



华电国际电力股份有限公司

HUADIAN POWER INTERNATIONAL CORPORATION LIMITED

Stock Code: SH.600027, HK.1071

# 2022 Environmental, Social and Governance Report

HUADIAN POWER INTERNATIONAL CORPORATION LIMITED





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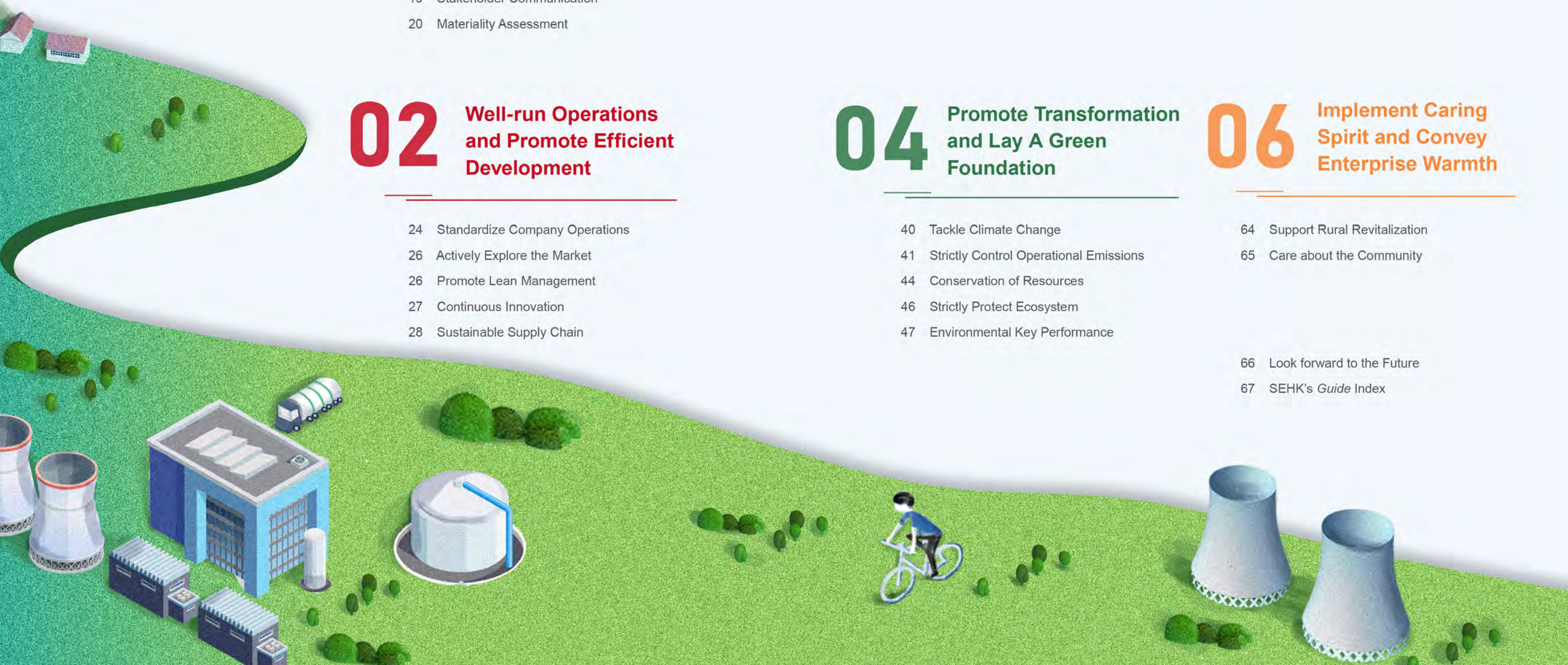
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# About the Report

This Environmental, Social and Governance (“**ESG**”) Report (the “**Report**”) is the seventh annual standalone ESG report published by Huadian Power International Corporation Limited (the “**Company**” or “**Huadian Power International**”) and its subsidiaries (collectively refer to the “**Group**”), which aims to report relevant information on the Group’s fulfillment of ESG responsibilities in 2022 and respond to the ESG issues that are of major concern to stakeholders. The Report is to be read in conjunction with the “Corporate Governance Report” section of *Huadian Power International Corporation Limited 2022 Annual Report* (“**2022 Annual Report**”), to provide a more comprehensive overview on the ESG performance of the Group.

## Reporting Scope

Unless otherwise stated, the organizational scope of the Report covers the Company and its subsidiaries. The reporting period covered in the Report is consistent with that stated in the 2022 Annual Report, which is from 1 January 2022 to 31 December 2022 (the “**Reporting Period**”). Where necessary, some of the contents goes beyond the aforesaid period so as to enhance the comparability of the Report.

