noise and solid waste (including hazardous waste) at source, standardized the control and disposal procedures, and reduced the impact on the surrounding environment and sensitive points.

#### *Exhaust management*

The Company effectively controlled emissions of sulfur dioxide, nitrogen oxides, ammonia nitrogen and other exhaust gases and carbon dioxide greenhouse gas emissions by adjusting its production capacity structure and promoting environmental technology renovation. The main measures taken by the Company include but not limited to:

- Gezhouba Cement Company of China Energy issued the Notice on Further Accelerating the Promotion of Alternative Fuels, supervised each unit to conduct market research on alternative fuels, formed a market research report on alternative fuels, and compiled statistics and analyzed the application of alternative fuels in each unit to actively promote the use of alternative fuels, reduce coal consumption, and effectively control exhaust gas and greenhouse gas emissions;
- Gezhouba Cement Company of China Energy insisted on "saving first" carbon emission reduction and promoted 17 new technologies in production units, such as nanometer insulation materials, flue chamber hanging bricks, microcrystalline feeding tubes, raw material mineralizing agent, coal saving agent, magnetic suspension fan, permanent magnetic direct drive motor and various intelligent inspection equipment in laboratory, to reduce carbon emission and promote the application of alternative fuels. During the Reporting Period, carbon dioxide emissions per unit of clinker product in terms of energy decreased by 4.7% compared to the same period last year.

#### *Waste management*

The Company actively promoted the application of new technologies, new equipment, new materials and new processes, banned the use of high energy-consuming equipment and construction processes that were explicitly eliminated by the State government, preferred green and environmentally friendly building materials, and promoted the reduction of construction waste at source and recycling.

## GREEN DEVELOPMENT

The Company's emissions during the Reporting Period are summarized as follows<sup>①</sup>:

Unit: RMB

Item of indicator	Unit of indicator	2021	2022
Total greenhouse gas emissions <sup>②</sup>	Tonnes CO <sub>2</sub> e	6,623,188	<b>6,514,825</b>
Direct greenhouse gas emissions	Tonnes CO <sub>2</sub> e	3,588,119	<b>3,575,567</b>
Indirect greenhouse gas emission	Tonnes CO <sub>2</sub> e	3,035,069	<b>2,939,258</b>
Unit greenhouse gas emissions for operating revenue	Tonnes CO <sub>2</sub> e/RMB ten thousand	0.21	<b>0.18</b>
Total sulfur dioxide emissions	Tonnes	8,385	<b>7,178</b>
Total nitrogen oxides emissions	Tonnes	17,252	<b>15,601</b>
Chemical Oxygen Demand (COD)	Tonnes	6,966	<b>6,285</b>
Total ammonia nitrogen emissions	Tonnes	1,061	<b>969</b>
Total hazardous wastes <sup>③</sup>	Tonnes	2,263	<b>1,068</b>
Unit total hazardous wastes generated for operating revenue	Tonnes/RMB ten million	0.73	<b>0.30</b>
Total non-hazardous wastes <sup>④</sup>	Tonnes	47,589,712	<b>27,106,162</b>
Unit total non-hazardous wastes generated for operating revenue	Tonnes/RMB ten thousand	1.52	<b>0.76</b>

Notes:

- ① Wastes statistics covers the core businesses of the Company in the PRC including survey, design and consulting services, and construction and contracting.
- ② The calculation of greenhouse gas emission is based on the Greenhouse Gas Protocol – Corporate Accounting and Reporting Standards (2012 revised) issued by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD), and the Fifth Evaluation Report issued by Intergovernmental Panel on Climate Change (IPCC).
- ③ The Company's hazardous waste includes hazardous waste in the equipment sector, hazardous waste in the civil explosion sector, and other hazardous waste generated in daily office operations. All hazardous waste generated will be treated by qualified professional institutions for harmless treatment.
- ④ Non-hazardous wastes include construction waste and sludge generated by sewage treatment plant under the environmental protection segment. In particular, in 2022, 26,784,161.92 tons of waste slags were generated during construction, and 322,000 tons of sludge were generated from sewage treatment plants under the environmental protection sector.

## GREEN DEVELOPMENT

### • Use of Energy and Resources

The Company has formulated the Environmental Protection and Energy Conservation Management Regulations of China Energy Engineering Corporation Limited and other management systems in strict accordance with the Energy Conservation Law of the People's Republic of China. The Company implemented the requirements of energy conservation throughout the entire production and operation cycle, strengthened technical upgrading and transformation, improved the efficiency of energy use, and build a resource-saving and environmentally friendly enterprise.

#### *Energy management*

The major energy conservation measures the Company has taken during the Reporting Period include but are not limited to:

- Jingmen Company, a subsidiary of Gezhouba Cement Company under China Energy, transformed the coal mill pipe cyclone, which reduced ventilation resistance and power consumption of coal mill. After transformation, the dust removal efficiency of cyclone reached 88%, the resistance of pipeline system decreased to 570 Pa, the frequency of main exhaust fan of coal mill decreased by approximately 1Hz, and the power consumption of coal mill decreased by 0.5kwh/t. The impact of kiln tail dust on pulverized coal has been reduced, the purity of pulverized coal has been improved, and the coal consumption and power consumption of clinker has been reduced;
- The Xiyang 100 MW photovoltaic project constructed by Shanxi Power Construction of China Energy has been put into operation with full capacity, with an estimated annual average power generation of approximately 160 million kWh, saving approximately 60,000 tons of standard coal, reducing approximately 100,000 tons of carbon dioxide emissions and providing clean power for 110,000 households;
- The Company has been approved to build Anhui Engineering Research Center for Building Energy Efficiency and Green Construction Technology, to carry out research and development of ten key topics in the two directions of building energy efficiency and green construction, resulting in 30 intellectual property rights including patents and five scientific research achievements including participation in standards editing. Through the building green low-carbon technology research to enable the R&D content and achievements of the center to run through the whole life cycle of green construction, striving to reach the industry-leading level.

## GREEN DEVELOPMENT

**Case: Gezhouba Cement Company promoted energy saving and consumption reduction with high standards**

Gezhouba Cement Company under China Energy has formulated the Scoring Rules for Production Basic Management and Production Benchmarking Management of China Gezhouba Group Cement Co., Ltd. based on the current situation of enterprise management and high goal orientation, to establish and improve the benchmarking statistics and analysis mechanism, effectively improve the benchmarking management level of each unit, and guide subsidiaries to reduce production consumption. During the Reporting Period, the standard coal consumption of the clinker of Gezhouba Cement Company was 102.6 kgce/t, representing a year-on-year decrease of 2.0%, and the comprehensive power consumption of the clinker was 50.7 kwh/t, representing a year-on-year decrease of 2.9%. Yicheng Company, Songzi Company and other subsidiaries mainly used urban domestic waste and partially used waste textiles as alternative fuels. The thermal substitution rate was approximately 10%, and the standard coal consumption of clinker was reduced to approximately 98 kgce/t. The energy consumption level has been significantly reduced.

During the Reporting Period, the main resource utilization of the Company is summarized as follows<sup>①</sup>:

Unit: RMB

Item of indicator	Unit <sup>②</sup>	2021	2022
Electricity consumption	Ten thousand kWh	442,241	<b>434,761</b>
Gasoline consumption	Tonnes	58,570	<b>57,162</b>
Diesel consumption	Tonnes	937,859	<b>885,111</b>
Natural gas consumption	Ten thousand cubic meters	557	<b>629</b>
Fuel oil consumption	Tonnes	62	<b>35</b>
Purchased power consumption	Million kilojoules	0	<b>78,017</b>
Other energy consumption	Tonnes of standard coal equivalent	166,269	<b>71,908</b>
Comprehensive energy consumption <sup>③</sup>	Tonnes of standard coal equivalent	2,170,014	<b>2,147,564</b>
Unit comprehensive energy consumption for operating revenue	Tonnes of standard coal equivalent/ RMB ten thousand	0.070	<b>0.060</b>
Total production water consumption	Tonnes	1,613,645	<b>25,752,061</b>
Unit water consumption for operating revenue	Tonnes/RMB ten thousand	0.052	<b>0.718</b>



## GREEN DEVELOPMENT

### Notes:

- ① As the Company is a comprehensive solution provider in the power industry, the statistical scope of resource consumption covers its core businesses located in the PRC such as survey, design and consultancy, construction and contracting, etc. Indicators on packaging materials did not constitute material ESG related issues of the Company and therefore have not been disclosed. The scope of disclosure does not cover the energy consumption of the building materials business segment.
- ② The statistical units of energy-saving operation index data are presented according to the original statistical units.
- ③ The comprehensive energy consumption is calculated in accordance with the relevant conversion factors provided in the National Standards of the People's Republic of China, General Rules for the Calculation of Comprehensive Energy Consumption (GB/T2589-2020).

### Case: Liaoning green expressway smart energy project

In 2022, NEPC of China Energy won the bid for and launched the Liaoning green expressway smart energy project. The project built the photovoltaic power generation project with an installed capacity of 56.42 MW, and built 122 new charging station with more than 300 charging piles in the expressway service areas. The project installed solar stands and laid solar crystal silicon components mainly in the applicable scenarios such as expressway service areas, toll stations, tunnels, etc. in Liaoning Province. The direct current was converted into alternating current through string grid-connected inverters, and was grid-connected for self-use after AC aggregation with surplus electricity to grid. Additionally, the construction of charging stations has been carried out, and the service areas with installation conditions achieved full coverage of charging stations.

After the completion of the project, it will effectively promote the energy transformation of the highway, improve the proportion of green electricity use, and completely achieve the "zero-carbon highway" in terms of electric power supply, and achieve the goal of carbon neutrality in advance.

## GREEN DEVELOPMENT

### 3.4 ECOLOGICAL AND NATURAL RESOURCES PROTECTION

The Company coordinated the management of project investment, construction and operation during the whole process and in all aspects. The Company adhered to the ecological civilization construction policy of harmonious coexistence between human and nature by preparing and implementing the project environmental protection plan, and strengthening the coordinated protection and management of various ecological elements of mountains, rivers, forests, fields, lakes and grasses. The Company applied new technologies, methods and processes beneficial to ecological protection to minimize the impact of the project on the natural environment, and proactively adopted measures for ecological restoration and biological diversity protection to minimize and compensate for damage to the environment. During the Reporting Period, Electric Power Planning & Engineering Institute, a subsidiary of China Energy, won the "Power Energy Conservation and Environmental Protection and Climate Change Response Award" of China Electricity Council.

