

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

Environmental, Social & Governance Report 2021

(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 2021 to 31 December 2021 (the “Reporting Period”), and part of this report may be beyond the period to ensure completeness of the report.

REPORTING REFERENCE STANDARD

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).

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 impartially and avoids choices, omissions or reporting formats that may 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 2021 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 2021 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) and the Company's website (<http://www.ceec.net.cn>).

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CHAIRMAN'S STATEMENT

The year 2021 was the first year of the "14th Five-Year Plan". It is in this year that China has achieved the goal of poverty alleviation as scheduled, completed the building of a moderately prosperous society in an all-round way, achieved the first centenary goal, and started building a modern socialist country in an all-round way and a new journey to achieve the second centenary goal. The past year was a year of good harvest, and it was also a very groundbreaking, breakthrough and milestone year in the development history of China Energy. Over the past year, we have stabilized the forward-looking and strategic goal of "rebuilding a new China Energy with high-quality development" by insisting on in-depth study, innovation, ambitious goals setting and implementation, vigorously implemented the "Certain Opinions" and "1466" Strategies, and coordinated epidemic prevention and control and reform development, systematically practiced the excellent enterprise management model, and fully promoted the coordinated and healthy development of the Company in aspects of economy, society and environment.

Adhering to green and low-carbon to help achieve the "dual carbon" goal. We actively developed the "dual carbon" action plan of China Energy, compiled and released the action plan (white paper) for the Company to implement the "30•60" strategic goals, and systematically built the Company's "125" principle of promoting carbon peaking and carbon neutrality. With a focus on "30•60" system solution, "one center" and "two basic points" namely energy storage and hydrogen energy, we deployed ten key tasks. We successfully facilitated a batch of landmark projects such as Baihetan Hydropower Station and the world's first reactor – Hualong One to be put into operation. We established "30•60" Research Institute, New Energy Storage Research Institute and other specialized research institutions, promoted green construction by implementing energy conservation and emission reduction and improving the efficiency of energy and resource use, for purpose of reducing the impact of production and operation on the environment, protecting the natural ecology in all aspects, and building a beautiful earth.

Pursue excellence and promote the progress of corporate governance. We further optimized the quality of management to achieve world-class management, systematically implemented the basic "334" project, and vigorously promoted the "abolition and reformation" of the system, so as to strengthen project management and centralized procurement, give full play to the potential of supervision, and further improve management efficiency. We effectively maintained the safety condition, rigidly implemented the "12 in place" requirements, and comprehensively implemented the "234" project, which ensures the overall stability of the Company's production safety. We further optimized the quality of our enterprise. The Company has maintained the level A in the SASAC's business performance assessment, and its ranking in the world's top 500 has risen to 301. During the Reporting Period, the Company has obtained 242 national, provincial and ministerial-level high-quality engineering awards, 189 provincial, ministerial and industrial awards in science and technology and 1,893 authorized patents.

Leading employees to grow and build a harmonious and efficient team. We adhered to the concept of "people-orientation" and equality in employment, to effectively protect the basic rights and interests of employees. Forward-looking, we focused on talent cultivation by offering smooth development channels for employees, with an aim to cultivating a team of talents with capacities in the "four aspects" of height, breadth, depth and thickness. We implemented the "Hundreds and Tens of Thousands of Talents Project", and further promoted the reform of the talent development system and mechanism. We have been caring for the lives of employees, solidly promoted the practical activity of "I do practical things for the masses", and invested more than RMB106 million in total, solved over 4,200 issues for employees and more than 1,800 practical issues, thus continuously improving employees' sense of belonging, happiness and responsibility, promoting the common development and growth of employees and the enterprise, seeking the greatest people's trust, the greatest synergy and the greatest interests with the greatest efforts.

CHAIRMAN'S STATEMENT

Involving in community building and achieving mutual beneficial and common development. We consolidate the achievements of poverty alleviation, take rural revitalization as our primary task, vigorously carry out industrial poverty alleviation, employment poverty alleviation, and consumption poverty alleviation, and help Zhenba County in Shaanxi and Xilin County in Guangxi achieve poverty alleviation as scheduled. We actively participated in emergency rescue and disaster relief, and dispatched more than 2,300 people and 428 sets of equipment in 42 on-site and social emergency rescues such as heavy rain in Henan, typhoon fireworks, and Zhuzhou power plant accident. We assisted the development of overseas communities and will continue to strengthen overseas responsibilities, implement thoroughly overseas epidemic prevention and control, and make every effort to protect the lives and health of overseas employees.

There is a long way with many difficulties to go, and we must work harder. With a more progressive attitude and more responsible actions, the Company will base itself on the new development stage, practice new development concepts, and integrate into the new development pattern, and strive to open a new glorious chapter in order to build a world-class enterprise with global competitiveness.

ABOUT US

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 (Stock Code: 3996.HK), and listed on the main board of the Shanghai Stock Exchange on 28 September 2021 (Stock Code: 601868.SH).

The Company is a large comprehensive conglomerate providing integrated solutions and whole industrial chain services for energy and power, infrastructure and other industries in China and the world. Its main businesses cover energy and power, water conservancy and supply, railway and highway, port and sea-routes, civil engineering, municipal transit, ecological environment protection, property and buildings, etc. as well as have a complete industrial chain integrating planning and consultancy, appraisal and review, survey and design, construction and management, operation and maintenance, investment and operating, technology and services, equipment manufacturing to building materials. The Company has ranked among the world's top 500 companies for eight consecutive years. It ranked top among ENR Top 150 Global Engineering Design Firms, Top 225 Engineering Design Firms, Top 250 Global Contractors and Top 250 International Contractors. It has established more than 200 overseas branches in more than 90 countries and regions around the world, and has operations in over 140 countries and regions in the world.

The Company responds to the national strategy and leads the development of the industry relying on its leading technology and excellent innovation ability. By the end of 2021, the Company had 3 academician expert workstations, 11 post-doctoral research workstations, 3 national and 60 provincial research institutions, and 106 high-tech enterprises. The Company obtained 48 national science and technology progress awards and more than 2,300 major scientific and technological achievements, 10,147 valid patents, and formulated and revised more than 1,200 national and industry standards. In a series of major projects related to the national economy and people's livelihood, such as the Three Gorges Project, the South-to-North Water Diversion, the West-East Gas Transmission, the West-East Electricity Transmission, and the Third Generation Nuclear Power, the Company has assumed the important role as a main force of engineering construction and the national team, and has successively undertaken a number of major projects such as the construction of the world's first "three hundred" thermal power project, the world's first AP1000, CAP1400 nuclear power project, the world's largest wind and solar storage and transmission project, the world's first multi-terminal flexible DC transmission project, the world's first 1,240 MW high-efficiency ultra-supercritical coal-fired power generation project, the world's first UHV multi-terminal hybrid DC project and the world's highest power transmission and transformation project, and have created a number of world firsts.

Adhering to the strategic "industry-leading and world-class" vision, the Company is committed to building a first-class energy integration solution provider, a first-class engineering general contractor, a first-class infrastructure investor, a first-class comprehensive ecological environment management provider, a first-class comprehensive urban development operator, a first-class provider of building materials, industrial products and equipment, leading the way in implementing national strategies, promoting the energy revolution, accelerating high-quality development, and building a better life, to accelerate the construction of a world-class enterprise with global competitiveness, and to continue to create maximum value for customers, shareholders, employees and the society.

RESPONSIBILITY MANAGEMENT



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.

Under the authorization of the board of directors, the Social Responsibility Committee of the Company collected and made disclosures of ESG information of 2021, and disclosed in detail of the progress and results of ESG work of the Company in 2021 in this report.

This report is issued after consideration and approval by the board of director.

RESPONSIBILITY MANAGEMENT

• ESG MANAGEMENT MECHANISM

The Company 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, we cooperate with social responsibility liaison officers of various departments 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.

In accordance with the Guiding Opinions on the Fulfillment of Social Responsibilities by Central Enterprises of the SASAC of the State Council (《關於國有企業更好履行社會責任的指導意見》), 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) and other related standards, and the key content to which the international ESG rating agencies paid attention, to further optimize and improve the social responsibility indicator system, and enhance the pertinence and effectiveness of the work. Meanwhile, the Company has established its own ESG indicator system, formulated a mature ESG performance reporting process, and 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. 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.