## Reporting Guideline

The Report is prepared in accordance with the *Environmental, Social and Governance Reporting Guide* (the “**Guide**”) under Appendix 27 to the *Rules Governing the Listing of Securities of Stock Exchange of Hong Kong Limited* issued by the Stock Exchange of Hong Kong Limited (the “**SEHK**”), and “Chapter 8 Social Responsibility” in the *No. 1 Self-Regulatory Guidelines for Listed Companies of Shanghai Stock Exchange - Standardized Operation* issued by the Shanghai Stock Exchange. It also takes a reference to the ESG requirements in the *Work Plan for Improving the Quality of Listed Companies Owned by Centrally Administered State-owned Enterprises* issued by State-owned Assets Supervision and Administration Commission of the State Council (“**SASAC**”), the *Electric Utilities & Power Generators Sustainability Accounting Standard* issued by the Sustainability Accounting Standards Board (SASB), the *Recommendations of the Task Force on Climate-related Financial Disclosures* issued by the Task Force on Climate-related Financial Disclosures (TCFD) and the *GRI Sustainability Reporting Standards* issued by the Global Reporting Initiative (GRI).

The Report complies with the mandatory disclosure requirements and “comply or explain” provisions set out in the *Guide* and is prepared based on the four reporting principles of “materiality”, “quantitative”, “balance” and “consistency”. During the preparation of the Report, the Group applied the reporting principles as follows:

- **Materiality** Based on the results of stakeholder communication and using materiality assessment, the Group's materiality issues during the Reporting Period were identified, and then this Report is prepared around materiality issues. Please refer to the content in “Materiality Assessment” in the Report for details.
- **Quantitative** Disclose the standards, methodologies and applicable assumptions used for quantitative information where appropriate.

- **Balance** The Report provides an unbiased picture of the issuer's performance. The Report avoids selections, omissions, or presentation formats that may inappropriately influence a decision or judgment by the Report reader.
- **Consistency** Where feasible and unless otherwise stated, the disclosure and statistical methods is consistent with previous reports to ensure meaningful comparisons.

## Information Description

The information contained in the Report is sourced from the Group's formal documents and statistical reports. Unless otherwise specified, the currency mentioned is accounted by RMB. The board of directors of the Company (the “**Board**”), the Supervisory Committee and the directors, supervisors and senior management of the Company warrant that the Report does not contain any misrepresentations, misleading statements or material omissions, and are jointly and severally liable for the authenticity, accuracy and completeness of the information contained in the Report.

## Release Form

The Report is published in both Chinese and English. In case of any discrepancy, the Chinese version shall prevail. You are welcome to access the Chinese and English version of the Report in a PDF format through the Company's website (www.hdpi.com.cn), website of the Shanghai Stock Exchange, and SEHK's HKEx news website.

## Feedback

Your feedback is immensely important for the Group to continually enhance its environmental and social performance. If you have any questions or suggestions regarding the Report, please contact the Company via the following ways:

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## Message from the Management

2022 is an important year for the Group to fully implement the “14th Five-Year Plan”, and it is also a key year for the Group to accelerate the construction of a world-class energy enterprise. Since its establishment, the Group has gradually grown from a regional enterprise with single power-generation approach under the planned economy system to a national listed power generation company. In 2022, Huadian Power International has strengthened its strategic guidance wholly, adhered to innovation-driven, and embarked on a new path of high-quality development of traditional energy listed companies, played a good fundamental and auxiliary functions in the new power system, and accelerated the low-carbon transformation and upgrading of the company's industrial structure.

**Deepen the Governance System by Practicing Ethics and Integrity.** In 2022, the Group continued to improve the corporate governance mechanism with solid authority, transparent rights and responsibilities, coordinated operation, effective monitoring and supervision, and improve internal responsibility to “promote standard management”, effectively transforming the advantages of modern enterprise system with Chinese characteristics into governance effectiveness. At the same time, the Group has continuously improved its social responsibility management system and training and assessment, strengthened the main responsibility in social responsibility management, and actively promoted ESG strategic planning, rule formulation, target setting and other related work in accordance with regulatory requirements, stakeholders' concerns and the actual development of the enterprise.

**Well-run Operations and Promote Efficient Development.** With the proposal and implementation of the “3060” carbon peaking and carbon neutrality goals (“dual carbon”), the energy and power industry has been undergoing profound changes. The new era of low carbon has accelerated the transformation of energy structure, giving rise to new industries, new formats, and new models. The Group accurately understands its development position, takes quality and efficiency, clean and low carbon as the orientation, accelerates the optimization and transformation of the stock of coal power, and promotes the continuous improvement of energy efficiency. Meanwhile, the Group deepens the ecological and environmental protection management, and actively carries out “Research and Application on Carbon Asset Visualization Analysis and Operation Performance Evaluation System” project, so as to reduce carbon and increase efficiency in a two-pronged way, and to help achieve the goal of “carbon neutrality”. In 2022, the Group successfully generated 220.9 million megawatt-hours (“MWh”) of electricity, representing a year-on-year increase of 0.54% and also completed 167 million gigajoules (“GJ”) of heating supply, representing a year-on-year increase of 16.08%.