During the Reporting Period, the major measures that the Company has taken to protect the ecological environment and the biodiversity where the project locates include but are not limited to:

- The Company has taken full consideration of environmental protection factors during construction planning and scheme design to carry out environmental factor assessment and control;
- It reasonably planned temporary construction roads to reduce vegetation damage, used grid protection to improve slope stability and designed reasonable interception of drainage channels to avoid soil and water loss and protect ecologically sensitive areas;
- It protected natural habitats, wetlands, forests, wildlife corridors and agricultural land, strictly prohibited logging and hunting, and maintained the original landforms;
- It reconstructed the temporary roads, spoil grounds, gravel yards, among others, of the completed projects in a timely manner, and adopted artificial propagation measures such as transplanting turf and sowing grass seeds.

#### Case: Construction of the largest single biomass RNG cogeneration project in China

CSEPD of China Energy invested and contracted the largest single biomass RNG cogeneration project in China - Anhui Wuhe modern energy RNG cogeneration project. The project relies on cow dung and straw as raw materials, which are turned into methane after treatment and generate electricity through internal combustion generator units. It can provide over 70 million kilowatt hours of pure green electricity and 40,000 tons of food-grade industrial steam each year, as well as harmless high-quality organic fertilizer, so as to improve the agricultural ecological environment, and realize efficient development of the inner circle of agricultural production.

## GREEN DEVELOPMENT

### Case: Large green ecological water conservancy and hydropower projects on the gobi border

Gezhouba Municipal Company of China Energy has undertaken the foundation treatment works, flood relief works, water diversion and power generation works and related road works of the Xinjiang Dashixia Water Conservancy Project. Since the commencement of the project, the project department has strictly followed the principle that “the project construction must strictly implement the simultaneous design, construction and operation of environmental protection facilities and main works”, and has protected ecological environment comprehensively.

#### Investing RMB100 million to protect fish

Seven species of indigenous fish live in the Kumarak River, including the *Schizothorax biddulphi* and the *Diptychus maculatus*, both of which are national second-level protected wild animals. Gezhouba Municipal Company has built a fish collection and transportation system to ensure the connectivity of the Kumarak River and to address the blocking effect of the dam on the barrier effect on fish population after its completion, as well as a fish breeding and releasing station to supplement the fish resources in the Kumarak River through artificial breeding and releasing. The investment in protecting ecological environment of the Kumarak River amounted to more than RMB100 million.

#### Optimizing process to promote ecological harmony

Due to the local drought with little rainfall, considering that the downstream ecological environment and agricultural irrigation water would be affected during the impoundment period of the project, the project was designed to construct a temporary diversion tunnel for initial impoundment with an investment of more than RMB2 million to protect the river ecological environment. Meanwhile, in order to cope with the cold winter at the project site, the project department increased the capital investment in water intake, optimized the design scheme by adopting the stratified intake scheme with stoplog gate, which can avoid the adverse effect of the low temperature water discharged from the Dashixia Water Conservancy Project on downstream aquatic ecology and agricultural irrigation.



Xinjiang Dashixia Water Conservancy Project constructed by Gezhouba Municipal Company of China Energy

## EMPLOYEE DEVELOPMENT

### 4.1 DIVERSITY AND INCLUSIVENESS

Upholding the “people-oriented” concept, the Company has formulated and implemented the Regulations for the Management of Labor Employment, Detailed Implementation Rules for the Management of Labor Contracts and other systems, and established a standardized recruitment process and remuneration system in strict accordance with the requirements of the Labor Law of the People’s Republic of China, the Labor Contract Law of the People’s Republic of China, the Social Insurance Law of the People’s Republic of China and other national and local laws and regulations to protect the legitimate rights and interests of employees.

The Company regulates employment in accordance with the law and opposes all discriminatory behaviors. In the process of recruitment, the Company treats employees of different nationalities, region, ethnicity, color and religious beliefs fairly and impartiality, ensuring that the recruitment information is open, the recruitment process is fair, and the best are selected. As long as the applicant conforms to the labor policy of the country where he/she locates, and his/her educational background, ability, characteristics, among other, meet the requirements of relevant position, and an agreement on the remuneration is reached, the Company would accept the applicant and sign a labor contract according to law. Besides, the Company actively implements the strategy of internationalization and localization of talents to solve the problem of shortage of professional and technical personnel required for expanding the international market and implementing overseas projects.

The Company strictly abides by relevant guidelines, rules and regulations for preventing child labor or forced labor in international, national and operating locations, such as the Prohibition of Child Labor Provisions, firmly prohibits the employment and use of child labor and opposes any form of forced labor. The Company has established a standard staff recruitment information collection and approval process, carefully examines the age of candidates, and does not recruit child labor or mandatory employment. During the Reporting Period, the Company did not have any violations of the standards, rules and regulations concerning child labor and compulsory labor of internationally used locations, countries and places of operation.

The Company recruited 7,500 college students who graduate in 2023, an increase of 25% over 2022, the largest scale since the establishment of the Company. Among them, the Company has actively done a good job in recruiting college graduates for the three provinces of Tibet, Qinghai and Xinjiang, as well as Tibet-related states and counties in Sichuan, Yunnan and Gansu, providing more than 1,500 positions for the “three places”, the largest number in the past years.

During the Reporting Period, the Company had 114,786 employees in total, all of which are full-time, with employee turnover rate of 3.3%.

## EMPLOYEE DEVELOPMENT

### Employment of the Company's employees<sup>1</sup>:

Name of item	Unit	2021	2022
Total number of employees	Person	115,325	114,608
<b>By employment type</b>			
Full-time	Person	115,325	114,608
Part-time	Person	0	0
<b>By gender</b>			
Male employees	Person	91,850	91,890
Female employees	Person	23,475	22,829
<b>By age</b>			
Aged 35 and below	Person	41,220	40,270
Aged 36 to 45	Person	28,556	28,584
Aged 46 to 54	Person	33,685	33,754
Aged 55 and above	Person	11,864	12,000
<b>By title and skill level</b>			
Senior professional	Person	2,647	2,843
Deputy senior	Person	15,950	16,871
Intermediate	Person	22,398	23,581
Junior	Person	17,629	18,493
Senior technician	Person	2,137	2,351
Technician	Person	6,745	6,714
Senior worker	Person	12,023	12,132
Intermediate worker	Person	3,949	3,950
Junior worker	Person	1,132	998
Other personnel	Person	30,715	26,675
<b>By educational background</b>			
PhD holder	Person	343	372
Postgraduate	Person	13,205	14,565
Undergraduate	Person	46,785	48,868
College	Person	23,453	22,752
Technical secondary school and below	Person	31,539	28,051

Note:

- 1 At present, the Company has not established a statistical mechanism for employee turnover rate by gender, age and geographic area, and are therefore not disclosed. The Company will try to establish a statistical and disclosure mechanism in the future.

## EMPLOYEE DEVELOPMENT

Name of item	Unit	2021	2022
<b>By position</b>			
Management personnel	Person	38,254	<b>40,483</b>
Professional technical personnel	Person	39,690	<b>40,050</b>
Skilled operation personnel	Person	22,789	<b>20,005</b>
Other personnel	Person	14,592	<b>14,070</b>
<b>By region</b>			
Domestic	Person	107,273	<b>107,670</b>
Overseas	Person	8,052	<b>6,938</b>

## 4.2 HEALTH AND SAFETY

### • Guarantee Occupational Health

Adhering to the principle of “prevention first and combination of prevention and control”, the Company prevents and controls from the source according to law, and implements multiple policies to protect the health of workers. In accordance with the Occupational Disease Prevention Law of the People’s Republic of China, the Plan for Handling Public Health Emergencies in the PRC and the Measures for the Supervision and Administration of Occupational Health Surveillance, the Company incorporated the occupational health and safety requirements into the Management Regulations on Safety Production, the Safety Production Responsibility System, the Plan for Handling Public Health Emergencies in the PRC and other systems to coordinate the occupational health work and ensure the occupational health and safety of employees. During the Reporting Period, there was no occupational health emergencies occurred.

The major measures taken by the Company to enhance occupational health management during the Reporting Period include but are not limited to:

- conscientiously implemented the various requirements for occupational health proposed by superiors, strengthened organizational leadership, and made overall arrangement and deployment of occupational health;
- improved the management system of occupational hazard prevention and control and occupational health monitoring at all levels, and strictly implemented the occupational health management responsibilities and measures;
- carried out occupational hazard factors monitoring and appraisal and prevention and control of occupational hazard from the source;
- strengthened occupational health publicity and training to enhance the staff’s awareness and ability of occupational health protection;

## EMPLOYEE DEVELOPMENT

- guaranteed the investment in occupational health, strengthened the management of labor protection supplies, and standardized the setting of occupational hazard protection facilities and warning signs;
- strengthened occupational health examination, discovered occupational contraindications and health damage of labors in a timely manner, and effectively prevented, controlled and eliminated occupational diseases.

### • Promote Safe Production

The Company thoroughly implemented the spirit of General Secretary Xi Jinping's important instructions on production safety, as well as the deployment of the Party Central Committee and the State Council, and firmly established the concept that "safety management is the first productivity and the first management". In accordance with the Opinions of the CPC Central Committee and the State Council on Promoting Reform and Development of Work Safety, the Production Safety Law, the Measures for Work Safety Incident Reporting, Investigation and Disposition, the Administrative Regulations on the Work Safety of Construction Projects, the Interim Provisions on the Supervision and Management of Work Safety at Central Enterprises and other national laws and regulations, the Company has compiled and amended comprehensive safety management systems such as the Management Regulations on Safety Production, the Safety Production Responsibility System and the Measures for Management of Safety Risk.

During the Reporting Period, the Company newly compiled the Administrative Measures for Production Safety Incidents, Quality Incidents and Environmental Incidents and the QHSE Rewards and Punishment Measures, and amended the Emergency Management Measures to ensure the continuous and effective operation of the safety production management system. The safety production situation of the Company was generally stable throughout the year.