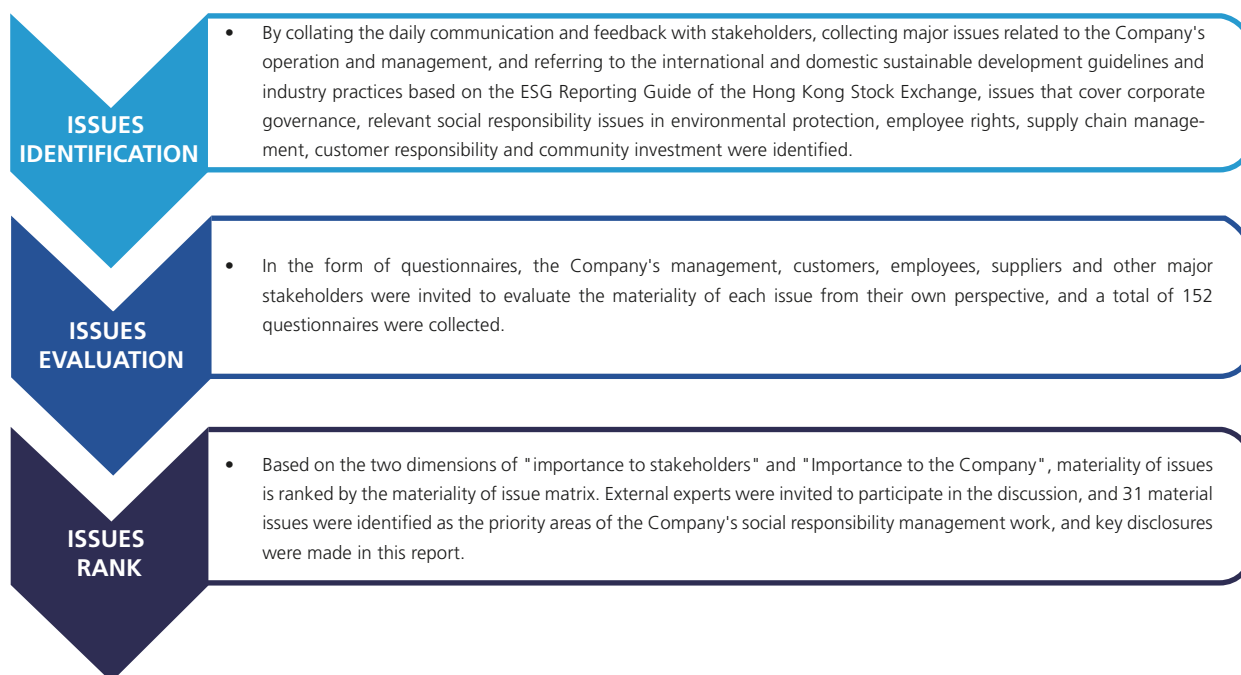
Stakeholders' Requisition and Response

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

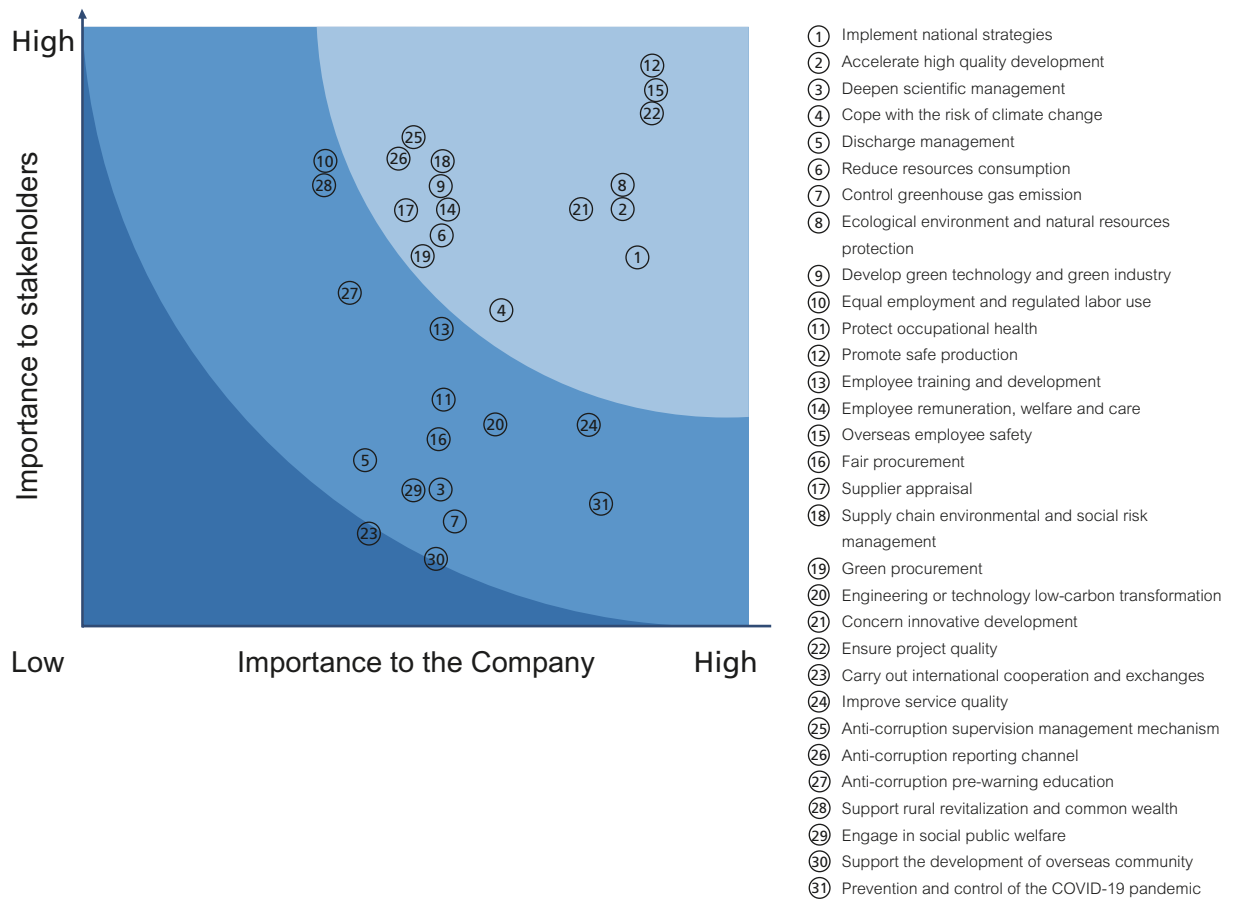
RESPONSIBILITY MANAGEMENT

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 2021, 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

1. RESPONDING TO CLIMATE CHANGE

Coping with climate change is one of the serious challenges of common international concern. The year 2021 was a year when China vigorously promoted to achieve carbon peak and carbon neutrality. This year, the “Dual Carbon” strategy was successively written into the government work report and the “14th Five-Year Plan”, which opened the prelude to a new round of green and low-carbon development.

The field of energy and power is the key field and main battlefield for China to achieve the “30•60” strategic goal. As the forerunner of the energy revolution and the main force in energy and power construction, the Company resolutely implemented the concept of green development, and released the China Energy’s Action Plan for Implementing the “30•60” Strategic Goals (White Paper), set up a specialized research institution to provide strong support for serving national local, local and industry in implementing strategic objectives.

- **Strengthen top-level design**

China Energy’s Action Plan for Implementing the “30•60” Strategic Goals (White Paper) systematically expounded China Energy’s thinking on “carbon peak, carbon neutrality”, the development path of energy and power, and the construction of a new power system with new energy as the main body, and clarified the overall goals. Focusing on “30•60” system solution, the “one center” and the “two basic points” of energy storage and hydrogen energy, China Energy deployed ten key tasks, including enhancing policy research support for “carbon peak and carbon neutrality”, vigorously developing low-carbon energy power business, put ting more efforts to scientific and technological innovation, accelerating digital transformation, promoting green non-electrical infrastructure, enhancing green production and operation capabilities, vigorously promoting green construction, vigorously developing ecological and environmental protection business, implementing green new ways of working and living, and unite to practice the “30•60” strategic power.

- **Facilitating industrial development**

Focusing on “carbon peaking and carbon neutrality”, the Company has established “30•60” research institutes, hydrogen energy companies, new energy storage research institutes and other specialized institutions to accelerate the research and industrialization process of hydrogen energy and energy storage complete sets of technologies. The Company carried out green project investment and construction relying on the integration advantages of the whole industry chain. In 2021, the new contract value in new energy business represented a year-on-year increase of 105%. The Company has undertaken a number of “green” and “great power” projects such as the construction of Baihetan Hydropower Station, the world’s first pile of Hualong One, Ulanqab wind-solar storage multi-energy complementary project.



China Energy released “China Energy’s Action Plan for Implementing the “30•60” Strategic Goals (White Paper)”

GREEN DEVELOPMENT

2. DEVELOPING ENVIRONMENTAL INDUSTRY

The Company thoroughly implemented the concept of green development and continuously enriched technologies accumulation to give full play to the advantages of integration, vigorously expanded the clean energy business and environmental protection water business, and expanded the deployment of the green industrial chain.

• Clean energy business

The Company implemented thoroughly the action plan for “30 • 60” strategic goal by extensively cultivating the clean energy industry, accelerating the construction of integrated base projects such as “multi-energy complementarity”, “source network load storage: and the like, and promoting the development and utilization of hydrogen energy and the industrial application of energy storage. The Company also improved the development and construction level of traditional clean energy such as hydropower and nuclear power, and further promoted the optimization of the energy structure.

During the Reporting Period, the Company successfully promoted many clean energy projects, including but not limited to:

- The first batch of units of Baihetan Hydropower Station, the world’s largest and most technically difficult hydropower project under construction, was successfully connected to the grid for power generation;
- The Yangjiang Shapa Offshore Wind Farm Project with a total installed capacity of 1,000 MW was the first one million kilowatt-class offshore wind power project in China. During the Reporting Period, the first, second and fourth phases of the project achieved grid-connected power generation, with an annual power generation of approximately 2.76 billion kWh;
- Anhui Wuwei Photovoltaic Project with an installed capacity of 40 MW adopted the construction model of integrating “fishing with photovoltaic support”. The project could produce approximately 43 million kWh of green and clean electricity every year, save approximately 12,760 tons of standard coal, reduce carbon dioxide emissions by approximately 33,180 tons, sulfur dioxide emissions by approximately 30.8 tons, and nitrogen oxide emissions by approximately 8.8 tons;
- Heilongjiang Suihua Zhaodong 2×40 MW Biomass Power Generation Project was the largest unit with the largest installed capacity of biomass power plants in China, one of the “Top 100 Projects” and “Demonstration Projects” in Heilongjiang Province, and the Company’s first biomass power plant. The project could provide approximately 500 million kWh of clean electricity and consume approximately 618,000 tons of biomass fuels such as straw every year. Compared with traditional thermal power, it could reduce 170,000 tons of standard coal, 460,000 tons of carbon dioxide emissions, 1,700 tons of sulfur dioxide emissions, and 2,300 tons of nitrogen oxide emissions, which meet environmental protection standards of ultra-low emission, and effectively solve the problems of air pollution caused by open burning of straw in Zhaodong City and surrounding areas.

GREEN DEVELOPMENT



Yangjiang Shapa Offshore Wind Farm Project



Suihua Zhaodong 2x40 MW Biomass Power Generation Project

• 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. The design capacity of the water treatment utilities reached 3 million tons per day.

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

- China Gezhouba Group Water Operation Co., Ltd., a subsidiary of the Company, started the construction of the Urban-Rural Integrated Sewage Treatment PPP Project in Guannan County of Yungang City. The project is the largest water project in northern Jiangsu. After completion, it would greatly improve the efficiency of sewage collection and treatment in Guannan county and rural areas, and provide a demonstration for integrated urban and rural sewage treatment in northern Jiangsu;
- China Gezhouba Group Stock Company Limited, a subsidiary of the Company, took the lead and signed the PPP Project Shareholder Agreement for the Phase III Project of Jingu Sewage Treatment Plant and the Reconstruction Project of Jishui Piece with Tianjin Water Engineering Construction Affairs Center. The project is the largest single-scale urban sewage treatment project in China in the past five years. After completion, it would increase the sewage treatment rate in Tianjin and improve the status quo of urban water pollution;
- China Gezhouba Group Stock Company Limited, a subsidiary of the Company, and Jingxiu District in Baoding City of Hebei Province signed a Cooperation Agreement on Yimuquan Ecological Restoration and Rural Revitalization Demonstration Project. The two parties will give full play to their respective advantages, carry out comprehensive cooperation around the resumption of Yimuquan and the connection of Yimuquan River water system, as well as related supporting facilities, and work together to create a high-quality demonstration project.

GREEN DEVELOPMENT

3. ENHANCING ENVIRONMENT MANAGEMENT

As a global leader in the field of energy, power and infrastructure, the Company adheres to the coordinated development of production, operation and environmental protection, and promoted the low-carbon transformation of the energy and power industry.

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 its own environmental protection system, and formulated and implemented environmental protection management systems such as the "Management Regulations on Environmental Protection and Energy Conservation", the "Assessment, Reward and Punishment Measures on Environmental Protection" and the "Management Measures for Environmental Incident Reporting and Investigation". 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.