<p>In 2022, the Group successfully generated</p> <p><b>220.9</b></p> <p>million megawatt-hours (“MWh”) of electricity</p>	<p>representing a year-on-year increase of</p> <p><b>0.54%</b></p>	<p>completed</p> <p><b>167</b> million</p> <p>gigajoules (“GJ”) of heating supply</p>	<p>representing a year-on-year increase of</p> <p><b>16.08%</b></p>
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**Provide Stable Power Supply and Ensure Safe Operations.** Building an enterprise with intrinsic safety is the essential guarantee for the Group to provide stable energy to the society and is also the fundamental requirement for the Group to adhere to the people-oriented principle and achieve comprehensive, coordinated and sustainable development. In 2022, the Group further promoted internal control management, explored the establishment of a new model of internal control and compliance inspection that combines offline and online channels, and on-site and remote inspection, strengthened safety and environmental protection supervision, maintained a safe, stable and good trend, and realized full-process, all-round and real-time inspection; in addition, strengthened the control of key safety hazards, put forward management advice and continued to follow up the rectification implementation, so as to strongly promote the management of safety hazards.

**Promote Transformation and Lay a Green Foundation.** “Leading indicators, advanced environmental protection” is the Group's diligent pursuit. In 2022, the Group comprehensively increased its environmental protection supervision and inspection, and ensured the discharge of pollutants to comply with the law and discharge standards; The Group has adhered to reform and innovation as the fundamental driving force, accelerated the transformation of new business forms and models, increased scientific and technological innovation, and empowered the Group's industrial upgrading and efficiency transformation; The Group has also actively strengthened the supervision of its major energy consumption indicators and the implementation of reduction measures of energy consumption, continuously optimized the energy efficiency level of generator sets, and reduced coal consumption for electricity supply by 0.44 g/kWh year-on-year.

**Promote Cohesion to Build An Excellent Team.** A strong cohesive team provides important support for the Group's sustainable development. The Group adheres to human resources philosophy of “recognizing talents through performance, selecting talent through competition, and rewarding those according to their achievements”, continuously improves human resources management rules and regulations, protects the rights and interests of employees, and continuously strengthens talent cultivation to promote the mutual sustainable development of employees and the enterprise. At the same time, the Group also strives to create a dynamic and comfortable working environment for its employees and works together for the future to build a first-class team and a first-class power generation enterprise.

**Implement Caring Spirit and Convey Enterprise Warmth.** As an energy enterprise that is the “pillar” of energy supply, the Group takes the initiative to do a solid job in safe production and make every effort to ensure stable energy supply. In addition, the group also dedicated into building a harmonious relationship with the community, promote the positive energy of the enterprise and pass on the “Huadian warmth”. The Group always keeps in mind its corporate social responsibility, actively understands the needs and interests of the community, practices the responsibility concept of “caring everywhere” and gives back to the society with gratitude through voluntary services, charity donations and targeted assistance to help rural revitalization.





# About Huadian Power International

Responding to a materiality issue: Business Performance

## Company Profile

The Company is a power generation enterprise incorporated in Jinan, Shandong Province, the People's Republic of China (the "PRC"). After years of development, the Group has become one of the largest comprehensive energy companies in the PRC. The Group is primarily engaged in the construction, operation and management of power plants, including large-scale efficient coal-fired, gas-fired and hydro-electric power generating units. Over the years, the Group has always adhered to the scientific outlook on development, highlighted value-based thinking idea, and taken company strategies as the guide to speed up structural adjustment, and made persistent efforts in seizing development opportunities, improving efficiency, reinforcing management and leading working teams. With the building up of its overall strength, the Group's power generating assets are located in 12 provinces, autonomous regions and municipalities across the PRC at the prime location, mainly in the electricity and heat load centers or regions with abundant coal resources.



### Corporate operation believes of the Group

Activating resources, increasing their values



### Vision of the Group

Energy giant, industry vanguard, international first class

## Business Overview

For a long time, in line with the direction of clean, low-carbon, safe and efficient, the Group has actively promoted comprehensive energy service projects, paid close attention to the development of emerging technologies, actively studied and explored emerging industries such as energy storage and geothermal energy, strived to promote technological application innovation and resource management innovation, improved resource integration and utilization efficiency, expanded space and dimensions of development, and enhanced development performance.