Safety management system of China Energy (listing)	
Management Regulations on Safety Production	Implementation Measures for Supervision of Work Safety Performance
Safety Production Responsibility System	Contracting (Subcontracting) Safety Management Measures
Measures for Management of Safety Risk	Administrative Measures for QHSE Education and Training
Administrative Measures for the Inspection and Management of Production Safety Accidents	QHSE Rewards and Punishment Measures
Management Measures for Project Process Safety	Administrative Measures for Production Safety Incidents, Quality Incidents and Environmental Incidents
Emergency Management Measures	Detailed Rules for the Evaluation and Scoring of QHSE of Subsidiaries

## EMPLOYEE DEVELOPMENT

During the Reporting Period, the major measures taken by the Company to further promote the safety production management include but are not limited to:

- Strengthening the organization and implementation of safety guarantee work, carrying out the control of the list of “TOP 3” high-risk projects, implementing the system of leadership, 24-hour duty at important posts and “zero reporting” during important periods of time and major events, and strengthening early warning for holidays and extreme weather to ensure safety and stability in an all-round and at a high standard;
- Strengthening the governance of the safety production system, releasing the “14th Five-Year Plan” for Safety Production Action, clarifying the development goal of “twelve in place” (i.e. awareness in place, risk identification and control in place, system construction in place, measures implementation in place, effective rigid training in place, resources allocation in place, management organization and capacity in place, dynamic supervision and inspection in place, reward and punishment mechanism implementation in place, emergency management and emergency response in place, lessons learning and sharing in place, and culture construction in place) and the “234” project construction development path (“2” refers to the promotion of the “big safety” management system and the construction of essential safety capabilities; “3” refers to the consolidation of grass-roots responsibilities, firm management foundation and good basic skills; “4” refers to the promotion of QHSE specialization, standardization, digitalization, and refinement), and putting forward the “nine safety” action; focusing on the “five further improvements”, carrying out actions of the year of safety production improvement in depth, and comprehensively promoting the three-year action of special rectification and the consolidation and improvement of the “234” project construction; adhering to both strict management and penetration management, and amending five systems including the QHSE Reward and Punishment Measures; supervising management and guidance services differentially, and clarifying QHSE supervision classification of enterprises above level 3.0; clarifying the responsibilities of all parties in the transfer of property rights during the transition period of optimization and adjustment of the Company’s layout as well as reorganization and integration of the organizational structure to ensure that there are no gaps or blind spots in safe production;
- Accurately preventing and controlling QHSE risks, releasing the Safety Risk Control Checklist in Key Areas, and focusing on 99 key operation links to identify 170 risk control measures; introducing the “1+7” process safety management method, taking the QHSE planning for projects as the starting point to improve safety management efficiency; strengthening risk warning supervision, updating key information such as engineering projects, “people, materials, machinery”, and insisting on the “weekly warning, monthly analysis and quarterly judgment” of safety production risks;
- Strengthening the inspection and rectification of potential risks, focusing on seasonal risks and important periods, organizing a series of investigation and rectification work such as safety production inspection of the whole group, safety production inspection in spring and autumn, and safety production investigation and rectification at the end of the year and the beginning of the year; coordinating implementation of 27 special rectification works deployed and arranged by the SASAC of the State Council and the National Energy Administration, etc., keeping track of the base number of “small, scattered and remote” power generation projects, and focusing on supervising major hazard sources;



## EMPLOYEE DEVELOPMENT

- Focusing on the “key minority” of key enterprises and promoting the responsible persons of enterprises to perform their duties; focusing on “new, partial and small” projects, carrying out integrated QHSE supervision on 35 projects by combining on-site supervision with off-site inspections, and headquarters inspections with inspections by third-party institutions; studying and releasing the QHSE Violation List for Engineering Project which clarifies 244 violation cases as the basis for supervision and inspection, “anti-violation” work and accountability standards, insisting on “seeing what happened and seeing who was involved”, and continuing to carry out accountability for violations;
- Strengthening emergency management, closing following the requirements of “twelve in place”, and improving the “1+14+N” emergency plan system on the basis of fully studying and analyzing current safety risks and comprehensively investigating emergency resources; strengthening emergency drills, and carrying out more than 2,000 drills of disaster escape, self-rescue and mutual rescue with 48,000 participants; strengthening the construction of emergency rescue teams, establishing more than 1,700 emergency rescue teams, 26,000 emergency rescue personnel and more than 3,000 units (sets) of large emergency rescue equipment; after the “6.1” Sichuan Lushan earthquake, “6.10” Sichuan Malvkang, earthquake and “9.5” Sichuan Luding earthquake, organizing post-earthquake investigation and rectification promptly to ensure normal implementation of production and operation activities; actively integrating into the national emergency rescue system, participating in 26 emergency rescue operations such as typhoon “Hinnamnor”, and dispatching more than 600 person-times of manpower and more than 360 units (sets) of equipment.

### Safety production of the Company:

Item	Unit	2021	2022
Investment in safety production	RMB0'000	267,395.38	<b>361,809.2</b>
Full-time personnel on safety	Person	4,482	<b>4,562</b>
Total number of employees participating in safety training	0'000 person-times	45.2	<b>45.4</b>
Safe production accidents	Time	10	<b>3</b>
Lost working days due to work-related injuries <sup>2</sup>	Day	72,000	<b>18,000</b>

Note:

- 2 The lost working days due to work-related injuries was calculated with reference to the Standards for Lost Working Days for Accident Injury-GB-T15499-1995, and the lost working days for the death of an employee were based on 6,000 working days.

## EMPLOYEE DEVELOPMENT

Item	Unit	2022	2021	2020
Full-time employees died in production accidents in the past three years	Person	0	1	0
Death rate per thousand full-time employees in the past three years	Person/thousand persons	0	0.01	0
Number of employees died in production accidents of contractors (subcontractors)	Person	3	11	13

- Overseas Safety Management**

To promote the standardization and specialization of the Company's overseas social security management, establish and improve the long-term mechanism of overseas social security management, reduce overseas social security risks, effectively prevent various social security incidents and protect the safety of overseas institutions and personnel, pursuant to the "1+15" security management system document of the SASAC and the Administrative Measures for the Safety of Overseas Institutions and Personnel of China Energy Engineering Corporation Limited, and based on the actual operation of the Company's overseas projects (institutions), the Company has formulated and issued the Detailed Implementation Rules for Overseas Social Security Management of China Energy Engineering Group Co., Ltd., which makes specific requirements on overseas social security management institutions and responsibilities, risk assessment management, security measures allocation management, expatriate personnel management, education and training management, security cost investment, early warning and emergency management, supervision and inspection, assessment and evaluation, etc. so as to effectively ensure overseas security and stability.

#### 4.3 DEVELOPMENT AND TRAINING

The Company has formulated the Detailed Implementation Rules for the Management of Staff Training at the Headquarters of China Energy Engineering Corporation Limited and the Administration Measures for the Evaluation of Training System of China Energy Engineering Corporation Limited. The Company insists that development is the "first priority", talent is the "first resource" and innovation is the "first impetus", firmly establishes the concept of "seizing talent is crucial for development", gives top priority to the development of human resources, and strengthens the role of talent in leading development.

## EMPLOYEE DEVELOPMENT

### • Employee Training

The Company attaches great importance to the education and training of employees. The Company issued the Construction Plan for Big Training System of Energy China Engineering Corporation Limited, proposed to build a big training system with “big pattern, big platform, big resources, full system and full coverage”, established regional training centers, and built the Company’s Party School, talent development institute, two training schools (Three Gorges Vocational College of Electric Power (三峽電力職業學院), Beijing Electric Power Construction Training School (北京電建培訓學校)) and three offline training platforms. The Company also launched the online learning platform of the Company and conducted online training.

In 2022, the Company carried out more than 30 training projects at the headquarters level in a combination of offline and online manner, including the rotation training on the spirit of the 20th CPC National Congress, training on the three-year action of reform, young cadres training, training for international project managers, QHSE management training for enterprise leaders, technology and innovation policies training, investment business training, training on transformation and development of power construction enterprises, new energy business training, compliance training and “Qing Ma” training, which further improved the political literacy, corporate identity, business level and comprehensive ability of employees in all business systems, further enhanced the cohesion and combat effectiveness of employees, and strongly supported the transformation and development of the Company.

#### Case: Carrying out “daily lesson” to guide employees to keep learning

The Company carried out “daily lesson” learning activities during the flexible working and homeworking period due to pandemic prevention and control. The activities lasted for four weeks, offering 11 high-quality courses to employees and covering modules such as humanistic quality, workplace quality, economic management, innovative thinking and physical and mental health. In addition, the Company provided employees with learning places and rich content, including more than 3,000 high-quality courses and 190,000 e-books, through the “Energy China learning” platform. The employees actively participated in the “daily lesson”, actively empowered themselves and achieved positive results.

### • Employee Development

In 2022, the Company organized member enterprises to improve the integrated position sequence scheme, built the supporting performance, salary and training system, and formed the “1+3” staff career development channel management framework with position management as the core element, remuneration management as the incentive means, performance management as the key measure, and training management as the enhancement means, so as to promote the horizontal and vertical connectivity, path finding and rapid growth of various talents. During the Reporting Period, the Company completed the post grading of 100,074 employees.

The Company has formulated and implemented the Implementation Plan of Talent Energy China Project, and built the “1+5+N” talent training system to cultivate a core talent team in line with the Company’s “1466” strategy in a more scientific, efficient and pragmatic manner. The Company focused on the cultivation of high-quality talents in key fields, highlighted high-end leadership and points to areas, and created a multi-level, multi-classified, multi-form, practical and dynamic talent cultivation pattern.

## EMPLOYEE DEVELOPMENT

### **Case: Initiating the integration of young cadre selection and training with “special poverty alleviation” of enterprise**

Focusing on the “1466” strategy and the “4223” Strategy of “strengthening the enterprise with talents”, the Company set up 4 modules, 13 courses and 64 hours of courses, focusing on the theoretical knowledge and business ability required to help young cadres perform their duties, and selected 114 professional talents and outstanding young cadres to work in its 14 revitalized enterprises for three years. Through training in grassroots enterprises and key positions at the grassroots front-line, the Company achieved accurate support for cadres and talents, and promoted the reform and development of dispatched units and high-quality development of China Energy. The Company focused on precise post selection, personnel selection and assignment to ensure that all dispatched personnel are what is needed; focused on training, assessment and evaluation, supervision and inspection in place to ensure that all dispatched personnel are in place; focused on organizational care guarantee, remuneration incentive guarantee, selection and appointment guarantee to ensure that all dispatched personnel are paid, which enriched and innovated the cultivation path and measures for young cadres in China Energy.