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

- revising and improving the Management Regulations on Environmental Protection and Energy Conservation, clarifying the measures and requirements for penetrating management from both the enterprise and project levels, and strengthening assessment, rewards and punishments and continuous improvement;
- promoting green construction planning, formulating green construction measures, and incorporating requirements such as 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;
- focusing on construction projects, actively organizing relevant enterprises to implement green construction demonstration projects, effectively improving the management capacity of project construction enterprises in environmental protection and energy conservation, and promoting cost reduction, efficiency improvement and environment protection;
- performing well in process management and supervision, taking effective measures to control construction dust, noise, light pollution, water pollution, soil pollution and construction waste, protecting cultural relics and resources, regularly checking the implementation and effect of measures, and correcting deviations in a timely manner;
- setting relevant environmental objectives.

GREEN DEVELOPMENT

Goal for controlling carbon emission	Decrease carbon dioxide emissions per RMB10,000 output value by 3.6% during the "14th Five-Year Plan" period.
Goal for reducing waste discharge	Promote waste classification and disposal, recycling and reuse, and continue to reduce emissions.
Goal for saving energy	Decrease overall energy consumption per RMB10,000 output value by 3% during the "14th Five-Year Plan" period.
Goal for saving water	Vigorously promote water conservation and utilization of water resources, and increase the utilization rate of waste water year by year.

• Emissions

The Company's emissions mainly include non-hazardous wastes such as sulfur dioxide, nitrogen oxides, chemical oxygen demand, ammonia nitrogen and construction waste generated in production and operation. During the Reporting Period, in compliance with relevant laws, regulations and regulations on environment, the Company implemented the "three simultaneous" system, as well as environmental protection acceptance and pollutant discharge permit requirements, performed daily operation management and equipment maintenance, and reduced waste gas, waste water, noise and solid waste (including hazardous waste) from the source by regulating process control and disposal, so as to reduce the impact on the surrounding environment and sensitive points.

Exhaust management

The Company has controlled the emission of nitrogen oxides, sulfur dioxide and other exhaust gases in an effective manner by adjusting its production capacity structure and promoting environmental protection technology transformation. The major measures taken by the Company include but are not limited to:

- The Company adopted factory production mode in aggregate production, and dust collectors and spray systems were installed in all directions to reduce dust;
- The Company eliminated a total of 4.25 million tons of outdated production capacity of its cement enterprises, and carried out environmental protection technology transformation to achieve ultra-low dust emissions.

Waste management

In terms of waste reduction, the Company prefers green building materials and promotes the reduction of construction waste at source. It strengthened the recycling of non-hazardous waste, so as to save energy and reduce consumption while reducing waste generation.

GREEN DEVELOPMENT

Case: Achieving “three modernizations” of domestic waste leveraging a cement kiln incineration system

Gezhouba Laohekou Cement Co., Ltd., a subsidiary of the Company, treats municipal solid waste taking use of a cement kiln incineration system, and replace part of coal combustion with the heat generated by the incineration of domestic waste. The annual disposal of domestic waste was 155,000 tons, and by using the system, 16,000 tons of coal would be saved throughout the year. The domestic waste generated by incineration is directly flow into the cement kiln as cement raw materials, which reduces the exploitation of traditional non-renewable fuels and natural resources, avoids the secondary pollution on the environment caused by landfill and incineration, and eventually achieves domestic waste processing in a harmless, volume reduction and resource utilization manner.

The Company’s emissions during the Reporting Period are summarized as follows¹:

Unit: RMB

Item of indicator	Unit of indicator	2021
Total greenhouse gas emissions ²	Tonnes CO ₂ e	6,623,188
Direct greenhouse gas emissions	Tonnes CO ₂ e	3,588,119
Indirect greenhouse gas emission	Tonnes CO ₂ e	3,035,069
Unit greenhouse gas emissions for operating revenue	Tonnes CO ₂ e/RMB ten thousand	0.21
Total sulfur dioxide emissions	Tonnes	8,385
Total nitrogen oxides emissions	Tonnes	17,252
Chemical Oxygen Demand (COD)	Tonnes	6,966
Total ammonia nitrogen emissions	Tonnes	1,061
Total hazardous wastes ³	Tonnes	2,263
Unit total hazardous wastes generated for operating revenue	Tonnes/RMB ten thousand	0.73
Total non-hazardous wastes ⁴	Tonnes	47,589,712
Unit total non-hazardous wastes generated for operating revenue	Tonnes/RMB ten thousand	1.52

Notes:

- 1 Wastes statistics covers the businesses of the Company in the PRC including traditional energy, new energy and comprehensive smart energy, water conservancy, ecological protection, comprehensive transportation, municipal, property construction, real estate, construction materials, civil explosives, equipment and manufacturing.
- 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). The scope (including direct emission and indirect emission) does not cover construction material segment.
- 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 2021, 47,336,533 tons of waste slags were generated during construction, and 253,179 tons of sludge were generated from sewage treatment plants under the environmental protection sector.

GREEN DEVELOPMENT

• Use of energy and resources

Adhering to the concept of green and sustainable development, the Company has formulated the Environmental Protection and Energy Conservation Management Regulations of China Energy Engineering Corporation Limited in strict accordance with the Energy Conservation Law of the People's Republic of China, the Interim Measures for the Supervision and Administration of Energy Conservation and Emission Reduction of Central Enterprises. The Company integrated the concept of resource conservation in various production and operation activities and promoted the application of new technologies, new equipment, new materials and new processes, so as to eliminate high-energy-consuming equipment and facilities, optimize the efficiency of resource use, and build a resource-saving and environmentally friendly enterprise.

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

- The Company has carried out energy saving and consumption reduction and ultra-low emission transformation of old boilers to improve the thermal efficiency of boilers;
- The Company implemented energy conservation and carbon reduction for its cement enterprises, formulated and implemented energy conservation plans and energy conservation technological transformations, preferably used energy conservation and environmental protection equipment, and implemented high-efficiency energy-saving fans and new energy-saving blowers to effectively reduce power consumption per unit of product;
- The Company established a loop waste water utilization system to introduce waste water discharged during the waste heat power generation into the reclaimed water collection tank. After satisfying the standard treatment, it can be reused for, among others, irrigating green plants in the factory area, sprinkling water to reduce dust, cleaning roads, which can save approximately 20,000 tons of water in total throughout the year.

GREEN DEVELOPMENT

During the Reporting Period, the main resource utilization of the Company is summarized as follows¹:

Unit: RMB

Item of indicator	Unit ²	2021
Electricity consumption	Ten thousand kWh	442,241
Gasoline consumption	Tonnes	58,570
Diesel consumption	Tonnes	937,859
Natural gas consumption	Ten thousand cubic meters	557
Fuel oil consumption ³	Tonnes	62
Purchased power consumption	Million kilojoules	0
Other energy consumption	Tonnes of standard coal equivalent	166,269
Comprehensive energy consumption ⁴	Tonnes of standard coal equivalent	2,170,014
Unit comprehensive energy consumption for operating revenue	Tonnes of standard coal equivalent/RMB ten thousand	0.070
Total production water consumption	Tonnes	1,613,645
Unit water consumption for operating revenue	Tonnes/RMB ten thousand	0.052

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 excludes the energy consumption of construction material segment.
- 2 The statistical units of energy-saving operation index data are presented according to the original statistical units.
- 3 During the Reporting Period, some subsidiaries used environmentally friendly fuel oil as alcohol-based fuel for canteens, the Company added such type of energy consumption.
- 4 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).

GREEN DEVELOPMENT

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 by preparing and implementing the project environmental protection plan, refining and decomposing environmental protection responsibilities, carrying out refined environmental protection management of project operations, and implementing environmental assessment measures for project construction, so as to minimize the impact of the project on the natural environment. The Company proactively adopted measures for ecological restoration and biological diversity protection to minimize and compensate for damage to the environment. During the Reporting Period, the Ganjiang Xingan Navigation and Power Project in Jiangxi Province undertaken by Gezhouba No.1 Company of China Energy Construction Group was awarded the title of “2021 National Soil and Water Conservation Demonstration Project”; Shimen Company, a subsidiary of Gezhouba Cement Company under China Energy, was awarded the provincial environmental protection integrity enterprise; Hanchuan Company, a subsidiary of Gezhouba Cement Company under China Energy, was selected into the central ecological environment fund reserve.

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.

GREEN DEVELOPMENT

Case: Breeding and releasing to supplement biological resources of water areas

The Company actively implemented the concept of green development, and has been committing to achieving the harmonious coexistence of human and nature while operating its business. Since 2016, Huilongshan Project undertaken by Guangxi Water Conservancy and Hydropower Engineering Bureau Co., Ltd. of China Energy Engineering Group, a subsidiary of the Company, has been organizing proliferation and release activities every year during the construction period with the owner, and released nearly 300,000 fish fries of various types over the past five years. The company also established release stations of hydropower stations which prevent the fish migration channel from being blocked, so as to ensure the steady construction progress of hydro-power stations, and effectively supplement the biological resources of some waters in the national nature reserve.

Case: Successfully discovered the PPP model to restore the ecology of the abandoned open-pit mine in Wuxue

Since 2018, China Energy Engineering Group Southern Construction and Investment Co., Ltd., a subsidiary of the Company, has been extensively engaged in the ecological management and road landscape greening projects of the abandoned open-pit mine in Wuxue under the PPP mode, built the road with a length of 33 kilometers along the Yangtze River into green landscape corridors, and conducted ecological restoration of 12 abandoned mines along the line and 36 abandoned mines in surrounding areas. Over years of efforts, the management of the abandoned mines in the PPP project has been substantially completed, showing vigor everywhere, achieving a win-win situation for the ecological environment, economic and social benefits of Wuxue in Hubei Province, and setting a good example for the management of open-pit mines in Hubei Province.



Before management



After management

GATHERING EMPLOYEES

1. BUILDING A DIVERSE TEAM

Upholding the “people-oriented” concept, the Company has 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 and the Labor Contract Law of the People’s Republic of China and the requirements of national and local laws and regulations.

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 follows the *Labor Contract Law of the People’s Republic of China*, *the Social Insurance Law of the People’s Republic of China* and other related laws and regulations, and has formulated and implemented the *Measures for the Management of Labor Contracts*, *Detailed Implementation Rules for the Management of Labor Contracts*, *Regulations for the Management of Labor Employment*, *Regulations for the Management of Wage Income*, and *Administrative Measures for the Workers’ Congress* as well as the principle of “equal pay for equal work”, to safeguard employees’ rights to labor compensation, social security, rest and vacation, labor protection, among others, and establish a standardized remuneration and package system, strictly implement laws and regulations regarding labor and social protection as promulgated by the national and local government he/she locates, make contribution to local pension, medical and other insurance plans.