As of the end of the Reporting Period,

the Group had a total of **44** controlled power plants

**8,589** MW attributable to gas-fired generating unit

which have commenced operations involving a total of **54,734** MW controlled installed capacity

**2,459** MW attributable to hydropower generating units

with a total of **43,700** MW attributable to coal-fired generating units

gas-fired power generation, hydropower and other clean energy generation account for about **20.2%** of total electricity generation





## 28-Year Development

### 1994

On 30 June, Shandong International Power Development Co., Ltd., the precursor of the Group, was registered and officially founded.

### 1999

On 30 June, the Company issued H-stock and got listed on the SEHK.

### 2002

On 21 November, the Company bought 20% of the shares of Ningxia Zhongning Power Generation Company, which marked its official entry into the market of the Ningxia Hui Autonomous Region and its first step to develop into a nationwide power generation company from a regional one.

### 2003

On 1 April, China Huadian became the controlling shareholder of the Company.

On 9 May, the Company acquired 80% equity interest in Sichuan Guang'an Power Limited Liability Company, officially entering into Sichuan market.

On 28 August, Huadian Xinxiang Power Generation Company Limited was registered and founded. Two 660 MW supercritical coal-fired generating units were constructed in the first phase. The development area of the Company was expanded to Henan Province.

On 1 November, Shandong International Power Development Co., Ltd. was renamed as Huadian Power International Corporation Limited.

On 18 November, the construction of two 300 MW power generating units in Chizhou City, Anhui Province, with the relative controlling shares officially began to be constructed, marking the Company's entry into Anhui's market.

### 2004

On 28 December, Huadian Qingdao Heating Company Limited, the first heat company of the Group, was officially registered and found.

### 2005

On 3 February, the Group's A share, the first stock issued to the public for price inquiry in China, was officially listed on the Shanghai Stock Exchange.

### 2006

On 4 December, the first batch of domestic ultra-supercritical units, each with a capacity of 1,000 MW was put into production in Huadian Zouxian Power Limited Company, and became the national "863" science and technology key project, the imported and domesticated support construction project, and the 2005 national annual key construction project. These units set a new record among the national same-type units with regards to the security status, construction speed, engineering quality, debug time, commissioning index, and energy conservation and environmental protection. The total controlled installed capacity of the Group amounted to 10,000 MW.

### 2007

The "Tens of Millions of Kilowatt" project was carried out. The installed capacity of 6,095 MW during the year was realized and the Group's total installed capacity amounted to 20,000 MW.

### 2012

In September, the first generating unit with capacity of 415 MW for Phase 2 of the gas turbine project in Hangzhou Huadian Banshan Power Company was handed over for production. It was the Group's first independently constructed gas turbine project.

### 2010

On 21 May, the Company acquired the stock rights of Guangdong Shaoguan Pingshi Power Company (Factory B), marking its expansion to Guangdong.

### 2008

The Company acquired 82% of the shares of Hebei Shijiazhuang Thermal Power Limited Company formerly possessed by China Huadian, 100% of the stock rights of Hebei Huadian Hybrid Storage Hydropower Limited Company, 64% of the stock rights of Hangzhou Huadian Banshan Power Limited Company, and 49% of the stock rights of Sichuan Huadian Zangunao Hydropower Development Limited Company, marking the Company's expansion to Hebei and Zhejiang and new breakthroughs in hydropower project and gas turbine project.

### 2013

On 16 April 16, the Group held the opening ceremony of the technical service center, marking its expansion into the field of power technical service and consulting.

On 10 September, the distributed energy project of Shenzhen Huadian Pingshan was approved, the first distributed energy project approved in Shenzhen, marking the Company's new breakthrough from "zero" in Shenzhen's energy market.

### 2014

In September and November, two gas-steam combined cycle power generator units of Tianjin Huadian Fuyuan Thermal Power Company Limited, each with a capacity of 200 MW, were officially put into commercial operation, the Group's first power project operated in Tianjin.

### 2015

In July, the Company successfully acquired 82.56% of the stock rights of Huadian Hubei Power Company Limited formerly possessed by China Huadian, Leading the Company's controlled installed capacity to increase by 5,120 MW to 400,000 MW and marking the Company's expansion to Hubei.

### 2011

Unit 3 and 4 of Sichuan Huadian Luding Hydropower Company Limited, the first independently constructed hydropower project, smoothly went through its first 72-hour operation.

The installed capacity of 1,949.5 MW was put into production, indicating that the Company's controlled installed capacity amounted to 30,000 MW.