### **Case: New energy business series of special training**

Based on the talent construction project, the Company has conducted a series of training sessions covering new energy policy interpretation, new energy project development, wind power projects, offshore wind power, pumped storage, compressed air storage, etc., and conducted a series of training sessions on new energy business for employees in relevant positions, with a total of six sessions. During the Reporting Period, a series of training on new energy business was held online through the “Energy China Learning” platform, including “training on wind farm engineering cost” and “training on interpretation of new energy development planning and macro policies”. A total of nearly 3,700 participants from the relevant subsidiaries attended the training, helping to promote the construction of the “three new” talents in new energy, new infrastructure and new industry.

### **Case: Innovative “knowledge, action, thought” model of Youth Marxism training courses**

In order to cultivate a group of composite talents and reliable successors who have both faithful political character, solid theoretical background and outstanding management ability and can take up the important responsibility of enterprise reform and development, the Company held a Youth Marxism training course in 2022, in which 38 participants from the headquarters and 25 subsidiaries of the Company attended. The training is divided into three modules of centralized training, daily study and practical teaching, and five ways of theoretical study, exchange and research, the Youth Marxism Reading Club, the Youth Marxism Storytelling Club and on-site teaching. The “Youth Marxism” concentrated on 80 hours of course teaching, through the practical learning method around the eight themes, including the party building work, ideological and political work, “double carbon” technology and others, to carry out researches. The Company also carry out the “Four Ones” reading activities on a regular basis: a weekly card, a monthly theme, a monthly in-depth reading experience, and a monthly online reading sharing session.

## EMPLOYEE DEVELOPMENT

### Employee training of the Company<sup>3</sup>:

Item	Unit	2021	2022
Total training hours	0'000 hours	360.83	<b>422.12</b>
<b>Number of trained employees by training content</b>			
Job training	0'000 person-times	55.26	<b>62.37</b>
Continuing education training	0'000 person-times	4.58	<b>5.38</b>
Other training	0'000 person-times	16.82	<b>21.64</b>

Note:

- 3 The percentage of employees trained by gender and employee category and the average number of hours of training completed by each employee by gender and employee category are not available and are therefore not disclosed.

## EMPLOYEE DEVELOPMENT

### 4.4 HAPPINESS AND CARE

The Company attaches great importance to employee care. The Company deeply implemented the spirit of the “Healthy China” Planning Outline and the Opinions of the State Council on the Implementation of Healthy China Action, integrated employee health management into the implementation of the Company’s Certain Opinions, actively promoted the employee health culture, carried out the theme action of “Healthy China Energy”, and paid attention to the physical health, mental health and good social adaptability of employees, so as to promote the development and growth of employees and enterprises together.

During the Reporting Period, the Company carried out the theme action of “ ‘Six Ones’ joint study, joint construction and integration (聯學聯建·融通融合)” with high quality. Party organizations at all levels studied and discussed together in the form of “twinning”, and jointly implemented “a set of warm-hearted practical things” for employees, taking this as an opportunity to carry out a series of condolence, assistance and cultural and sports activities.

To implement the requirements of “Healthy China Energy” action, the Company has completed 831 “heart harbors”, 497 “staff book houses” and 628 basic fitness and entertainment facilities at the front line of projects, and carried out a large number of cultural and sports activities according to local conditions so as to build the project camp into a “staff home” full of modern life elements and flavor. The Company further promoted the “Six Ones” action of employee care and humanistic care to extend to the grassroots and overseas so as to send warmth to the hearts of employees.

In response to the psychological health problems of employees, we have set up a staff care hotline, held guidance specialist lectures, carried out psychological counseling for psychological crisis of employees, formed a normalized and long-term mechanism for serving employees, built a stable and harmonious enterprise atmosphere, and improved the health level and happiness index of employees.

## EMPLOYEE DEVELOPMENT

### Case: Carrying out standardized camp construction and striving to improve staff environment

China Energy creates healthy “hard” environment with standardized construction of camps. Through the idea of pre-planning, standardized design, factory production, intensive supply and assembly construction, the Company has standardized the camp layout, office and living places, facilities, furniture and household appliances, etc. involved in the project camp, which has greatly improved the production and living environment of employees. China Energy creates healthy “soft” environment with “patriotic health movement into the enterprise”. The Company has formulated 9 specific requirements for each of the four key points of healthy construction site, healthy canteen, civilized dormitory and sanitary toilet, totaling 36 specific requirements.

As for the special overseas environment, the Company strengthened camp safety protection, and scientifically and systematically planned and implemented the physical defense, technical defense and civil defense systems of camps based on the characteristics of countries where projects are located, which better guaranteed the personal safety of the Company’s overseas employees. As for the poor medical conditions overseas, the Company has set up professional medical teams to work overseas, and strengthened the allocation and training of overseas special medical forces.



Standardized camp construction achievement of the Company



The Company created the camp “happy farm”

## EMPLOYEE DEVELOPMENT

**Case: Building a psychological care platform and strengthening key sympathy and assistance**

CSEPD of China Energy has paid great attention to the immediate needs of employees, and has made active and effective exploration in the area of "heart harbor".

- Meeting the needs of employees and building a psychological care platform. In May 2022, CSEPD officially established the "CSEPD Psychological Consultation Studio". CSEPD allocated over 100 square metres of office space, carried out professional design and planning, and introduced advanced consulting equipment, to strive to build it into a heart harbor trusted by the majority of employees.
- Establishing scientific thinking and consolidating the foundation of psychological care. For many years, CSEPD has insisted on carrying out research on the ideological situation of employees, introduced Gallup Q12 model for scientific and quantitative analysis, and formed a dynamic analysis report on the ideological situation of employees to truly reflect the needs of employees. Additionally, CSEPD continued the physical examination, result analysis, diet suggestions, etc. CSEPD regularly carried out cultural and sports activities that are popular among employees, and attracted more employees to participate in the form of cultural and sports associations and "youth homes", so as to achieve simultaneous attention and improvement of physical and mental health.
- Building a linkage mechanism to enrich the carrier of psychological care. After understanding the needs of employees, CSEPD organized a psychological volunteer service team and external professional teachers to teach at the front line of the project according to the needs, and strengthened the popularization of mental health knowledge. As for overseas employees, CSEPD organized online disease prevention and cure training, carried out psychological ice-breaking counseling for new employees and lectures on maternal health care knowledge, and strengthened sympathy and assistance for sick or difficult employees.



The Company established the psychological consultation studio



The Company established the psychological volunteer service team



## SUPPLY CHAIN MANAGEMENT

The Company has formulated the Measures on Managing Suppliers of Energy China Engineering Corporation Limited and the Measures on Managing Supplier Blacklist of Energy China Engineering Corporation Limited to implement a strict supplier management system. Under the management principle of “unified database establishment, hierarchical management, strengthened supervision, dynamic evaluation, resource sharing, joint risk prevention, strategic cooperation, mutual benefit and win-win”, with the goal of improving quality and efficiency and scientifically selecting the best, and based on the results of the subcontractor database, the Company further expanded the scope of management, and supplemented and improved measures to manage suppliers and services. Focusing on the key business of “supplier system construction, classification and grading, assessment and evaluation, credit management, resource sharing, and risk prevention”, the Company built a supplier management system covering the whole process of supplier sourcing, admission, use, evaluation, and withdrawal to achieve more efficient and scientific supplier selection and control. By the end of 2022, the Company had a total of 41,633 suppliers.

During the Reporting Period, the major measures taken by the Company to further strengthen supply chain management include but not limited to:

- The Company convened the supply chain management promotion meeting, and anchored the goal and task of “building an industry-leading, full chain efficiently collaborated, independent, safe and controllable modern supply chain management system”. The Company focused on nine core systems, forged nine business capabilities, and comprehensively promoted the upgrading of procurement management to supply chain management, which enabled supply chain management to truly become the “important integrator of resource allocation, important guarantor of stable production, important contributor to value creation and important supporter of enterprise development”;
- The Company formulated the Procurement Supervision and Management Measures of Energy China Engineering Corporation Limited, built a pre-, in- and post-procurement supervision system, and implemented hierarchical supervision and management. The Company also intensified procurement supervision, used the “big data procurement supervision” function at the electronic procurement platform to accurately locate the problem, and regularly figured out the clues of the problems in the aspects of bid rigging, conversion of whole into zero and failure to recruit through data comparison to continuously improve the accuracy of supervision;
- The Company revised and optimized the Measures on Managing Suppliers of Energy China Engineering Corporation Limited to clarify the content of life-cycle management of suppliers and the source of supplier risk information, risk factors and hierarchical risk tips; established a unified supplier credit evaluation system, and classified suppliers according to the assessment and credit evaluation results;
- The Company revised and optimized the Measures on Managing Supplier Blacklist of Energy China Engineering Corporation Limited to standardize the conditions and procedures for the identification of blacklist of group-level suppliers, and propose requirements for the prohibition and removal of suppliers in the blacklist;

## SUPPLY CHAIN MANAGEMENT

- The Company revised and optimized the Procurement Management Measures of Energy China Engineering Corporation Limited to clarify the applicable conditions and procurement process of each procurement method. The Company has unified the relevant processes through the electronic procurement platform, realized the unified standard, unified platform, unified application and unified supervision of the whole group, and ensured the legal compliance, openness, transparency and traceability of procurement;
- The Company has completed the development, construction, acceptance and online trial operation of the customer and supplier sub-platform of China Energy based on the first phase of the construction of the integrated supply chain management platform, and realized the digital management of the whole life cycle of suppliers. By standardizing the audit standards for suppliers, the Company cleaned up suppliers with no business transactions and poor performance, increased the supplier registration audits, and completed a total of 130,000 supplier audits, which effectively prevented and improved the problems such as imprudent supplier selection, lax management and control, poor performance and substandard suppliers;
- the Company cooperated with the discipline inspection commission to identify supplier evaluation and group-level blacklist;
- The Company vigorously promoted the selection of carbon neutral, green, energy-saving and environmentally friendly materials, starting from the public available environmental interests, selecting products with green design, green technology, green manufacturing, and green packaging to reduce carbon emissions and maximize the benefits to society and the natural environment;
- During the bidding process, the Company strictly required suppliers to provide quality, environment, occupational safety and health certifications, and to sign an integrity undertaking.