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 *Labor Law of the People’s Republic of China* and the *Prohibition of Child Labor Provisions*, and protests against any form of child labor or forced labor. On top of regulating employment according to the law, 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.

GATHERING EMPLOYEES

During the Reporting Period, the Company had 115,325 employees in total, all of which are full-time, 4,755 employees were recruited, and the employee turnover rate was 3.79%¹.

Employment of the Company's employees in 2021:

Name of item	Unit	2021
Total number of employees	Person	115,325
By employment type		
Full-time	Person	115,325
Part-time	Person	0
By gender		
Male employees	Person	91,850
Female employees	Person	23,475
By age		
Aged 35 and below	Person	41,220
Aged 36 to 45	Person	28,556
Aged 46 to 54	Person	33,685
Aged 55 and above	Person	11,864
By title and skill level		
Senior professional	Person	2,647
Deputy senior	Person	15,950
Intermediate	Person	22,398
Junior	Person	17,629
Senior technician	Person	2,137
Technician	Person	6,745
Senior worker	Person	12,023
Intermediate worker	Person	3,949
Junior worker	Person	1,132
Other personnel	Person	30,715

Note:

1. The Company has not yet established a statistical mechanism for employee turnover rate divided by gender, age and region, and therefore the Company does not disclose such data. We will try to establish a statistical and disclosure mechanism in the future.

GATHERING EMPLOYEES

Name of item	Unit	2021
By educational background		
PhD holder	Person	343
Postgraduate	Person	13,205
Undergraduate	Person	46,785
College	Person	23,453
Technical secondary school and below	Person	31,539
By position		
Management personnel	Person	38,254
Professional technical personnel	Person	39,690
Skilled operation personnel	Person	22,789
Other personnel	Person	14,592
By region		
Domestic	Person	107,273
Overseas	Person	8,052

GATHERING EMPLOYEES

2. OCCUPATIONAL HEALTH AND SAFETY

The occupational health and safety of employees is crucial to the long term and stable development of the Company. The Company strictly abides by the Occupational Disease Prevention Law of the People's Republic of China and the Production Safety Law of the People's Republic of China and other laws and regulations and constantly improves the occupational health and safety management system, with a view to achieving the pursuit of "zero death and zero injury".

- **Guarantee occupational health**

The Company solidly carries out occupational health management and implements health management responsibility in strict accordance with the *Occupational Disease Prevention Law of the People's Republic of China*, the *Plan for Handling Public Health Emergencies in the PRC*, the *Measures for the Supervision and Administration of Occupational Health Surveillance* and other national laws and regulations. Adhering to the principle of prevention first and combination of prevention and control, we prevent and control from the source according to law, implement multiple policies to protect the health of workers, and continue to strengthen the management of occupational hazards, strengthen the protection of the operation process, and actively and orderly carry out occupational health management to ensure occupational health. During the Reporting Period, there was no occupational health emergencies occurred in the Company.

In terms of the prevention and control of COVID-19 epidemic, in response to the still severe and complex domestic epidemic, the Company regards epidemic prevention and control as the most urgent priority, strictly implements territorial prevention and control regulations, strictly implements various epidemic prevention and control measures, and strengthens the epidemic prevention and control management at the headquarters building, as well as the management and approval of personnel movement, and actively organizes vaccinations, ensures the orderly delivery of nucleic acid testing services, and inspects special epidemic prevention and control projects to ensure the safety and health of employees. During the Reporting Period, no employee at the Company's Beijing office has been infected with the COVID-19 epidemic.

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 management;
- 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;

GATHERING EMPLOYEES

- strengthened occupational health publicity and training to enhance the staff's awareness and ability of occupational health protection;
- 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.



Organize employees to accept nucleic acid monitoring



Organizing employees to accept vaccinations against COVID-19 virus

• Promote safe production

The Company thoroughly implements the spirit of General Secretary Xi Jinping's important exposition on production safety, as well as the decision-making and deployment of the Party Central Committee and the State Council on production safety, strictly follows the *Production Safety Law of the People's Republic of China*, the *Administrative Regulations on the Work Safety of Construction Projects*, the *Measures for Work Safety Incident Reporting, Investigation and Disposition*, the *Interim Provisions on the Supervision and Management of Work Safety at Central Enterprises* and other national laws and regulations, and implemented safe production decisions and deployments in all-round way to ensure safe production. The Company has established a safety production management system focusing on the safety of the entire staff, fully implemented the main responsibility for safety production, and built a strong line of defense for safety thinking.

During the year, the Company further improved the relevant management systems, revised the Management Regulations on Safety Production, Safety Production Responsibility System, Administrative Measures for the Inspection and Management of Production Safety Accidents and Measures for Management of Safety Risk, and formulated the Management Measures for Project Process Safety, Detailed Rules for the Evaluation and Scoring of QHSE Work of Subsidiaries, clarified the rigid requirements of "twelve in place" and "three basics and four modernizations" for the first time in the system, and introduced an integrated, all-factor, and penetrating management idea to promote enhancement of intrinsic safety management capabilities.

GATHERING EMPLOYEES

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

- Adhering to the top-level design, closely following the basic compliance and action policy of “Twelve in Place”, issuing implementation opinions to clarify work measures in a written form and clarify work arrangements on project-by-project basis, focusing on building a general safety management system to improve intrinsic safety management capabilities, focusing on “Twelve in place”, organizing to give theme lectures, special supervision, regular inventory, among others, at various levels, and promoting the “234” project construction, special rectification three-year action and other key tasks; paying close attention to the three major tasks, and carry out in-depth special rectification on the three-year action focused on tackling the tough problems, and “making up for shortcomings, strengths and weaknesses” based on the “twelve in place” safety production requirements and fulfilling the “two lists” of hidden problems and institutional measures to promote special rectification to achieve effective results;
- Adhering to the guidance of the system, thoroughly studying and implementing the new Safety Production Law, and coordinating the construction of a dual prevention mechanism for safety production responsibility system, risk classification management and control, and hidden danger investigation and management; holding weekly reports and warnings of major and higher-level risks, and risk analysis meetings every quarter; organizing and carrying out full-coverage safety production inspections and rectifications, spring and autumn safety production inspections, fire prevention and cold protection inspections and rectifications, to strictly control various safety production risks;
- Adhering to strict management and carrying out special governance of subcontracting management of engineering projects among all units to improve the information sharing and coordination and linkage working mechanism of hidden dangers in production safety; centering on the “twelve in place”, organizing the performance of safety production guarantees for the centenary of the founding of the Party, safety production guarantees for the Winter Olympics and Winter Paralympic Games, stability-related risk investigations, safety production inspections for projects in Guangdong, safety production inspections for civilian explosives, the investigation and rectification of potential safety risks of old facilities, the inspection of non-coal mine safety production, the investigation of emergency capacity building, the supervision and inspection of power safety production, among others, and going all out to ensure safety and stability;
- Highlighting quality and ability, strengthening effective and rigid safety education and training, organizing a series of targeted “safety production month” activities, and actively participating in safety production knowledge competitions. The Company ranked 12th among state-owned enterprises in the national safety knowledge competition, 16th among state-owned enterprises in the 3rd session of national emergency legal knowledge competition and 4th among state-owned enterprises in the safety knowledge competition in power industry; effectively enhancing the safety production awareness and competence of all employees; publicizing the Company’s safety production work results on the People’s Daily Online, Guangming.com, and the website of the Emergency Management Department to showcase a good image of the Company’s safety and civilization.

GATHERING EMPLOYEES

Safety production of the Company in 2021:

Item	Unit	2021
Investment in safety production	RMB0'000	267,395.38
Full-time personnel on safety	Person	4,482
Total number of employees participating in safety training	0'000 person-times	45.2

Item	Unit	2021	2020	2019
Full-time employees died in production accidents in the past three years	Person	1	0	3
Death rate per thousand full-time employees in the past three years	Person/thousand persons	0.01	0	0.02
Number of employees died in production accidents of contractors (subcontractors)	Person	11	13	16

Item	Unit	2021
Safe production accidents	time	10
Lost working days due to work-related injuries ¹	day	72,000

Note:

- 1 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.

3. DEVELOPMENT AND TRAINING

The Company attaches great importance to the education and training of employees. With the development goal of “building a world-class company with global competitiveness”, and with the purpose of serving enterprises and employees for common development, focusing on the construction of a high-quality talent team and employee capacity building, the Company has formulated and implemented the Administrative Measures for Education and Training, actively established a training system and endeavored to build a training platform to make full use of internal and external training resources, and carry out hierarchical and classified business training in various forms, multi-channel and all-round. The business skills and comprehensive quality of employees have been generally improved, providing intellectual support and talent guarantee for accelerating the realization of the development goal of “building a world-class enterprise with global competitiveness”.

In 2021, in order to further strengthen the top-level design and unified construction of training, the Company has carried out the following key tasks: establishing a company training center as the main body for the implementation of company-level training; formulating the “14th Five-Year Plan” to build various employee training growth paths; forming a “1+N” training system to promote the implementation of various training tasks; actively overcoming the impact of the epidemic, increasing online training efforts and training funds, and focusing on building an online training platform covering all employees to adapt to new environmental change. The Company conducted training at three levels: “company level”, “headquarters department level” and “subsidiary level” to provide employees with opportunities for learning and improvement as much as possible. During the Reporting Period, the Company invested RMB182 million in training and completed 4,053,195.98 hours of employee training, with an average training time of 55.17 hours per person.

GATHERING EMPLOYEES

Employee training of the Company in 2021:

Item	Unit	2021
Number of trained employees by position of employees		
Management personnel	0'000 person-times	28.99
Professional technical personnel	0'000 person-times	34.08
Skilled operation personnel	0'000 person-times	11.90
Other personnel	0'000 person-times	1.69
Number of trained employees by training content		
Job training	0'000 person-times	55.26
Continuing education training	0'000 person-times	4.58
Other training	0'000 person-times	16.82
Percentage of trained employees by gender		
Percentage of trained male employees	%	90.66
Percentage of trained female employees	%	84.35
Percentage of trained employees by employee type		
Percentage of trained management personnel	%	89.63
Percentage of trained professional technical personnel	%	90.23
Percentage of trained skilled operation personnel	%	85.13
Average training hours of trained employees by gender		
Average training hours of male employees	Hour/person	56.63
Average training hours of female employees	Hour/person	56.69
Average training hours of trained employees by employee type		
Average training hours of management personnel	Hour/person	58.30
Average training hours of professional technical personnel	Hour/person	53.62
Average training hours of skilled operation personnel	Hour/person	31.98

GATHERING EMPLOYEES

4. EMPLOYEE CARE

The Company attaches great importance to improving the happiness of employees, and carried out extensive activities themed by “I do practical things for the masses”, and invested more than RMB106 million in total, solved over 4,200 problems for employees and more than 1,800 practical problems. The Company organised a variety of cultural and sports activities, so that the majority of employees can share the achievements of its development and build a stable and harmonious development environment.