## 2016

On 24 November, Huadian Guangdong Energy Marketing Limited Company, the first power marketing company solely invested by the Group, was officially registered and founded, marking the Group's business expansion to the power marketing side.

The Group's Chongqing Fengjie Power Plant put two supercritical condensing coal-fired generating units with a capacity of 600 MW into production for Phase 1, the Group's first supercritical "W-type" flame furnace project in progress that can meet ultralow emission standards, marking the Group's breakthrough from the "zero" in Chongqing.

## 2017

The controlled installed capacity of the Group generated by clean energy exceeded 10,000 MW, accounting for a record high of 20.53%.

## 2018

In December, the #3 power generating units of Shenzhen Company and the #1 and #2 power generating units in Guangdong Province that the Group invested was put into commercial operation in succession, making the Group's breakthrough of gas-fired power generation projects in Guangdong Province.

## 2019

The total installed capacity of the Group exceeded 50,000 MW, and the proportion of controlled installed capacity of clean energy increased to 24%

## 2020

As of the end of 2020, the controlled installed capacity of the Group reached 57,699.3 MW, of which 14,539.3 MW was generated by the clean energy, and the proportion rose from 23.57% at the end of 2019 to 25.20%.

In December, the Group's Hebei Huadian Shijiazhuang Thermal Power Company Limited gas turbine #1 unit was put into operation. The unit uses clean energy and natural gas as fuel, and its installed capacity of the unit is 2×453.6 MW, with a maximum heating capacity of 627 MW. It undertakes the industrial steam load and civil heating takes in the central urban area of Shijiazhuang City.

## 2021

The Group's operating revenue reached RMB 104.347 billion, exceeding 100 billion for the first time.

The Group added 1,360 MW installed capacity which has been put into operation, 2,520 MW installed capacity which has been merged and acquired, bringing the controlled installed capacity to a total of 53,356 MW. The newly installed units which have been put into operation includes: two 9F gas turbines in Yingde, Guangdong Province, two 9E gas turbines in Fancheng, Hubei Province, and two hydropower units in Bowa Hydropower Station on Shuiluo River, Sichuan Province.

## 2022

The coal power project of Hunan Huadian Pingjiang Company of the Group successfully completed 168 hours of full-load trial operation and was officially put into commercial operation with an installed capacity of 2×1 000 MW, and all economic indicators reached the domestic leading level during the trial operation.

The Group has been awarded Grade A evaluation for information disclosure work of the Shanghai Stock Exchange for eight years consecutively.



# 01



## Deepen the Governance System by Practicing Ethics and Integrity

The Group has always pursued the core values of "conscientiousness, integrity, innovation and harmony", and constantly deepened and improved the level of corporate management. Through continuous exploration and practice, the Company has formed a standardized management structure and an effective internal supervision system to ensure the efficiency and effectiveness of corporate governance.

Responding to a material issue: Development Strategies

- 01 Corporate Governance
- 02 Risk Management and Control
- 03 Social Responsibility Management
- 04 Stakeholder Communication
- 05 Materiality Assessment







## Corporate Governance

The Company has always attached great importance to the corporate governance and constantly promoted management innovation. By acting in strict compliance with the *Company Law of the PRC*, the *Securities Law of the PRC*, the *Rules Governing the Listing of Stocks on Shanghai Stock Exchange*, the *Rules Governing the Listing of Securities of SEHK* and relevant provisions promulgated by domestic and overseas securities regulatory institutions, the Company continues to improve its governance structure and enhance its governance level, and strives to achieve a coordinated development between the growth of the Company and the interests of shareholders.

After years of exploration and practice, the Company has established a relatively mature corporate governance structure and corresponding organizational regulations, which specifies the responsibility and rights of the general meetings of shareholders, the Board and the Supervisory Committee. To ensure good corporate governance, the Board has established four specified working bodies, including the Audit Committee, the Remuneration and Appraisal Committee, the Nomination Committee and the Strategic Committee, and formulated their terms of reference in accordance with relevant regulations. During the Reporting Period, the general meetings of shareholders, the Board, the Supervisory Committee and other decision-making and supervisory bodies of the Company operated in a regulated and effective manner, and all the specialized working bodies performed their respective duties well.