**Basic information of the Company's suppliers:**

Item	Unit	2022
<b>Total number of suppliers by supplier classification</b>		
• Commodity supplier	/	<b>15,902</b>
• Subcontractor	/	<b>14,054</b>
• Service provider	/	<b>11,677</b>
<b>Number of suppliers by region</b>		
• Domestic	/	<b>41,510</b>
• Overseas	/	<b>123</b>

## PROVIDE HIGH-QUALITY PROJECTS, PRODUCTS AND SERVICES

### 6.1 BUILDING QUALITY CONSTRUCTION

As the national team, main force and leader in the field of energy, electricity and infrastructure construction, China Energy serves the national strategy in an all-round way, acts as the most reliable force of the Party and the State, builds quality construction, constructs energy super projects, and consistently contributes to the accelerated construction of the modern energy system in China.

#### Case: Baihetan Hydropower Station was fully put into operation for power generation

In December 2022, 16 sets of million-kilowatt hydroelectric generator units in the Baihetan Hydropower Station, the world's largest and most technically difficult hydropower project under construction with the largest single unit capacity, were put into operation for power generation. So far, the world's largest clean energy corridor spanning 1,800 kilometers and comprising 110 hydropower units with a total installed capacity of 71.695 million kilowatts, has been fully completed. Since the start of preparation in 2010, a number of enterprises under China Energy have deeply involved in the construction of the Baihetan Hydropower Station and related supporting infrastructure.



The Baihetan Hydropower Station involved by the Company was fully put into operation for power generation

## PROVIDE HIGH-QUALITY PROJECTS, PRODUCTS AND SERVICES

### **Case: The first ground-based centralized photovoltaic project in the Chongzuo “wind, photovoltaic, hydropower, thermal power and storage” integrated comprehensive energy base**

The first batch of photovoltaic units of the Chongzuo City Ningming County Zhai'an photovoltaic project, the first ground-based centralized photovoltaic project in the Chongzuo “wind, photovoltaic, hydropower, thermal power and storage” integrated comprehensive energy base, invested and constructed by the Company was successfully connected to the grid for power generation. The Chongzuo “wind, photovoltaic, hydropower, thermal power and storage” integrated comprehensive energy base is the cooperation project with the largest single investment at the China-ASEAN Expo, involving the construction of the Chongzuo “wind, photovoltaic, hydropower, thermal power and storage integrated energy base” and environmental governance, mining area restoration, smart city, water conservancy as well as transportation, land consolidation, regional development and other fields. After completion, the average annual power generation is approximately 77.7127 million kWh, saving 23,741.2 tons of standard coal per year and correspondingly reducing the greenhouse gas carbon dioxide emission by approximately 62,496.6 tons per year. While realizing ecological benefits, the project has improved the three-dimensional value-added use of land, built modern and efficient agricultural comprehensive economy, and driven sustainable and healthy development of local agricultural and rural economy.



The first ground-based centralized photovoltaic project  
in the Chongzuo integrated comprehensive energy base invested and constructed by the Company

## PROVIDE HIGH-QUALITY PROJECTS, PRODUCTS AND SERVICES

### Case: The first ultra-gigawatt-level offshore wind power base in eastern Guangdong was completed

The CGN Shanwei Jiazi 900 MW offshore wind farm project is located in the sea area south of Hudong Town, Shanwei City, Guangdong Province. Both the project and the CGN Houhu 500 MW offshore wind farm project were surveyed and designed by Guangdong Institute of China Energy, and both projects together formed the first ultra-gigawatt-level offshore wind power base in eastern Guangdong. Upon full completion, the base can provide approximately 4.5 billion kilowatt-hours of clean electricity each year, reduce the equivalent consumption of standard coal by approximately 1.45 million tons, and reduce the carbon dioxide emissions by approximately 3.5 million tons, which has positive significance to the national ecological environment protection, energy supply security, the construction of new power system, the development of clean energy industry and the achievement of the "dual carbon" goal.



CGN Shanwei Jiazi 900 MW offshore wind farm surveyed and designed by the Company

## 6.2 STRICTLY CONTROL OF ENGINEERING QUALITY

The Company has formulated the quality control and assessment review system and clarified the objectives, responsibilities and specific measures of quality control in strict accordance with the Product Quality Law of the People's Republic of China, Construction Project Quality Management Regulations, the Mandatory Provisions of the Engineering Construction Standards of the People's Republic of China, the Quality Control Standards for Engineering Construction Survey Enterprises, the Quality Control Standards for Project Engineering Construction Enterprises, the Construction Quality Evaluation Standards for Construction Projects, the Unified Standards for Quality Acceptance of Construction Engineering Construction, and other national laws and regulations. According to the requirements of GB/T19001-2016 "Quality Management System Requirements" and GB/T50430-2017 "Quality Management Code for Engineering Construction Enterprises", etc., the Company strictly implemented quality control, and our quality control system continued to operate effectively. During the Reporting Period, no quality accident occurred, and all of the qualification rate of acceptance of projects under construction, industrial product and survey and design finished product reached 100%.

## PROVIDE HIGH-QUALITY PROJECTS, PRODUCTS AND SERVICES

### Quality management and control measures

Legal basis	The Product Quality Law of the People's Republic of China, the Construction Engineering Quality Management Regulations, the quality management system and other relevant laws and regulations
Policies	Quality Management Regulations of China Energy Engineering Corporation Limited, Production Safety Accident, Management Regulations on Quality Accident and Environmental Incident of China Energy Engineering Corporation Limited, QHSE Reward and Punishment Measures of China Energy Engineering Corporation Limited.
Management measures	Improve the quality responsibility system and assessment system; release the key points of the annual quality work, sign the quality responsibility statement, strengthen the quality risk management, investigate and rectify the quality-related hidden trouble; and organize and carry out project engineering technical consulting and review services

During the Reporting Period, the Company vigorously promoted the casting of excellence, won 3 Luban Awards (including 1 Luban Award for overseas projects), 18 National Quality Engineering (Gold) Awards, 153 provincial and ministerial quality engineering awards, 287 provincial and ministerial awards for excellent survey, design and consulting achievements, and 234 other quality awards. The Company organized and selected 10 items of the second "Energy China Cup" quality engineering awards to continue to enhance the brand value and fully demonstrate the style of "craftsmen of the country".

### 6.3 PROMOTING TECHNOLOGICAL INNOVATION

#### • Innovation-driven Development

The Company insists that Innovation is the first driving force for development. The Company always put technological innovation in a prominent position, vigorously implemented the strategy of "strengthening itself with science and technology, and developing through innovation", gave full play to the "three roles" of science and technology in leading, driving and supporting, adhered to the "three" integration between industry and technology, industry and information, and industry and finance, and focused on the "six main lines" of strengthening the system, optimizing the mechanism, tackling key difficulties, consolidating transformation, setting up platforms and cultivating talents, spared no effort to build technological innovation into a "booster" of market development, an "accelerator" of business transformation, and an "incubator" of emerging industries, and vigorously promoted the high-quality development of the Company.

During the Reporting Period, the main measures to promote technological innovation of the Company include, but are not limited to:

- Improved the technological management system and innovated the technological R&D investment mechanism. The Company formulated the Administrative Measures for Scientific and Technological Achievements, standardized the management of scientific and technological achievements of the Company, and promoted the integration between "industry and technology"; formulated the Administrative Measures for the Evaluation of the First Unit (Set) of Major Technical Equipment and the Administrative Measures for the Review of Major Equipment Technical Plans and Equipment Technology Introduction to standardize the Company's high-end equipment R&D management;

## PROVIDE HIGH-QUALITY PROJECTS, PRODUCTS AND SERVICES

- Established the technological innovation leadership and decision-making bodies such as the Science and Technology Committee, the source of original technology and the leading group of modern industrial chain leaders. The Company established a technical expert system and a senior technical advisory committee comprising of 33 well-known academicians and experts to provide consulting and decision-making support for the Company's technological innovation;
- Strengthened the whole-process management of major science and technology projects, set up management specialists for each project, organized and carried out regular and irregular implementation inspection to make ensure the completion of node objectives;
- Convened the launch meeting of the technological innovation special action, and released the Implementation Plan for the Technological Innovation Special Action of China Energy. 54 key tasks were proposed centering on tackling key core technologies, building a national-level R&D platform, creating the source of original technology and the chain leader of modern industry chain, and signed the responsibility statements for tackling key problems with the responsible unit to resolutely win the battle of the technological innovation special action.

During the Reporting Period, effort on core scientific research work made by the Company and achievements mainly include:

- Completed annual node objectives of 29 major scientific and technological projects under "technology reward system (揭榜挂帅)", and achieved a number of key and phased core achievements in respect of the "30 · 60" system solutions, new power system, new energy storage, hydrogen energy, communication and energy integration, construction and energy integration, smart energy, etc.;
- As a leading role, studied and proposed 18 major scientific and technological projects under "technology reward system (揭榜挂帅)" focusing on the forward-looking, global and systematic directions of digital energy integration, low-carbon energy, high-end equipment, etc., realized the rolling establishment of scientific and technological projects under "technology reward system (揭榜挂帅)", and continued to improve the layout of talking key core technologies;
- Systematically mastered the key technologies for clean and efficient utilization of coal-fired power such as high-efficient ultra-supercritical power generation, efficient and flexible secondary reheat, and continued to consolidate its leading advantages;
- Prepared and issued IEC62862-4-1 General Requirements for the Design of Tower Solar Thermal Power Plants, which regulates the design requirements of tower solar thermal power plants at the level of international standards, and has made positive contributions to advancing and promoting the development of solar thermal power generation industry in the world, and further promotes China's influence and international position in the field of solar thermal power generation;

## PROVIDE HIGH-QUALITY PROJECTS, PRODUCTS AND SERVICES

- The self-developed smart site control platform has been applied to more than ten project construction sites such as Fengcheng Power Plant;
- The self-developed scientific and technological achievement of “integration of slope plant protection technology and slope structure of power engineering” has been promoted and applied in more than 30 mine ecological restoration projects in Hubei, Guangxi, Hebei and other places, forming a good business development momentum.