During the year, the Company integrated employee health management into the implementation of its “Several Opinions” under the spirit of the “Healthy China 2030” Planning Outline and the State Council’s Opinions on Implementing Healthy China Actions, so as to promote the practice of the “Healthy China” strategy in China Energy. The major work carried out by the Company includes but is not limited to:

- Building “big health” management system and vigorously advocating the scientific health concept. The Company formulated the Guiding Opinions on Implementing the “Healthy China Energy” Action, and incorporate the “Healthy China Energy” action into the overall requirements of “Building a Harmonious Society”, “Healthy China” and “Patriotic Health Campaign”, and integrated employee health management into enterprise management system, with a focus on improving health awareness, and actively spreading the concept of health;
- Adhering to the priority of the front line, and giving prominence to occupational health protection. The Company regarded the project department as the “main battlefield”, established sound work procedures and occupational health documents, conducted whole-process targeted protection and physical examinations for employees who are exposed to occupational hazards, and properly arranged employees with occupational taboos, occupational-related health hazards and occupational diseases;
- Promoting the standardized construction of employee camps. The Company implemented the Guidelines for Basic Configuration of Living Environment for Construction Workers on Construction Sites (2020 Edition) issued by the Ministry of Housing and Urban-Rural Development, promoted the standardized construction of camps and ancillary facilities, and improved the standard of camp construction;

GATHERING EMPLOYEES

- Improving the sanitation of the working environment and strengthening the mechanism for handling public health emergencies. The Company improved the corporate environmental sanitation infrastructure to create a reasonable layout, clean and hygienic, green and environmentally friendly working environment for employees, and provided equipment and facilities that take into account ergonomic requirements and health needs;
- Attaching great importance to the prevention and control of infectious diseases, and effectively improving the level of employee physical examination protection. In accordance with the requirements of the Law on the Prevention and Control of Infectious Diseases, the Company has improved the emergency plan for the prevention and control of emergencies such as infectious diseases and food-borne diseases according to the characteristics of clustering of production and operation operations;
- Protecting employees' rights to rest and recuperate. The Company implemented the national policies and regulations on employee working hours, national annual festivals and anniversary holidays, and strictly implemented labor and welfare systems such as paid vacations and medical rest and recuperation;
- Organising fitness activity. The Company formulated and implemented a fitness plan for employees, and insists on carrying out healthy exercises such as workplace exercises and eye exercises;
- Refining and optimizing the "Spiritual Harbor Project". The Company regularly conducts analysis on the ideological status of employees to understand the psychological and ideological status of employees in a timely manner;
- Promoting hygienic and scientific diet. In accordance with the relevant provisions of the Food Safety Law, the Company has established staff canteens, strengthened nutrition and dietary guidance for working meals, and encouraged employees to participate in actions to reduce salt, oil and sugar.

GATHERING EMPLOYEES

Case: Building a construction with “five camps” to improve the quality of work and life of employees

Taking China Gezhouba Group Stock Company Limited (“CGGC”) as a pilot project, Energy China has built “five camps” to improve the quality of work and life of front-line workers. Since 2021, CGGC has intensified efforts to integrate resources in planning, design, manufacturing, and on-site assembly, and quickly and efficiently built a number of prefabricated standardized camps with complete functions, reliable quality, safety and environmental protection, and practically implemented the standardized construction of project camps, to enable the grass-roots front-line workers work and live better in the new camp, shifting from “mechanical boring work and life” to “happy work and life”.

In terms of “green camp”, standardized design, factory production and prefabricated construction were applied to the new camp, and box-type houses that can be turned around and have a long service life was selected, so as to reduce pollution and save energy and material. “Photovoltaic +” and other comprehensive utilization were explored based on local conditions, to comprehensively reduce the energy consumption of the camp, and efficiently promote the effective use of energy in light of self-produced energy storage products.

In terms of “smart camp”, during the construction of the new camp, through QR code scanning, informatization and other management means, the use data of camp products is shared in all aspects to manage camp products in real time; in the process of camp software supporting services, management systems such as face recognition, intelligent fire early warning, and real-time monitoring of the construction area were implanted to achieve the intelligence of personnel management, safety management, and on-site management, as well as system integration.

In terms of “standard camp”, the new camp ensured comprehensive camp functions and unified standards from the source of design, unified design of the brand visual system, unified planning of the construction form, unified supply of supporting facilities, selection of high-quality brands, and guaranteed supply quality. Grading and classification standards were established to meet diverse needs.

In terms of “safe camp”, safe and environmentally friendly camp products with reliable quality was applied. Compared with prefab house, the box-type house adopted is safer in structure, more reasonable in design, stronger in material strength, and has stronger anti-seismic, anti-compression, thermal insulation, fireproof, waterproof, snowproof and windproof performance. Electronic fences and security early warning systems were built to ensure camp security.

In terms of “humanistic camp”, measures such as strengthening the bottom beam structure of the house, increasing the thickness of rock wool, optimizing the location of sockets, and increasing the bathroom space ensure a comfortable living experience in the camp. Activity areas such as the staff library, party member activity room, and gym were appropriately allocated to enrich the leisure and cultural life of employees. The integrated high-quality interior decoration of the house is environmentally friendly and practical, and is easy for living on arrival.



“Five Camps” Pilot Demonstration Building



“Five Camps” Pilot Demonstration Building

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 principle of “unified database establishing and hierarchical management”, with the goal of “improving quality and efficiency, 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 2021, the Company had a total of 98,190 suppliers.

During the Reporting Period, the major measures taken by the Company to further strengthen supply chain management include:

- The Company compiled and issued the Standards for the Construction of the Company’s Supplier Database, organized the optimization of the supplier database, and dismissed a group of suppliers with no business dealings, poor ability to perform contracts in good faith, and with major changes in business;
- The Company organized experts to review suppliers in blacklist, and released 43 suppliers in the sixth batch of group-level supplier blacklists;
- The Company carried out group-level recommendation of outstanding suppliers, organized the first strategic supplier conference during the 4th CIE, and signed strategic cooperation agreements with 18 domestic and foreign suppliers;
- The Company adopted “unified management and two-level centralized” procurement by establishing a two-level procurement management system at the group level and the enterprise level, centralizing the procurement management and procurement behavior to the corporate headquarters, and integrating the schedule procurement needs to implement batch intensive procurement, so as to promote improvement of the procurement management efficiency;

SUPPLY CHAIN MANAGEMENT

- 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;
- 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; intensified procurement supervision and the use of “big data procurement supervision” function at the electronic procurement platform to continuously improve the accuracy of supervision. A total of 6 on-site inspections and 4 online inspections were carried out throughout the year, and a total of 16 online supervision inquiry letters were issued, involving a total of 205 specific workflow inspections in 10 aspects.

Name of indicator	Unit	2021
Total number of suppliers by supplier classification		
Commodity supplier	/	55,915
Subcontractor	/	14,910
Service provider	/	27,365
Number of suppliers cooperating with the Company by region		
Domestic	/	97,127
Overseas	/	1,063

QUALITY CONSTRUCTION

1. BUILDING QUALITY CONSTRUCTION

The Company is a pioneer and an example in the thorough implementation of major national strategies such as carbon peaking and carbon neutrality, promoting major infrastructure construction and high-quality construction of the “Belt and Road” initiative, and has created a number of influential high-quality projects. With technological innovation and high-quality engineering, the Company showed the new responsibilities and new actions of great power.

Case: The first batch of units of the world’s largest Baihetan Hydropower Station under construction were put into operation to generate electricity

On 28 June 2021, the first batch of units of the Baihetan Hydropower Station, of which Energy China participated in its construction, was put into operation and was praised by General Secretary Xi Jinping. Baihetan Hydropower Station has a total storage capacity of 20.627 billion square meters, installed capacity of 16 million kilowatts single unit capacity of domestic units of 10 million kilowatts, which ranks first in the world, and annual average power generation of 62.443 billion kWh. It is a major national project to implement “West-to-East Power Transmission Project”, and the largest and most technically difficult hydropower project under construction in the world today.



Baihetan Hydropower Station

QUALITY CONSTRUCTION

Case: Hami molten salt tower type 50,000-kilowatt solar thermal power station pioneered the configuration of double hot melt tanks

The Hami molten salt tower type 50,000-kilowatt solar thermal power station invested, designed, constructed, commissioned, operated and maintained by Energy China is located in Yiwu County in Hami of Xinjiang, which is one of the regions with the most abundant sunshine in China, with an annual sunshine of more than 3,500 hours. It is the first solar thermal power generation demonstration project in China and the first solar thermal power generation demonstration project in Xinjiang. The project pioneered the configuration of double hot melt tanks, which improved the reliability and flexibility of the unit.



Hami molten salt tower type 50,000-kilowatt solar thermal power station

Case: Pakistan Karachi Nuclear Power Project Unit No.3 successfully connected to the grid for the first time

Pakistan Karachi Nuclear Power Project Unit No.3, an overseas demonstration project of "Hualong One", that Energy China participated in its design and construction successfully connected to the grid for the first time, which has laid a solid foundation for the commercial operation of subsequent units." Hualong One" is an innovation of the third-generation pressurized water reactor nuclear power developed and designed in China with completely independent intellectual property rights. It meets the highest international safety standards and is the preferred plan for the third generation of nuclear power that China has contributed to the world.



Pakistan Karachi Nuclear Power Project

QUALITY CONSTRUCTION

2. STRICTLY CONTROL OF ENGINEERING QUALITY

In accordance with the Product Quality Law of the People's Republic of China, the Construction Engineering Quality Management Regulations and other relevant laws and regulations, the Company revised and released a new version of the Quality Management Regulations, improved the quality management system, and further clarified leadership construction, institutional management, the rigid requirements for leadership building, institutionalized management, education and training and capacity building, risk management and control and hidden danger investigation and governance, process management, assessment, reward and punishment, and implemented the same step by step. The Company released annual quality management objectives and tasks, signed quality responsibility letters, and strengthened quality inspections and assessments, to strictly control quality risks, effectively prevent quality accidents, and ensure the quality of projects, products and services. During the Reporting Period, no quality accident occurred, and acceptance rate of projects under construction, qualification rate of equipment product, qualification rate of industrial product, and qualification rate of survey and design finished product reached 100%.