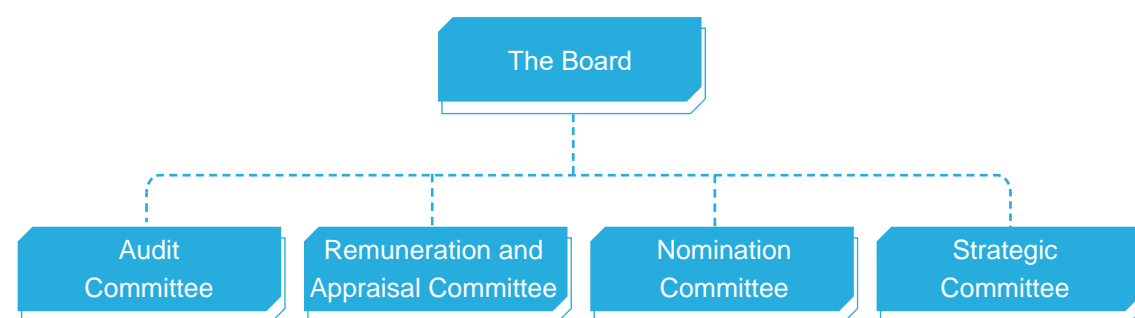


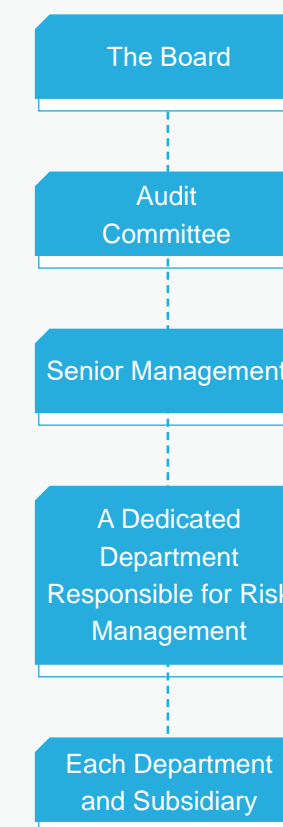
Chart of the Board's Working Bodies

## Risk Management and Control

The Company has formulated a relatively sound risk management and internal control system based on the Group's business scope and operational status. The Board is responsible for the ongoing supervision of the Company's risk management and internal control system and for reviewing and confirming the effectiveness of the system for Group's risk management and internal control.

The Company also has a dedicated department to regularly review the adequacy and effectiveness of the Group's risk management and internal control system, and the Audit Committee reviews the department's work reports and recommendations on the effectiveness of the primary control system. In the process of risk assessment, as the first responsible layer of risk identification, the business departments and main subsidiaries that face risks need to identify the major risks. After considering the countermeasures against major risks, they will make a secondary assessment of the remaining risks and report to the Company's management and decision-making level.

The Group has incorporated ESG risks into its risk management and internal control systems. During the Reporting Period, the Group carried out risk identification and assessment for 2022, formed a risk management list, and identified major operational risks, including the social responsibility risk. In order to effectively control the social responsibility risk, the Group continues to improve the system and operating mechanism for fulfilling social responsibility, including establishing a sustainable corporate development strategy, implementing the fulfillment of social responsibility into all aspects of production and operation, and clarifying the responsible management department for social responsibility, and paying great attention to the monitoring and implementation of relevant work.



Structure of Risk Management and Control

## Social Responsibility Management

While practicing corporate social responsibility, the Group has gradually developed a set of promotion mechanisms for social responsibility management with clear responsibilities and linkage at all levels, forming a hierarchical management system with the Board, the Strategic Committee, senior management, leading departments, followed by departments and subsidiaries as the structure, so as to give full play to the management functions of corporate social responsibility at all levels and further improve the systematization and specialization level of social responsibility management.

In terms of the social responsibility management system, the Board supervises and manages the Group's ESG-related issues through its Strategic Committee, assumes the overall responsibility for the Group's ESG strategy and reporting, and has the overall responsibility for evaluating, prioritizing and managing material ESG-related issues (including risks to the Group's business). The Strategy Committee of the Company is responsible for the Group's ESG strategic planning, policy formulation and target setting, and reports and reviews the progress to the Board in a timely manner. The senior management of the Company is responsible for following up the implementation progress of the Group's ESG strategic plan, policies and targets, reviewing the material ESG issues of the Group at the same time, and reporting to the Strategy Committee in a timely manner to actively promote the deep integration of ESG and corporate operation.



In the future, the Group will continue to unswervingly fulfill its corporate social responsibility and simultaneously, continue to review and improve the promotion mechanism of social responsibility management based on its own operation status as well as the relevant requirements of the SEHK and the Shanghai Stock Exchange for ESG management, strengthen the management responsibilities of the Board and the Strategy Committee of the Company on ESG-related matters, and further promote the implementation of the concept of responsibility.



**Focus** | Won the "Enterprise of the Year Award" of the 17th People's Corporate Social Responsibility Award

On December 24, 2022, the 2022 People's Corporate Social Responsibility Summit Forum and the 17th People's Corporate Social Responsibility Award Ceremony hosted by People's Daily and People's Daily Online were held. Huadian Power International won the "Enterprise of the Year Award" award for its outstanding ESG performance. The People's Corporate Social Responsibility Award is the earliest and most influential corporate social responsibility award in China's Internet media. This award demonstrates the society's high recognition of Huadian Power International's performance in ESG strategy and social welfare.