### Case: The world's largest 350 MW salt cavern compressed air energy storage project solved the worldwide problem of compressed air energy storage

Energy storage technology is the core supporting technology to achieve the goal of “carbon peak and carbon neutralization”. Compressed air energy storage is considered as one of the most promising large-scale energy storage technologies at present due to its advantages of large energy storage capacity, low cost, long life cycle, safety and environmental protection.

The construction of the Shandong Tai'an 2×300 MW compressed air energy storage innovation demonstration project invested and constructed by China Energy was commenced in 2022. It adopted the low-melting-point molten salt high-temperature adiabatic compression technology initiated for the first time in the world. After the completion, it will achieve the world's first place in terms of single unit power, conversion efficiency and energy storage scale in the field of compressed air energy storage, which will help promote the high-end development of new energy storage technology, promote the large-scale grid-connected consumption of renewable energy and the recycle of waste salt cavern resources. The project is of great significance to ensure the safe and stable operation of the power system in Shandong Province, the comprehensive recycle of salt cavern resources in Shandong Province, the promotion of regional economic development and prosperity, and the acceleration of the transformation of new and old kinetic energy in Shandong Province.



The construction of the Shandong Tai'an 2×300 MW compressed air energy storage innovation demonstration project invested and constructed by the Company was commenced



## PROVIDE HIGH-QUALITY PROJECTS, PRODUCTS AND SERVICES

### • Protection of Intellectual Property Rights

With the steady increase of the number of intellectual property rights of the Company, the continuous improvement of the level of technology proprietary, and the gradual enhancement of core competitiveness, the Company has gradually improved the management measures for the protection of expertise, patents and copyrights, and effectively protected the legitimate rights and interests.

The Company carried out innovation incentives and intellectual property protection in strict accordance with the Patent Law of the People's Republic of China, the Regulations on the Administration of National Standards Involving Patents (Provisional), the Trademark Law of the People's Republic of China, the Copyright Law of the People's Republic of China, the Law of the People's Republic of China on Promoting the Transformation of Scientific and Technological Achievements and other relevant laws and regulations on innovation, patent and copyright. The Company prepared the Administrative Measures for Intellectual Property Rights, the Administrative Measures for Construction Method and the Administrative Measures for Patent to standardize the management of intellectual property right, industrial law and patent of the Company.

During the Reporting Period, efforts on the intellectual property protection made by the Company mainly includes:

- Revised the Administrative Provisions on Legal Affairs to clarify that business decision-makings, rules and policies, and economic contracts involving intellectual property rights that have a significant impact on the reform and development of the Company shall be carried out three legal compliance reviews;
- In terms of specific intellectual property right management, the Company adopted following measures: checked related technologies before research and development to avoid infringement risks; signed a confidential agreement during research and development to agree on the ownership of rights; applied for copyright in a timely manner after research and development and protect rights and interests with law; in the management process, it dynamically monitored infringement behavior, taken protective measures in a timely manner, formulated a response strategy in a timely manner after a dispute occurs, and resolved the dispute via legal means;
- Strengthened the management of relevant personnel, specified confidentiality obligations, clarified non-competition obligations when necessary, and defined legal responsibilities;
- Strengthened the intellectual property right management, established and improved the all-round protection mechanism of retrieval, registration, management and reporting of intellectual property right, and clarified the content of intellectual property right protection when formulating production and operation, scientific research and development, documents management, confidentiality management and other policies;
- Intensified the legal compliance review, adhered to the new “Three Prohibitions” to regulate and strictly control risks of the legal compliance review of important decision-makings, rules and policies and economic contracts involving intellectual property rights.

## PROVIDE HIGH-QUALITY PROJECTS, PRODUCTS AND SERVICES

### Information on the Company's technological innovation

Item of indicator	Unit	2022	2021	2020
Total number of patents	/	11,372	10,198	10,043
Number of new patents	/	2,162	1,541	1,472
Number of new patents for invention	/	334	211	181
Number of new software copyrights	/	323	261	218
R&D expenditure	RMB million	11,307	9,987	7,494
Number of technological R&D projects	/	876	851	658

### 6.4 CARRYING OUT INTERNATIONAL COOPERATION

In light of the broad development space brought by the “Belt and Road” initiative, the Company, under the principles of “strategic guidance, resource integration, differentiated positioning, coordinated development, service sharing, and value enhancement”, endeavored to strengthening the top-level design of overseas market layout, and devoted to promoting the upgrade of “globalization of Energy China” to “globalized Energy China”.

China Energy has set up more than 200 overseas agencies of various types in more than 90 countries and regions, with business covering over 140 countries and regions, conducted business in 57 countries along the “Belt and Road”, and set up more than 100 market development agencies, with a total contract amount of more than RMB800 billion, being one of the main forces for Chinese enterprises to participate in the “Belt and Road” construction. By the end of 2022, the Company has a variety of 520 international projects under construction. China Energy has undergone a new round of international business system reform, built a new international business layout of “one body and two wings” and “1+2+N+X” (“1”, i.e. “One Core”, refers to China Energy International Group Co., Ltd. (中能建國際建設集團有限公司); “2”, i.e. “Two Wings”, refers to China Gezhouba Group International Engineering Co., Ltd. (中國葛洲壩集團國際工程有限公司) and China Power Engineering Consulting Group International Engineering Co., Ltd. (中國電力工程顧問集團國際工程有限公司); “N” refers to leading enterprises of international business; “X” refers to backbone enterprises of international business. “One Core” guides and coordinates the development of international business of CEEC assisted by “Two Wings” as the dual platforms for orderly conduct international business, while leading and backbone enterprises shall expand their international business in their respective advantageous fields), with international operation developed steadily, and formed a market layout focusing on Asia and Africa and covering the America, Central and Eastern Europe and Oceania.

During the Reporting Period, the Company's main international business management measures include but are not limited to:

- Issued the Optimization Plan for the International Business Market (Institution) Layout of China Energy Engineering Corporation Limited to, strengthen the overall layout of overseas markets, and enhance resource integration and internal coordination;
- Issued the Implementation Rules for Management of Overseas Legal Entities and Branches of China Energy Engineering Corporation Limited to regulate the establishment, change, cancellation and operation and management of overseas legal entities and branches;

## PROVIDE HIGH-QUALITY PROJECTS, PRODUCTS AND SERVICES

- Issued the Administrative Measures for International Engineering Projects of China Energy Engineering Corporation Limited, the Administrative Measures for International Engineering Projects Subcontracting of China Energy Engineering Corporation Limited, and the Administrative Measures for Reporting and Disposal of Major Issues of International Businesses of China Energy Engineering Corporation Limited, to regulate the management of international engineering projects, guarantee the smooth project performance, and strive to achieve the rolling development of the markets along the “Belt and Road”.

During the Reporting Period, the main overseas projects implemented by the Company include but are not limited to:

- Signed a memorandum of understanding on the cooperative development of green hydrogen projects with the Egyptian government, and has become the only Chinese enterprise among the internationally renowned investment developers to sign a cooperative development agreement with the Egyptian government. The signing of the project is the first overseas hydrogen energy business of China Energy;
- The construction of the China Energy Saudi Arabia PIF Phase II 2.6GW photovoltaic project was commenced, which will effectively optimize Saudi Arabia’s energy structure and protect the local ecological environment. After the completion of the project, it is estimated that the total power generation in 35 years will be approximately 282.2 billion kWh, equivalent to the carbon dioxide emission reduction of nearly 245 million tons, or equivalent to planting 545 million trees in the Saudi desert as measured based on the carbon dioxide emission reduction;
- China Energy Engineering Gezhouba Group signed the largest power transmission and transformation project in Angola, with a total contract amount of US\$1.401 billion. After the completion of the project, it will realize the interconnection of the north-south and eastern systems of the Angolan national grid, providing a strong guarantee for the power consumption of livelihood, industry and businesses in the south and central region of Angola.

## PROVIDE HIGH-QUALITY PROJECTS, PRODUCTS AND SERVICES

### Case: Strengthen the communication between China and the Europe in the field of energy transformation and contribute to the global green and low-carbon development

In September 2022, China Energy participated in and jointly organized the second session of China-Europe Clean Energy Transformation International Forum, which is committed to strengthening China-Europe communication in the field of energy transformation under the complex and volatile international situation, and promoting the green and low-carbon development of the global economy and society.

The forum invited the industry experts from the international and domestic clean energy fields, entrepreneurs representatives, relevant heads of the German International Cooperation Agency and the Danish Embassy in China, etc., to exchange experiences and ideas around the theme of “clean energy empowering dual-carbon transformation and innovation”.

China Energy adheres to the “green consensus”, practices the “green development”, actively contributes to the green and low-carbon transformation of the global economy and society, and contributes China Energy’s plan to the global clean energy cooperation.



China Energy participated in and jointly organized the second session of China-Europe Clean Energy Transformation International Forum

## PROVIDE HIGH-QUALITY PROJECTS, PRODUCTS AND SERVICES

### 6.5 PROTECTION OF CUSTOMER RIGHTS

The Company attaches great importance to customer needs and feedback, takes customers as the center, and continuously meets customer needs, strengthens customer care, closes customer relationships and improves customer satisfaction, so that customers and the Company can establish a sustainable win-win and mutual benefit relationship. The Company formulated and implemented the Implementation Rules for Satisfaction Management of Customers Developed in the Domestic Market (《境內市場開發客戶滿意度管理實施細則》), standardizing division of responsibilities, methods of obtaining customer satisfaction information, customer satisfaction ledger management, customer management in crisis, and customer satisfaction work assessment and evaluation, scientifically and systematically maintaining the Company's customer network, and improving the Company's customer satisfaction. In response to project complaints, we continue to strengthen compliance supervision to timely control the concerns in project management. We guide, supervise and coordinate with relevant enterprises to formulate corresponding measures to ensure that the concerns of all parties are properly responded to. Besides, we also make special regulations on the confidentiality of customer information to ensure the security of customer information. During the Reporting Period, there was no leakage of customer privacy in the domestic market within the Company, nor complaints from customers.