During the Reporting Period, the Company vigorously promoted quality excellence, actively strived for the qualification of national awards, and won 29 national high-quality engineering awards (including 10 gold awards), 25 national excellent engineering consulting achievement awards, 49 China Electric Power Quality Projects, 2 Fidic Engineering Project Excellence Awards, and nearly 1,000 other quality awards at provincial and ministerial-level and above level; 10 company-level "benchmark projects" were commended for the first time, and the group-wide special training on excellence was held for the first time to continuously enhance the brand value of "Energy China Cup", showing corporate image with high-quality projects.

3. PROMOTING TECHNOLOGICAL INNOVATION

Innovation is the first driving force for development. The Company accelerated the implementation of the strategy of "strengthening itself with science and technology, and developing through innovation" by continuously improving the technological innovation system, the technological innovation system and mechanism, and stimulating the vitality of technological innovation. It is oriented to market development, production and operation, and transformation and upgrading. Focusing on the "30•60" system solution, "one center" and the "two basic points" of energy storage and hydrogen energy, the Company made every effort to create a source of original technology and a long modern industrial chain, supporting and leading carbon peaks and carbon neutrality. Focusing on intelligent construction, smart energy, low-carbon energy, traditional power upgrade, infrastructure construction, advanced industrial production, comprehensive management of ecological environment, high-end equipment manufacturing and digital transformation, as well as 12 major businesses, the Company accelerated the overcoming of a number of key core technologies, and played a leading role of scientific and technological innovation at a higher level and on a larger scale in implementing national strategy, promoting the development of energy, power and construction industries, and supporting enterprises to accelerate high-quality development, and provided strong scientific and technological support for building a world-class enterprise with global competitiveness. During the Reporting Period, the Company established high-end platforms such as Digital Technology Group (數科集團), Energy China Construction Hydrogen Energy Co., Ltd. (中能建氫能源有限公司), "30•60" Research Institute, among others, to create a core carrier for technological innovation and digital transformation.

QUALITY CONSTRUCTION

The Company improved the technology management system and innovated the technology R&D investment mechanism. The Company formulated the Provisions for the Administration of Scientific and Technological Work, and established a top-level design for scientific and technological innovation such as the overall requirements for scientific and technological innovation, functional orientation, research and development mechanism and incentive mechanism of the Company; formulated Management Measures for Technical Expert System, established internal technical expert committee to provide consulting and decision-making support for the Company's technological innovation and digital transformation, market development, engineering project management, etc.; formulated the Technology Project Management Measures to innovate the technology R&D investment mechanism. The Company implemented the mechanism of "taking the leading role" for major scientific and technological projects; established new technology demonstration project management mechanism to open new channels for scientific and technological innovation; promoted the establishment of scientific and technological innovation funds by providing special financial support, to give play to the two-wheel driving role of "technology + capital"; formulated the Management Measures for New Technology Demonstration Project and established a new technology demonstration project management mechanism to opens new channels for scientific and technological innovation; issued the Administrative Measures for Incentives for Scientific and Technological Innovation, improved incentive mechanism for scientific and technological innovation, set up special funds for scientific and technological awards, and encouraged establishment of medium- and long-term incentive mechanisms such as equity and dividend incentives to implement a revenue-sharing mechanism for transformation of scientific and technological achievements; formulated the Measures for Managing R&D Platform and improved the R&D platform management program to improve the Company's technological innovation capabilities; formulated the Management Measures for New Technology Demonstration Project and established a new technology demonstration project management mechanism to opens new channels for scientific and technological innovation.

The Company has improved the intellectual property protection system, and carried out innovation incentives and intellectual property protection in strict accordance with the Patent Law of the People's Republic of China, Regulations on the Administration of National Standards Involving Patents (Provisional), Trademark Law of the People's Republic of China, Copyright Law of the People's Republic of China, 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 and patent copyright. The Company established and implemented the Guiding Opinions on Intellectual Property Legal Protection of Energy China Engineering Group Co., Ltd. (Interim), Measures for the Management of Science and Technology Projects, Measures for the Management of Science and Technology Innovation Incentives, among others, to standardize the application, establishment, implementation, and acceptance of scientific and technological projects.

Item of indicator	Unit	2021	2020	2019
Total number of patents	/	10,147	10,043	9,208
Number of new patents	/	1,893	1,472	1,418
Number of new patents for invention	/	210	181	201
Number of new software copyrights	/	261	218	91
R&D expenditure	RMB million	9,909	6,681	5,512
Number of technological R&D projects	/	851	658	857

QUALITY CONSTRUCTION

During the Reporting Period, the Company's core scientific research efforts and achievements mainly include:

- It clarified the development direction of scientific and technological innovation; released the "14th Five-Year" technology development plan and informatization plan, and completed the top-level design for technological innovation and digital transformation. The scientific and technological development plan focuses on the Company's 12 major businesses, and proposes a total of 100 major tasks (including 42 major tasks involving "dual carbon") in 8 key areas and 32 research directions;
- It launched the first batch of scientific research projects under "technology reward system (揭榜掛帥)", released 9 major scientific and technological projects and 20 key R&D projects, with a focus on key core technologies;
- It won a total of 189 provincial, ministerial and industry-level science and technology awards;
- It continued the creation of a team of scientific and technological talents, with 66 experts enjoying special allowances from the Chinese government, 13 national survey and design masters, 5 engineering experts in Millions of Talents Project in the New Century, and 26 national technical experts;
- It implemented thoroughly digital transformation through coordinating the construction of "one network, one cloud, and one big platform", and promoting digital industrialization and industrial digitization; held seminars on digital economy and digital transformation, signed a strategic cooperation agreement with Inspur Group, and carried out more comprehensive and effective cooperation in promoting the "integration of industry and information";
- It carried out scientific and technological innovation action plan, completed 8 major green and low-carbon tasks such as "Research and Application of Offshore Wind Power Integration Technology", "Research on New Energy Power Supply Optimization Technology" and "Research on Smart Energy Technology". The relevant results are applied in the project;
- The DC circuit breaker developed by the project "Development of 535kV Hybrid DC Circuit Breaker Based on Coupling Negative Voltage Circuit" has been in stable live trial operation for nearly 4,000 hours and passed the acceptance test successfully.

With the steady increase in the number of intellectual property rights of the Company, the continuous improvement of the level of technological independence, and the gradual enhancement of core competitiveness, the Company has gradually improved the management measures for knowledge, patent and copyright protection to effectively protect legitimate rights and interests.

QUALITY CONSTRUCTION

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

- The Company compiled intellectual property legal protection cases to provide specific guidance for all-round intellectual property protection, and revised the Administrative Measures for Legal Dispute Cases to further standardize the process of handling disputes;
- In terms of specific intellectual property management, the Company 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;
- The Company strengthened the management of relevant personnel and agreed on confidentiality obligations and non-compete obligations when necessary, to clarify legal responsibilities;
- The Company strengthened confidentiality management measures and strictly regulated the dissemination and leakage of intellectual property rights;
- The Company strengthened legal review, signed contracts and conducted legal review for intellectual property licensing, transfer or equity investment.

4. CARRYING OUT INTERNATIONAL COOPERATION

In light of the new international environment and the broad development space brought by the “Belt and Road” initiative, Energy China, 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”.

The Company comprehensively promoted the reform of the international business system and mechanism, systematically built a “one body and two wings” overseas priority development system, and created a new “1+2+N+X” overseas business management mechanism. Energy China International Group has completed its establishment and has become an important subject in promoting the transformation of overseas industrialization operations to full-industry chain operations, fulfilling the “Four Comprehensives and Six Centers” and “Five Functions”, and the development pattern has taken on a new look. The Company actively carried out international exchanges and cooperation through in-depth exchanges and discussions on clean energy power, comprehensive energy utilization, intelligent construction of hydropower stations, prefabricated buildings, among others. The Company has participated in more than 10 important annual summits and forums, including China-Arab States Expo, Hong Kong “Belt and Road” Summit Forum, 2021 China International Fair for Trade in Services, China-ASEAN Expo, China-Africa Economic and Trade Expo, Global Sustainable Transportation Conference, the “Belt and Road” Energy Ministerial Meeting, the 4th China International Import Expo. Under the basic principle of “helping local development and achieving mutual benefit and win-win situation”, and facilitating the fulfillment of the commitment of “no more new overseas coal-empowered projects”, with a focus on implementing local projects, the Company contributed to the sustainable and high-quality development of local economy with high-quality projects, and also positively contributed to the improvement of the well-being of the local people.

QUALITY CONSTRUCTION

The major overseas projects implemented by the Company during the Reporting Period include but are not limited to:

- The Company signed the 860 MW gas-steam integration loop power station project in the Republic of Moldova, Russia. After the project is completed, it will help to improve the power supply in Moldova, Penza and nearby areas, and promote local employment;
- The largest gas loop power station in Central Asia – the 1,500 MW gas integrated loop independent power generation project of the Syr Darya River in Uzbekistan officially started construction, which is expected to reduce carbon dioxide emissions by 2.2 million tons per year;
- The first production line of the Umm Al Quwain seawater desalination project in the United Arab Emirates was officially put into commercial operation, supplying water to the UAE municipal pipeline network. This project is one of the five major seawater desalination projects in the world and the second largest membrane desalination plant in the world. After completion, it will benefit 2.20 million inhabitants in the United Arab Emirates;
- Singapore's first large-scale floating photovoltaic project, the Tengge Reservoir floating photovoltaic project, was fully connected to the grid for power generation and was officially put into use.

5. PROTECTION OF CUSTOMER RIGHTS

While constructing high-quality projects, 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 Administrative Measures for the Review of Contracts for Major Domestic Projects and the Customer Relationship Management Measures for the Domestic Market, established and improved an institutionalized, standardized and normalized customer relationship management mechanism, and strengthened management in areas such as customer information, customer communication and customer needs. In response to project complaints, we continued to strengthen compliance supervision to timely control the problems in project management. We guide, supervise, and coordinate with relevant enterprises to formulate response measures to ensure that the concerns of all parties are properly responded. 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

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 strictly prohibits such behaviors as bribery, extortion, fraud and money laundering. There was no lawsuit on corruption during the Reporting Period.