**Focus** | Huadian Power International's article on ESG practice and work was selected as *ESG Excellent Practice Cases of Listed Companies*

In September 2022, Huadian Power International's article on ESG practice work "Practicing ESG Management Concepts and Leading the Development Direction of the Industry" was included as an excellent enterprise case of public utilities in the *ESG Excellent Practice Cases of Listed Companies*, which was compiled by the China Association of Listed Companies. The book brings together 146 excellent cases from 28 industries, fully demonstrating the experience and practices of representative listed companies in various industries in ESG management, practice, information disclosure and other fields.

**Focus** | Won the "Best Listed Company" award of China Securities Golden Bauhinia Award

On 20 December, 2022, the 12th Hong Kong International Finance Forum and China Securities "Golden Bauhinia Award" Ceremony was held and co-hosted by Ta Kung Wen Wei Media Center, Beijing Association of Listed Companies, Hong Kong Chinese Enterprises Association, Chinese Financial Association of Hong Kong, Chinese Securities Association of Hong Kong and The Hong Kong Chartered Governance Institute. Huadian Power International won the "Best Listed Company" award for four consecutive years since 2019, which is sufficient to prove the capital market's recognition of Huadian Power International in terms of corporate governance and social value contribution.

## Stakeholder Communication

The Group always seeks to establish mutual, transparent and regular communication and contact with stakeholders through diversified channels. The Group identifies the main stakeholder categories by taking into account both the "degree of influence by the enterprise" and the "degree of influence on the enterprise" and understands their expectations and demands for the Group's sustainable development through multiple forms so that the Group can review and revise its work plan as appropriate and respond with practical actions. By virtue of the benign communication mechanism of "identification - communication - evaluation - response - report", the Group's responsible communication during the Reporting Period was as follows:

Stakeholders	Expectations	Communication Methods	Communication Frequency	Actions of the Group
 <b>Government and regulatory authorities</b>	<ul style="list-style-type: none"> <li>Discipline</li> <li>Compliant operations</li> <li>Compliant tax payments</li> <li>Safe energy supply</li> <li>Optimizing structure</li> <li>Energy saving and emission reduction</li> <li>Ecological protection</li> </ul>	<ul style="list-style-type: none"> <li>Stipulate policies</li> <li>Work reporting</li> <li>Information reports</li> <li>High-level meetings</li> </ul>	<ul style="list-style-type: none"> <li>Regular</li> <li>Irregular</li> </ul>	<ul style="list-style-type: none"> <li>Strictly comply with national laws and regulations;</li> <li>Timely advocacy and implementation of laws and regulations;</li> <li>Proactively cooperate with the regulatory department;</li> <li>Guarantee electricity and heating supply;</li> <li>Proactively respond to national strategy, improve self-discipline of ecological and environmental protection</li> </ul>
 <b>Shareholders</b>	<ul style="list-style-type: none"> <li>Sales revenue</li> <li>Company profit</li> <li>Corporate governance</li> <li>Regular communication</li> </ul>	<ul style="list-style-type: none"> <li>Shareholders' meetings</li> <li>Company announcements</li> <li>Regular reports</li> <li>Roadshows</li> </ul>	<ul style="list-style-type: none"> <li>Annual</li> <li>Seasonal</li> <li>Irregular</li> </ul>	<ul style="list-style-type: none"> <li>Improve economic performance;</li> <li>Improve quality and efficiency, elevate effectiveness;</li> <li>Continuously improve risk management and internal control systems;</li> <li>Strengthen information disclosure and improve information transparency;</li> <li>Communicate on a regular basis and hold communication events</li> </ul>
 <b>Employees</b>	<ul style="list-style-type: none"> <li>Employees' rights and benefits</li> <li>Occupational Health</li> <li>Educational Training</li> <li>Colorful life</li> </ul>	<ul style="list-style-type: none"> <li>Meetings</li> <li>Communication with employees</li> <li>Labor Contract</li> <li>Employee Activities</li> </ul>	<ul style="list-style-type: none"> <li>Regular</li> <li>Irregular</li> </ul>	<ul style="list-style-type: none"> <li>Improve human resource management system and protect employees' rights and benefits;</li> <li>Ensure intrinsic safety work, implement employee occupational health and safety work;</li> <li>Improve talent training mechanism and the knowledge and technical level of employees</li> </ul>
 <b>Customers</b>	<ul style="list-style-type: none"> <li>Stable supply</li> <li>Customer service</li> <li>Quality and safety management</li> </ul>	<ul style="list-style-type: none"> <li>Contracts and agreements</li> <li>Customer services</li> <li>Company Website</li> <li>Communication meetings</li> </ul>	<ul style="list-style-type: none"> <li>Annual</li> <li>Seasonal</li> <li>Irregular</li> </ul>	<ul style="list-style-type: none"> <li>Improve quality and efficiency and ensure the stable and safe supply of electricity and heating;</li> <li>Provide sound customer service on the sale of electricity and heating;</li> <li>Improve operation management system; Promote scientific and research innovation to increase production efficiency</li> </ul>
 <b>Suppliers and other partners</b>	<ul style="list-style-type: none"> <li>Fair and just</li> <li>Win-win cooperation</li> </ul>	<ul style="list-style-type: none"> <li>Contracts and agreements</li> <li>Products services</li> </ul>	<ul style="list-style-type: none"> <li>Annual</li> <li>Irregular</li> </ul>	<ul style="list-style-type: none"> <li>Ensure fair and transparent bidding and procurement processes</li> <li>Adhere to the fulfillment of contracts and agreements</li> </ul>
 <b>Community</b>	<ul style="list-style-type: none"> <li>Stable energy supply</li> <li>Community development</li> <li>Rural revitalization</li> <li>Environmental protection</li> </ul>	<ul style="list-style-type: none"> <li>Visit communities</li> <li>Assistance work</li> <li>Charitable donations</li> <li>Environmental protection activities</li> <li>Public open day activities</li> </ul>	<ul style="list-style-type: none"> <li>Regular</li> <li>Irregular</li> </ul>	<ul style="list-style-type: none"> <li>Ensure the stable supply of energy;</li> <li>Engage in harmonious community development;</li> <li>Proactively organize volunteering activities;</li> <li>Implement environmental protection measures;</li> <li>Organize public open day activities, and strengthen community awareness on the operation of power plants</li> </ul>