## ANTI-CORRUPTION

### 7. ANTI-CORRUPTION

In strict compliance with laws and regulations such as the Criminal Law of the People's Republic of China, the Anti-Unfair Competition Law of the People's Republic of China, Several Provisions on the Clean Practice of Leaders of State-owned Enterprises, Interim Provisions on the Prohibition of Commercial Bribery, the Company resolutely opposes commercial bribery, extortion, fraud, money laundering and other improper commercial acts. During the Reporting Period, the Company further strengthened the construction of the integrity system, carried out anti-corruption in accordance with the "Major Supervision" Work Management Measures (《“大監督”工作管理辦法》), the Implementation Methods for Three Conversations with Management (《關於對領導人員進行三項談話的實施辦法》), the Implementation Methods for Processing Prosecution and Accusation (《處理檢舉控告工作實施辦法》) and the Implementation Methods for Supervision and Discipline Enforcement (《監督執紀工作實施辦法》) of the Company, etc., comprehensively promoted "corruption discourage, corruption inability and corruption unwillingness" and strictly prevented commercial bribery and commercial corruption.

During the Reporting Period, the main measures taken by the Company to further strengthen the anti-corruption include but are not limited to:

- Promoted the normalization of warning education. The Company adhered to hold a warning education conference at the beginning of each year, reporting typical cases of violations of laws and regulations of the Company, and educated the people around with events occurred therein. The Company conducted the monthly activities of warning education for a month to build up the ideological barrier of "corruption unwillingness" through a series of activities such as integrity education and training, organizing to watch warning education films, visiting warning education bases, and centralized learning. The Company continued to expand the "second half of the chapter", promoted the integration of case handling, warning, rectification and governance, and effectively improve the efficiency of anti-corruption governance;
- Continuously unblocked the petition and reporting channels. The Company further unblocked the reporting channels such as letters, visits, phone calls and the Internet, and obtained clues through inspection and handover, supervision and examination, department transfer and other channels, so as to give full play to the supervision role of party members and the masses. At the same time, the Company accepted the complaints, strengthened the analysis, research and judgment of the petition and reporting in a prompt manner, strictly kept the informer's information confidential, and constantly improved the quality and efficiency of the petition and reporting work;
- Maintained the high corruption punishment. The Company paid close attention to the key fields such as project subcontracting, equipment and supplies procurement, stringently inspect non-compliance and illegal behaviors such as "Relying on and Seeking Benefits from Enterprises" (靠企吃企), benefits transfer, rent setting and seeking, and connected transactions, carefully checked the clues of corruption and style problems around the masses, and resolutely rectified the corruption and style problems around the masses;

## ANTI-CORRUPTION

- Continued to deepen political inspection. The Company has successfully completed the task of full coverage of inspections during the term of office of the 19th CPC Central Committee, carried out two rounds of special inspections during the year, and organized five inspection teams to inspect the party committees of seven newly established enterprises and four representative power construction enterprises, and urged the inspected enterprises to continuously consolidate the foundation of comprehensive and strict self-discipline of the Party.
- Promoted the transformation and improvement of supervision efficiency. The Company further improved the mechanism of regular discussion and promotion, regular notification, and transfer of problem clues for the “major supervision” work, and coordinated and urged all functional departments to assume the supervision responsibility and exert the supervision joint force. The Company, centering on key work including reform and development as well as compliance management, formed five comprehensive supervision and inspection teams to carry out on-site inspection on subsidiaries in batches;
- Persevered in correcting the undesirable work styles (i.e. the formalism, bureaucracy, hedonism and extravagance) and forming a new one. The Company paid close attention to important nodes and key premises, focused on the areas prone to incorruptible risks such as official reception, official vehicles, holiday welfare distribution, and carried out spot checks on the implementation of the spirit of the Central Committee’s eight rules of 15 affiliated enterprises in two batches by adopting the methods of “enterprise self-inspection + online spot check + on-site inspection” and the work style rectification.

### Implementation Particulars of Anti-corruption Publicity and Education of the Company:

Item of indicator	Unit	2022	2021	2020
Number of trainings on anti-corruption publicity and education	/	1,045	5,311	6,918
Total number of participants in training on anti-corruption publicity and education	Personnel/time	152,742	133,030	114,218

Item of indicator	Unit	2022
No. of cases involved in corruption and bribery litigation	Case	3
No. of personnel subject to punishment due to corruption and bribery	Personnel	3
No. of training on discipline inspection and supervision business	/	551
No. of personnel participated in training on discipline inspection and supervision business	Personnel	3,752
No. of hours of training on discipline inspection and supervision business in total	Hour	1,189
No. of personnel/time of Directors of the Company who participated in the training on anti-corruption publicity and education	Personnel/time	34
No. of personnel/time of employees of the Company who participated in the training on anti-corruption publicity and education	Personnel/time	152,708

## GIVING BACK TO THE SOCIETY



### 8.1 SUPPORTING RURAL REVITALIZATION

The Company adhered to be guided by the spirit of the important instructions made by General Secretary Xi Jinping for rural revitalization and targeted support, resolutely implemented the decision-making deployment of the Party Central Committee and the State Council, followed the working requirements of the National Rural Revitalization Administration and the SASAC of the State Council, focused on “upholding the bottom line, seizing development and promoting revitalization”, adhered to the principle of “Four No Picks”, exerted the advantages of the Company, persists in innovation measures, supported in consolidating and expanding the effective links between the achievements of poverty alleviation and rural revitalization of Zhenba County, Shaanxi Province and Xilin County, Guangxi Province, so as to support the rural and agricultural modernization.

In 2022, China Energy continued to intensify the assistance in consolidating and expanding poverty alleviation achievements, comprehensively promoting the “five revitalizations”, assisting the construction of demonstration villages and towns, and consumption assistance, while giving full play to industrial advantages, actively promoting the green and low-carbon transformation of rural energy and electricity and upgrading of major infrastructures. In 2022, the total amount of free funds (including supplies) invested was RMB15,011,800; the investment in the construction of expressway projects was RMB8.927 billion (paid) in the whole year, representing an increase of 11.59% over the beginning of the year, and a year-on-year increase of 6.78% over the previous year; and the Company introduced supporting funds (including free and paid) of RMB14,504,000. The Company introduced leading enterprises to invest and build factories and completion of registration at the local authorities. In addition, the Company also introduced RMB400,000 of free supporting funds from social caring enterprises. In 2022, the Company won the highest rating of “good” from the Central Rural Affairs Leading Group.



## GIVING BACK TO THE SOCIETY

### Case: Accurately support Xilin County, Guangxi Province to promote the overall rural revitalization

The Company introduced the Tianlin-Xilin expressway to Xilin County through PPP mode to change the long-term backward traffic situation in Xilin County. During the construction period of the Tianlin-Xilin expressway project, the Company proactively participated in the consumption assistance, employment assistance, industrial assistance, Party building support for improving agricultural efficiency, farmers' income and rural characteristics, making Tianlin-Xilin expressway truly become a "road to revitalization, prosperity, common aspiration and development" in Xilin County.

- Consumption assistance to increase income. Through the "purchase instead of donation", the Company targetedly introduced local agricultural products in Xilin to the canteen of the Tianlin-Xilin expressway project and to thousands of households as employee benefits. More than 500 consumer assistance activities were carried out in aggregate, with the amount of consumption assistance exceeding RMB25,000,000.
- Employment assistance to boost confidence. The Company provided employment opportunities or employment channel support for local people, recruited operation toll collectors and management and maintenance personnel locally, and a total of more than 10,000 local labors were employed.
- Industrial assistance to improving the efficiency. The Company cooperated with Xilin County in the supply of sand and gravel, established a sand and gravel quarry to obtain local materials, and mined 5,394,700 tons of sand and gravel in Xilin County, with the cooperation amount of RMB0.294 billion.
- Party building to boost vitality. The Company and Yanglong Village, Zubie Township, the targeted alleviation village, jointly established the demonstration site for the Party building, assisted in building more than 1,500 square meters of chicken farms, slaughterhouses, sheepfolds and cattle sheds, etc. for Yanglong Village, and donated more than 10,000 livestock and poultry, and guaranteed a proper amount of sales for the farms. The Company and the Party branches at village and township level in Xilin County jointly conducted more than 200 Party building activities.



The Company conducted large recruitment activity in Xilin County



The Company and Xilin County jointly conducted consumption assistance activity

## GIVING BACK TO THE SOCIETY

### 8.2 ASSISTANCE FOR XINJIANG AND TIBET

The Company adhered to be guided by the spirit of the important instructions made by General Secretary Xi Jinping for Xinjiang and Tibet, implemented in-depth the spirit of the third symposium of the Central Government for Xinjiang and the seventh symposium of the Central Government for Tibet, earnestly implemented the deployment requirements for central enterprises in assistance for Xinjiang and Tibet, with an aim to promoting industrial assistance for Xinjiang and Tibet and the conduction of counterpart support in a diligent, passionate and powerful manner.

In 2022, the Company invested in and undertaken a number of major engineering projects in Xinjiang, Tibet, Qinghai and other regions, such as power supply, power grid, water conservancy, transportation, mining, etc., which promoted the development of the national energy and power industry and the upgrading of infrastructure in border areas, improved the production and living environment, promoted mass employment and deepened ethnic exchanges and integration.

During the Reporting Period, the Company officially undertook the task of counterpart support to Basu County, Changdu City, Tibet. The Company scientifically prepared the "Fourteenth Five-Year Plan" for counterpart support to Basu County, and invested RMB300,000 to establish the "China Energy Engineering Education Fund", organized special job fairs, dedicated to help expand employment of college graduates in Basu County, actively assisted in pandemic prevention and control, and organized materials to support Basu County.

### 8.3 DEVOTING TO SOCIAL PUBLIC WELFARE

In accordance with the Law of the People's Republic of China on Public Welfare Donations, the Notice on Strengthening the Management of External Donations by Central Enterprises and the Supplementary Notice on the Management of External Donations by Central Enterprises issued by the SASAC of the State Council, and other requirements, the Company revised the Measures for the Administration of External Donations of China Energy Engineering Corporation Limited to standardize the management of external donations by the Company and earnestly fulfill its social responsibilities.

In 2022, China Energy donated a total of RMB29,944,300 in the name of the Company, and a total of RMB560,100 in the name of individuals. Through the establishment of long-term efficient mechanism and normalization activity of "I do practical things for the masses", and supervised 2,294 practical things carried out by subsidiaries for the masses.

## GIVING BACK TO THE SOCIETY

### Case: Carry out education assistance to making the dream of a colorful childhood come true

In May 2022, Guangxi Hydropower Group of CEEC (中國能建廣西水電集團) cared for the children of the village in assistance and carried out the Children's Day activity of "Sharing Happiness and Devoting Love" in Dongjiang Village. The general secretary of Guangxi Hydropower Group in Dongjiang Village bought schoolbags, stationery, drawing boards, etc., and conveyed the care and sympathy from the Company in the children's laughter, encouraged the children to strive for self-improvement, study hard, overcome difficulties, and maintain an optimistic and positive attitude towards life.