During the Reporting Period, the major measures the Company have taken to further enhance anti-corruption include:

Improving the integrity system	<ul style="list-style-type: none"> Further strengthened the construction of the integrity system, carry out anti-corruption in accordance with the Company's Measures for Strengthening the Education of Leaders to Fight Corruption and Advocating Integrity and Control, and Management Measures for Discipline Inspection, Supervision, Petition and Reporting, among others, promoted "corruption discourage, corruption inability and corruption unwillingness" and strictly prevented commercial bribery and commercial corruption.
Focusing on integrity education	<ul style="list-style-type: none"> Performed integrity education by holding meetings, preparing and printing integrity culture books, and holding theme activities, among others, held annual warning education conferences, reported typical cases of violations to educate and warn people around them with things and cases around them, so that integrity education covers directors and employees at all levels; Organized a series of activities on clean governance with the theme of "integrity" to create a clean and honest atmosphere.
Establishing reporting channels	<ul style="list-style-type: none"> Further unblocked the reporting channels such as letters, visits, phone calls, and the Internet, gave full play to the role as a public supervisor, kept strictly confidential the information of whistleblowers, and followed up and dealt with feedback in a timely manner.
Strengthening integrity supervision	<ul style="list-style-type: none"> Organized 3 inspection teams to carry out special inspections in conjunction with the inspection team of directly affiliated enterprises, and organized in-depth rectification of various problems; Adhering to standardizing project management as the focus, strengthened on-site supervision of key projects, conducted supervision and inspection in-depth of the construction site of projects under construction, strictly prevented project integrity risks and corruption; Seizing important points by focusing on the "six eye-keeps", and adopting the "Four Nos and Two Straights" to do surprise inspections on 7 affiliated enterprises and 3 project departments, focusing on supervision of corruption-prone areas; Conscientiously sorted out and investigated clues related to corruption and work style issues around the masses, and severely cracked down on corruption and work style issues around the masses; took the initiative to strengthen cooperation with local commissions for discipline inspection and supervision, and severely cracked down on behaviors that harm the interests of Company.

Item of indicator	Unit	2021	2020	2019
Number of training on anti-corruption publicity and education	time	5,311	6,918	3,302
Total number of participants in training on anti-corruption publicity and education	person-times	133,030	114,218	128,391

COMMUNITY INVESTMENT

1. SUPPORTING RURAL REVITALIZATION

The Company resolutely implements the spirit of the important instructions of General Secretary Xi Jinping and the major decisions and arrangements of the Party Central Committee, regards consolidating the achievements of poverty alleviation and assisting rural revitalization as a major political task, and continues to strengthen poverty alleviation and joint construction. Leveraging the advantages of the entire industry chain and based on the industrial needs and resource of the region for poverty alleviation, the Company driven the development of the local economic and industrial chain taking full use of its own capabilities in engineering construction, investment and financing, management, technology, talent and resource integration. Meanwhile, the Company further expanded the ability of projects to absorb employment, and contribute to the promotion of high-quality economic development in the assisted areas through continuous talent support and intellectual assistance.

Under the requirements of the “Four No Picks”, the Company maintains the stability of the existing major assistance policies and continues to increase the investment in assistance. In 2021, the Company invested RMB15.1 million, an increase of RMB2.25 million or 17.51% over the planned RMB1.5 million at the beginning of the year. The funds are mainly used to improve infrastructure in backward areas, support and expand characteristic industries, and promote vocational skills training, care for students from disadvantaged families, and implement extensive assistance. The Company continued to carry out consumer assistance, mobilized its subsidiaries to purchase agricultural and sideline products from poverty-stricken areas, and promote and expand the sales channel and market share of products in poverty-stricken areas taking full use of internal and external e-commerce platforms. The actual consumption assistance for the year reached RMB24.35 million, exceeding the plan RMB8.65 million or 55.10% at the beginning of the year, effectively promoting the continuous and stable income increase of the poverty-stricken. The Company completed the selection of temporary cadres and the first secretary in the village of the new session seamlessly. Meanwhile, the temporary cadres have shown a good style of work and a spirit of responsibility in the flood control and disaster relief in Zhenba County, and they have tried their best to solve problems for the local people. The State-owned Assets Supervision and Administration Commission expresses satisfaction with the targeted assistance efforts of the Company during the reporting period.

COMMUNITY INVESTMENT

Poverty alleviation honor:

- Li Junfeng, served as the first secretary of Haopingzi Village, Zhenba County in March 2017. He has successively won honors such as the advanced individual in poverty alleviation organized by trade unions in Shaanxi Province, the advanced individual in poverty alleviation in Zhenba County, the advanced individual in poverty alleviation in Hanzhong City, and the Shaanxi Provincial Poverty Alleviation Contribution Award; He was selected twice as the outstanding first secretary by the Organization Department of the Shaanxi Provincial Party Committee. In 2021, he was awarded the title of "National Advanced Individual in Poverty Alleviation" by the Party Central Committee and the State Council.
- Dong Shuangtian, who served as a member of the Standing Committee of the Zhenba County Party Committee and Deputy County Head in 2016, was awarded the title of "Advanced Individual" for poverty alleviation in Hanzhong City, Shaanxi Province in 2019.
- Li Jie, who served as the first secretary of Yanglong Village in Xilin County in 2016, was awarded the title of "The Most Beautiful Poverty Alleviation Cadre" in Xilin County in 2016 and the "First Secretary Satisfied by the Masses" in Baise City.
- Li Xianchu, who served as the first secretary of Yanglong Village in Xilin County in 2018, won the title of "Excellent First Secretary of Poverty Alleviation" in Guangxi Zhuang Autonomous Region in 2019 and "Excellent First Secretary of Xilin County" in 2020.



"National Advanced Individual in Poverty Alleviation" Li Junfeng (second from left)
inspected the planting project in Haopingzi Village

COMMUNITY INVESTMENT

Case: Supporting to promote stable employment

The Company attaches great importance to the employment assistance for the poverty-stricken population, and combines the promotion of local employment with the promotion of labor export. The first is to support the development of local characteristic industries and promote the employment of people who have been lifted out of poverty. The second is to give full play to the ability of major projects under construction to absorb employment, and cooperate with all participating units to actively introduce a large number of local labor forces, especially to provide employment opportunities for families in need. The third is to prepare for employment of labor force. During the Reporting Period, the Company directly created 3,744 nearby jobs by investing in the construction of various support workshops and attracting investment and senior processing projects. The Tianxi Expressway project created more than 10,000 positions for Xilin County; directly recruited 5 people out of poverty and helped 263 of them go out to work.

COMMUNITY INVESTMENT

Case: Innovating the concept of assistance to support the industrial development of Zhenba County, Shaanxi

Based on the regional characteristics of Zhenba area in Shaanxi, the Company helped Zhenba County develop through industrial assistance, brand building, and expansion of a new path of assistance of “e-commerce + cooperatives + poverty alleviation households”. In 2021, the Company assisted Zhenba County sell products of RMB17.14 million, which greatly promoted the industrial development of Zhenba County and ensured the stable growth of local people’s income.

- The Company extensively explored its own needs by giving full play to the characteristics of the multi-faceted and wide-ranging construction projects of central enterprises, giving priority to purchasing agricultural and sideline products in Zhenba County, and encouraging qualified enterprises to sign long-term supply contracts for agricultural and sideline products with Zhenba County. Meanwhile, it actively called on upstream and downstream enterprises in the industrial chain to join in the consumption assistance.
- The Company assisted the masses to build an e-commerce platform to expand consumption channels and make full use of its own “Energy China mall” e-commerce platform advantage, and directly sold and encouraged employees and their families to actively buy high-quality agricultural by-products in Zhenba area to 120,000 employees of the Company under the “Energy China mall + special products” model.
- The Company introduced external channels to strengthen product promotion. In 2021, the Company cooperated with the National Energy Administration to open a special support area for the Company on the “Ben Life Network”, recommended the products of local enterprises in Zhenba, shortened the distance with consumers across the country, and opened up a broad sales channel.
- The Company cooperated to expand the market scale. The Company’s branch in Shaanxi has jointly invested in forming the “Hanzhong Force Group” with 10 state-owned enterprises in Shaanxi Province and central enterprises in Shaanxi to establish a “Consumption Assistance Life Experience Hall”, and promoted Zhenba County’s high-quality agricultural and sideline products in many units in Shaanxi Province.



E-commerce channels supported sales of agricultural and sideline products in Zhenba, and merchants and Energy China employees stepped up stocking

COMMUNITY INVESTMENT

2. DEVOTING TO SOCIAL PUBLIC WELFARE

The Company always actively make devotions to social public welfare to help with the disadvantaged groups, and earnestly fulfill social responsibilities. We have organized and carried out charity donation activities under the policies and requirements such as Law of the People's Republic of China on Public Welfare Donations and the Notice on Strengthening the Management of External Donations by Central Enterprises and Supplementary Notice on the Management of External Donations by Central Enterprises and other policies and requirements. In order to standardize the Company's management of external donations and effectively safeguard the interests of investors, creditors and employees, the Measures for the Administration of External Donations of China Energy Engineering Corporation Limited was revised during the Reporting Period, which revised and improved the filing process of the centralized management department, the external donation matters that need to be urgently arranged for sudden major natural disasters or other special matters. The Company makes external donations based on the principles of voluntariness, clear property rights and doing within the abilities. External donations are used to relieve social disadvantaged groups and support social welfare undertakings, mainly including relief donations, public welfare donations and other donations such as social and public welfare undertakings.

Case: Organising to support epidemic prevention and control in Xi'an

At the end of 2021, the COVID-19 epidemic ravaged Xi'an, affecting the hearts of all sectors of society. Energy China's subsidiary in Shaanxi have carefully arranged and organized volunteers to head for the community with strong support for large-scale nucleic acid testing, door-to-door testing, and distribution of living materials in the community, and contributed to the prevention and control of the epidemic in Xi'an.



Volunteers of China Gezhouba Group No.3 Engineering Co., Ltd.
(中國葛洲壩集團第三工程有限公司), a subsidiary of Energy China

Case: Supporting the reconstruction of Zhengzhou after the catastrophic flood

In July 2021, Henan Province was hit by a heavy rainstorm, resulting in severe floods and heavy casualties and property losses. Energy China actively fulfilled its social responsibilities as a central enterprise, made an emergency donation of RMB10 million to the Henan Charity Federation on July 22 to support Henan Province's fight against severe floods and post-disaster recovery and reconstruction.

COMMUNITY INVESTMENT

Case: Organizing voluntary blood donation to demonstrate the responsibility as a central enterprise

In order to ensure the blood supply for the high incidence of respiratory infections in winter and spring, as well as for the COVID-19 vaccination and influenza vaccination, Guangxi Water Conservancy and Hydropower Engineering Bureau Co., Ltd., a subsidiary of Energy China, issued a voluntary blood donation initiative to the majority of party members, cadres and workers, which received enthusiastic responses. Ten party members, cadres, and employees participated in the voluntary blood donation activity of “Guarding Together Against the Epidemic” held in March 2021, donating a total of 11,650 milliliters of blood. employees of Guangxi Water Conservancy and Hydropower Engineering Bureau Co., Ltd. who participated in the activity conveyed the responsibility of central enterprise to the society with practical actions.



Party members, cadres and workers participated in the voluntary blood donation activity of “Guarding Together Against the Epidemic”

3. FACILITATING OVERSEAS COMMUNITY DEVELOPMENT

While expanding its international business and improving its international level, the Company continues to strengthen its overseas responsibilities. On the one hand, the Company actively supported the global fight against the epidemic, conducted self-protection and vaccination propaganda for overseas employees and local community residents, and opened mental health service agencies to provide mental health counseling for Chinese and foreign employees; on the other hand, the Company provided local project staff with work and study opportunities by employing a large number of local personnel and promoting Chinese technology and standards to promote the ability of local personnel, which effectively improved the living conditions of residents around the project, and boosted local economic development.

COMMUNITY INVESTMENT

Case: Guaranteeing international production and operation and supporting overseas epidemic prevention and control

In the context of the severe overseas epidemic situation, Energy China assumed its responsibilities by taking the initiative and making effort to facilitate overseas epidemic prevention and control and international production and operation, and helped the local fight against the epidemic with practical actions, so as to overcome the difficulties together. During the Reporting Period, the number of vaccinated employees of the Company overseas was 17,700. The Company established 38 overseas medical offices, designated more than 580 Chinese and foreign medical staff, and offered more than 700,000 anti-epidemic drugs. We made every effort to promote the return work, and successfully organized 9 batches of charter flights to return and return a total of 1,867 overseas employees.

- Providing material support

The Company took the initiative to contact government departments, communities and other organizations in the country where the project is located to organize donation activities for overseas epidemic prevention and construction. In addition to donating necessary medical supplies, the Company also cooperated with peers in the construction of an overseas makeshift hospital, making positive contributions to Sino-foreign prevention and control.

- Strengthening epidemic prevention management

The Company has established an overseas epidemic prevention office, arranged for special personnel and shifts, and established a communication reporting and incident handling mechanism with national ministries and embassies in the countries where it was located, and carried out "personnel classification, site division", "grid management", "epidemic prevention and control investigation" and "standardized construction of medical offices" in relevant overseas institutions around the world.

- Promoting scientific epidemic prevention

The Company strictly complied with the epidemic prevention and control requirements of the country where it operated, strengthened the integration of cross-cultural concepts, concerned about the difficulties encountered by foreign employees and their families, and paid attention to psychological comfort and emotional counseling; actively carried out epidemic prevention knowledge training for foreign employees to publicize epidemic prevention experience, and help foreign employees become aware of the hazards of the COVID-19 epidemic and actively promote "Chinese experience and Chinese practices".

- Organizing "vaccination action"

In cooperation with the national "vaccination action", the Company has organized foreign employees to receive Chinese vaccines in many territorial countries. Many project departments have made every effort to build a protective barrier against the epidemic and protect the safety of employees.



Energy China supported "vaccine action" in Rwanda

COMMUNITY INVESTMENT

Case: Performing overseas social responsibilities and promoting development of local communities

Adhering to the principles of safe, high-quality, and high-standard construction, and following and leading the international trend of green, low-carbon, and circular development, Energy China endeavored to achieve both economic development and environmental development. Meanwhile, the Company actively participated in social responsibility activities such as facility improvement, livelihood security, community development, and cultural exchanges in various international projects.

- Help to improve the local learning environment

The Project Department of Mohmand Hydropower Station in Pakistan donated books, school bags, stationery and other school supplies to dozens of students in local schools.

- Help to improve the quality of life

The Babibalu Coal-fired Power Plant Project Department in Indonesia organized visits to local orphanages and donated living materials; hired local temporary workers, drivers, and translators to increase employment positions for residents in the project area, help relieve local employment pressure, and improve the quality of life of local residents.

- Strengthen the skills of local personnel

Local training for the Kaliti sewage treatment operation and maintenance project department in Ethiopia was carried out. Under the education, assistance and lead of Chinese engineers of the project department, 24 local owner engineers who are responsible for sewage operation and maintenance in the capital of Ethiopia successfully passed the first and second stage sewage treatment plant operation and maintenance training organized by Gezhouba Group Ethiopia Kaliti Sewage Treatment Operation and Maintenance Project Department. They would replace Chinese engineers to independently carry out the operation and management of the largest sewage treatment plant built in Ethiopia or even East Africa in the follow-up of the project.



Energy China Vietnam Yabei Project Department renovated playgrounds for three primary schools in Yabei Commune



Closing Ceremony of Kaliti Sewage Treatment Operation and Maintenance Training Course

FUTURE PROSPECTS

The year 2022 is an important year for entering a new journey towards building a modern socialist country in an all-round way and towards the second centenary goal. In the new year, the Company, under the guidance of the “Several Opinions”, will continue firmly seize the “three major economic forms”, being shared economy, digital economy, green and low-carbon economy, and the “three major development trends”, being high-quality development, integrated development, and incorporated development, comprehensively improve new infrastructure, new models and new kinetic energy, and vigorously implement the “1466” strategy. Focusing closely on the two central tasks of maintaining stable growth and strengthening scientific management, and adhering to comprehensive ideological leadership, effective implementation of strategies with a focus on value creation and hard and smart work, the Company strives to create a new landscape in the construction of high-quality development of new Energy China.

We will make every effort to optimize corporate governance, resolutely implement the three-year reform action, continuously improve the level of ESG work, and effectively integrate the concept of sustainable development into corporate development strategies, corporate operation management, corporate cultural connotations, and corporate party building, and strive to build an excellent enterprise with happy employees and that is recognized by the society, favored by investors, and satisfied by owners.

We will make every effort to promote low-carbon transformation. Under the guidance of implementing the national “dual-carbon” strategy, and as a leader and vanguard of green and low-carbon development, we will play the driving role in traditional technology integration and new technology innovation, serve green energy, and adhere to green production, develop green industries, actively respond to global climate change, and take use of the power and wisdom of Energy China to promote green and low-carbon development.

We will make every effort to promote innovation and development, with a focus on building new Energy China, firmly implement the innovation-driven development strategy to accelerate digital transformation. We will make every effort to expand the “five all” business of all-electricity, all-city, all-transportation, all-water, and all-ecological and environmental protection, and thoroughly implement coordinated development strategy, effectively implement the concept of “four major investments”, constantly shape the Company’s new development advantages, cultivate new industries, new business formats and new models, generate new kinetic energy, and promote new development.

We will make every effort to improve people’s well-being, make development achievements better benefit people’s livelihood, actively fulfill our social responsibilities, devote ourselves to social public welfare, and make greater and unique contributions in helping rural revitalization, improving people’s livelihood, and promoting common prosperity, and be a model for central enterprises.

The world today is undergoing profound changes unseen in a century. During the “14th Five-Year Plan” period, China’s economic and social development is facing a series of new situations, new trends, new goals, new problems and new tasks, with unprecedented opportunities, risks and challenges. At a new historical starting point, we will concentrate our efforts, take responsibility, and stride forward with more vigorous fighting spirit in the changes of the world, the times, and the history, and build a world-class enterprise with global competitiveness.

APPENDIX

ESG INDEX

Aspects	Contents	Disclosure location
A1 Emissions	General Disclosure	P15
	Information on:	
	(a) the policies; and	
	(b) compliance with relevant laws and regulations that have a significant impact on the issuer	
	relating to air and greenhouse gas emissions, discharges into water and land, and generation of hazardous and non-hazardous waste.	
	A1.1 The types of emissions and respective emissions data.	P17
	A1.2 Direct (Scope I) and energy indirect (Scope II) Greenhouse gas emissions in total (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	P17
A2 Use of Resources	A1.3 Total hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	P17
	A1.4 Total non-hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	P17
	A1.5 Description of emission goals formulated and steps to achieve these goals.	P16
	A1.6 Description of how hazardous and non-hazardous wastes are handled, reduction initiatives formulated and steps taken to achieve these initiatives.	P16-17
	General Disclosure	P19
	Policies on the efficient use of resources, including energy, water and other raw materials.	
A3 Environment and Natural Resources	A2.1 Direct and/or indirect energy consumption by type (e.g. electricity, gas or oil) in total (kWh in '000s) and intensity (e.g. per unit of production volume, per facility).	P19
	A2.2 Water consumption in total and intensity (e.g. per unit of production volume, per facility).	P19
	A2.3 Description of energy use efficiency initiatives formulated and steps taken to achieve these initiatives.	P16, P18
	A2.4 Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency initiatives formulated and steps taken to achieve these initiatives.	P16, P18
	A2.5 Total packaging material used for finished products (in tonnes) and, if applicable, with reference to per unit produced.	N/A
	General Disclosure	P15
	Policies on minimising the issuer's significant impact on the environment and natural resources.	
	A3.1 Description of the significant impacts of activities on the environment and natural resources and the actions taken to manage them.	P20-21

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Aspects	Contents	Disclosure location
A4 Climate Change	General Disclosure Policies on identification and mitigation of significant climate-related issues which have impacted, and those which may impact, the issuer.	P12
	A4.1 Description of the significant climate-related issues which have impacted, and those which may impact, the issuer, and the actions taken to manage them.	P12
B1 Employment	General Disclosure Information on: (1) the policies; and (2) compliance with relevant laws and regulations that have a significant impact on the issuer relating to compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, diversity, anti-discrimination, and other benefits and welfare.	P22
	B1.1 Total workforce by gender, employment type (full-time or part time), age group and geographical region	P23-24
	B1.2 Employee turnover rate by gender, age group and geographical region	Pending setting up statistics mechanism and to be disclosed in the future
B2 Health and safety	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to providing a safe working environment and protecting employees from occupational hazards.	P25
	B2.1 Number and rate of work-related fatalities in the past three years (including the reporting year).	P28
	B2.2 Lost days due to work injury.	P28
	B2.3 Description of occupational health and safety measures adopted, how they are implemented and monitored.	P25-26
B3 Development and Training	General Disclosure Policies on improving employees' knowledge and skills for discharging duties at work. Description of training activities.	P28
	B3.1 The percentage of employees trained by gender and employee category (e.g. senior management, middle management).	P29
	B3.2 The average training hours completed per employee by gender and employee category.	P29

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Aspects	Contents	Disclosure location
B4 Labour Standards	General Disclosure	P22
	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.	P22
	B4.2 Description of steps taken to eliminate irregularities when discovered.	P22
B5 Supply Chain Management	General Disclosure	P33-34
	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.	
	B5.4 Description of practices used to promote environmentally preferable products and services when selecting suppliers, and how they are implemented and monitored.	P34
B6 Product Responsibility	General Disclosure	P37
	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.	P41
	B6.3 Description of practices relating to observing and protecting intellectual property rights.	P40
	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.	P41

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Aspects	Contents	Disclosure location
B7 Anti-corruption	General Disclosure	P42
	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.	P42
	B7.2 Description of preventive measures and whistle-blowing procedures, how they are implemented and monitored.	P42
	B7.3 Description of anti-corruption training provided to directors and staff.	P42
B8 Community Investment	General Disclosure	P43-50
	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).	P43-50
	B8.2 Resources contributed (e.g. money or time) to the focus area.	P43-50



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