The staff of the Company distributed souvenir to the children



The Company organized a group photo in the theme of the Children's Day activity

## 8.4 FACILITATING OVERSEAS COMMUNITY DEVELOPMENT

The Company proactively assisted the local owners, governments and civilians of overseas projects to carry out rescue and disaster relief activities, effectively reducing the impact of disasters on the lives and property of local residents; in response to the national policies, the Company has deeply integrated the construction of the "Belt and Road", and implemented many overseas assistance projects; the Company proactively participated in local charity activities and improved the skill level of local personnel; and the Company increase the proportion of localized employment, trained employment skills for local personnel, and created employment opportunities for local communities in the Philippines, Vietnam, Nigeria and other countries.

## GIVING BACK TO THE SOCIETY

### Case: Sign a memorandum of cooperation between university and enterprise with Tashkent State Transport University in Uzbekistan

In October 2022, China Energy International Group Co., Ltd. (中能建國際建設集團有限公司) signed a memorandum of cooperation between university and enterprise with Tashkent State Transport University in Uzbekistan, held the unveiling ceremony of "Luban Workshop", and taught the first lesson of "Luban Workshop". Both parties formed a long-term university and enterprise cooperation mechanism and jointly built a talent training system.



Cooperation agreement between university and enterprise with Tashkent State Transport University in Uzbekistan and the unveiling ceremony of "Luban Workshop"

## GIVING BACK TO THE SOCIETY

### Case: Charity donation to build a beautiful home

China Energy initiatively supported the development of overseas communities, cared about the health and safety of local residents, and worked with the residents of the place where the project was located to build a home with happiness and beauty.

- In March 2022, during the Navruz Festival, the largest festival in Uzbekistan, Central Asia Co., Ltd. of China Energy Engineering Gezhouba Group (中國能建葛洲壩集團中亞有限公司) in cooperation with the Syr Darya Gas Turbine Project Department and the Uzbekistan Association for the Disabled jointly carried out the public welfare activities of caring for the disabled in Gulistan, the capital of Syr Darya State. During the event, the representatives of the Company and the Association for the Disabled sent warm supplies and food to the local disabled and families with difficulties.
- In October 2022, Typhoon Paeng approached the southern area of the Philippines, causing serious landslides and floods in the area where the project implemented by China Energy Jiangsu Institute was located, a huge damage to agriculture and displacement of residents. The project department of China Energy Jiangsu Institute immediately organized forces to donate 5,000 jin of rice as relief materials to Kalamansig municipal government, and the supplies donated by the project department helped at least 200 families temporarily through difficulties.
- During the construction and implementation of the ACE Apartment (Phase II) project in Vientiane, Laos, when it was awared that the SOS Children's Village in Vientiane, Laos was in shortage of school supplies, sports goods, food, clean drinking water and other materials, the Company donated supplies with a total of Kip 0.1 billion (equivalent to approximately RMB40,000), sent basic living and sports goods such as water purifiers, rice, edible oil, schoolbags, football, etc. to the children in the children's village.



The Company donated supplies for victims in the Philippines



Photo of charity donation activity carried out by the Company in Laos

## FUTURE PROSPECTS

The year of 2023 is the beginning year of implementing the spirit of the 20th CPC National Congress, a year of succession of the “14th Five-Year Plan”, as well as a beginning year of the Company to comprehensively commence to the systematic construction of “three newness (new infrastructure, new models and new kinetic energy)”, it is also the year of our endeavor to accelerate the construction of a world-class enterprise. In the new year, the Company will take the Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era as the guidance, deeply implement the requirements of the spirit of the 20th CPC National Congress, the Central Economic Working Conference and the Meeting of the Heads of Central Government Enterprises, comprehensively implement the arrangements and deployments of the second Party congress of the Company, uphold the general tone of making progress while maintaining stability, and maintaining steady and rapid progress, deeply implement the Several Opinions and “1466” strategies, adhere to the thought guidance, keep strategic positioning, focus on core tasks, highlight capacity building, further strengthen confidence, overcome difficulties, strengthen and consolidate the foundation, so as to comprehensively create a new situation of high-quality development and building a world-class enterprise.

We will focus on the development requirements and the core strategic task of building a world-class enterprise, fully promote the high-quality development of the Company, and fully realize the eight management objectives of “three highs, two lows and three strength”, “one profit and five rates”, “one increase, one stability and four improvements”; we will continue to build a modern corporate governance system with Chinese characteristics and fully stimulate the vitality, motivation, synergy and effectiveness of all governance entities; we will constantly accelerate the transformation of green, digital and integrated led by innovation (一創三轉), open up new fields and new tracks for development, and shape new driving forces and new advantages for development; we will continue to tackle the “focus of reform”, make every effort in key tasks, seeking practical results, and effectively enhance the adaptability, penetration, effectiveness and pertinence of reform.

We will bravely assume the responsibility of building a powerful country, give full play to the Company’s characteristics and advantages, fully guarantee the national energy security, proactively build a new power system, accelerate the participation in the construction of a modern comprehensive transportation system, deeply promote the all-round digital transformation and upgrading, innovate the urban renewal and urban-rural integration development mode, and put forward the “Belt and Road” upgrading from “general” to “detailed” implementation of energy engineering plan at a higher level, and assume the tasks for building a powerful country with energy, transportation, digitalism and beauty and high-quality construction of the “Belt and Road” in the era.

We will consolidate the strategic fulcrum and build an energy engineering of “three newness” with new energy, new infrastructure and new industry as the core in a high-quality manner. For “new energy”, we will focus on leading green and low-carbon development, and strive to build a high-quality new energy development system with “good economic benefits, strong investment drive, excellent industrial structure and flexible management mechanism”. For “new infrastructure”, we will focus on the innovative and integrated development model, and coordinately create a new business form and model characterized by interconnection and integration among industries. For “new industry”, we will focus on building a value symbiosis system, and coordinately create an “industrial cluster”, “win-win chain” and “energy field” with elements sharing, value symbiosis as well as aggregation and fission.

## FUTURE PROSPECTS

We will be committed to improve people's well-being, bravely serve as a model and benchmark in the major and new infrastructure in the series of national strategies for regional coordinated development, play a vanguard role in serving the construction of modern cities, accelerating the construction of new urbanization and rural revitalization, adhere to the people-centered development concept, continue to consolidate and expand the achievements of poverty alleviation, actively fulfill social responsibilities, solidly promote common prosperity, and firmly shoulder stable growth and employment, and make every effort to solve the urgent issues of the staff and communities.

In the future, we will kept the top priorities of the China in mind, uphold the "two origins", and spare no effort in building a "three-new" platform of the Company, comprehensively improve our core competitiveness, dedicate to open a brand new situation of high quality development and building a first-class enterprise in the world, contribute the wisdom of energy engineering, exert the power of energy engineering, show the ability of energy engineering in safeguarding the national energy security, promotion of the green and low carbon transformation of energy, advancement the sustainable and green and healthy development of economy and society, commit to be a pioneer in the great journey of promoting the modernization with Chinese characteristics, and to play a full role as a practitioner of national strategies, a builder of the green world, a pioneer of digital intelligence, a promoter of integrated development, and a high-quality provider of integrated solutions.



## APPENDIX

## ESG INDEX

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	A1.1 The types of emissions and respective emissions data.	P18
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## APPENDIX

Aspects	Contents	Disclosure location
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	(b) compliance with relevant laws and regulations that have a significant impact on the issuer	
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	Policies on improving employees' knowledge and skills for discharging duties at work. Description of training activities.	
	B3.1 The percentage of employees trained by gender and employee category (e.g. senior management, middle management).	P30
	B3.2 The average training hours completed per employee by gender and employee category.	Average number of hours of training completed per employee by gender and type of employee is not available

## APPENDIX

Aspects	Contents	Disclosure location
B4 Labour Standards	General Disclosure	P23
	Information on:	
	(a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to preventing child and forced labour.	
	B4.1 Description of measures to review employment practices to avoid child and forced labour.	P23
	B4.2 Description of steps taken to eliminate irregularities when discovered.	P23
B5 Supply Chain Management	General Disclosure	P33
	Policies on managing environmental and social risks of the supply chain.	
	B5.1 Number of suppliers by geographical region.	P34
	B5.2 Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, how they are implemented and monitored.	P33
	B5.3 Description of practices used to identify environmental and social risks along the supply chain, and how they are implemented and monitored.	P33
	B5.4 Description of practices used to promote environmentally preferable products and services when selecting suppliers, and how they are implemented and monitored.	P33
B6 Product Responsibility	General Disclosure	P35
	Information on:	
	(a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to health and safety, advertising, labelling and privacy matters relating to products and services provided and methods of redress.	
	B6.1 Percentage of total products sold or shipped subject to recalls for safety and health reasons.	N/A
	B6.2 Number of products and service related complaints received and how they are dealt with.	P37
	B6.3 Description of practices relating to observing and protecting intellectual property rights.	P39
	B6.4 Description of quality assurance process and recall procedures.	N/A
	B6.5 Description of consumer data protection and privacy policies, how they are implemented and monitored.	P42

## APPENDIX

Aspects	Contents	Disclosure location
B7 Anti-corruption	General Disclosure	P43
	Information on:	
	(a) the policies; and	
	(b) compliance with relevant laws and regulations that have a significant impact on the issuer	
	relating to bribery, extortion, fraud and money laundering	
	B7.1 Number of concluded legal cases regarding corrupt practices brought against the issuer or its employees during the reporting period and the outcomes of the cases.	P43
	B7.2 Description of preventive measures and whistle-blowing procedures, how they are implemented and monitored.	P43
	B7.3 Description of anti-corruption training provided to directors and staff.	P44
B8 Community Investment	General Disclosure	P45-P46
	Policies on community engagement to understand the needs of the communities where the issuer operates and to ensure its activities take into consideration the communities' interests.	
	B8.1 Focus areas of contribution (e.g. education, environmental concerns, labour needs, health, culture, sport).	P46-P48
	B8.2 Resources contributed (e.g. money or time) to the focus area.	P46-P48



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