# Materiality Assessment

Different stakeholders may have different priorities for the Group's sustainable development. During the Reporting Period, in order to further identify and respond to the materiality issues of concern to stakeholders in a targeted manner and demonstrate the Group's corresponding performance, the Group conducts materiality assessment in accordance with the principle of "materiality".

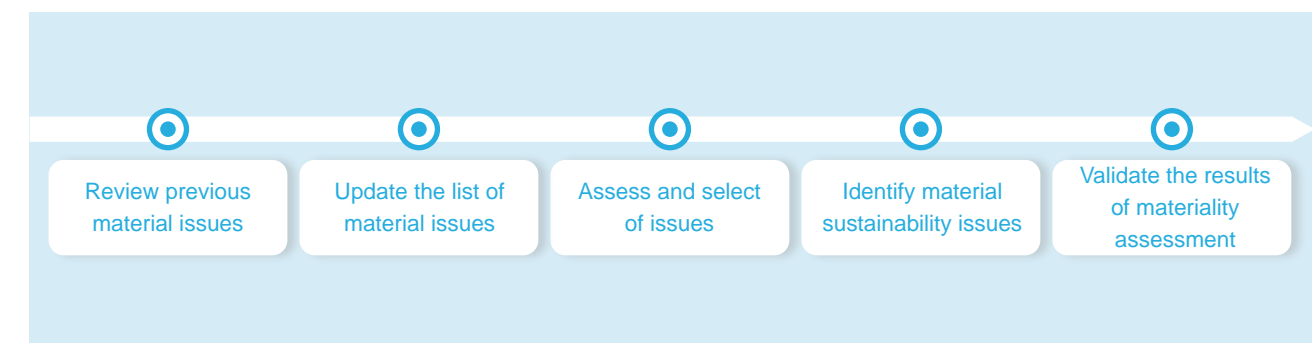
In preparation for the materiality assessment, the Group reviewed the material issues in previous years and further established a list of potential material issues within the Reporting Period based on the disclosure requirements set out in the *Guide* under Appendix 27 to the *Rules Governing the Listing of Securities of Stock Exchange of Hong Kong Limited* issued by the SEHK and simultaneously, with reference to the following guidelines:

- 01 The *Electric Utilities & Power Generators Sustainability Accounting Standards* issued by the Sustainability Accounting Standards Board (SASB);
- 02 The *Recommendations of the Task Force on Climate-related Financial Disclosures* issued by the Task Force on Climate-related Financial Disclosures (TCFD);
- 03 The main concerns of public utilities in the MSCI's ESG ratings;
- 04 The *GRI Sustainability Reporting Standards* issued by the Global Reporting Initiative (GRI);
- 05 Those issues of concern to peer enterprises.

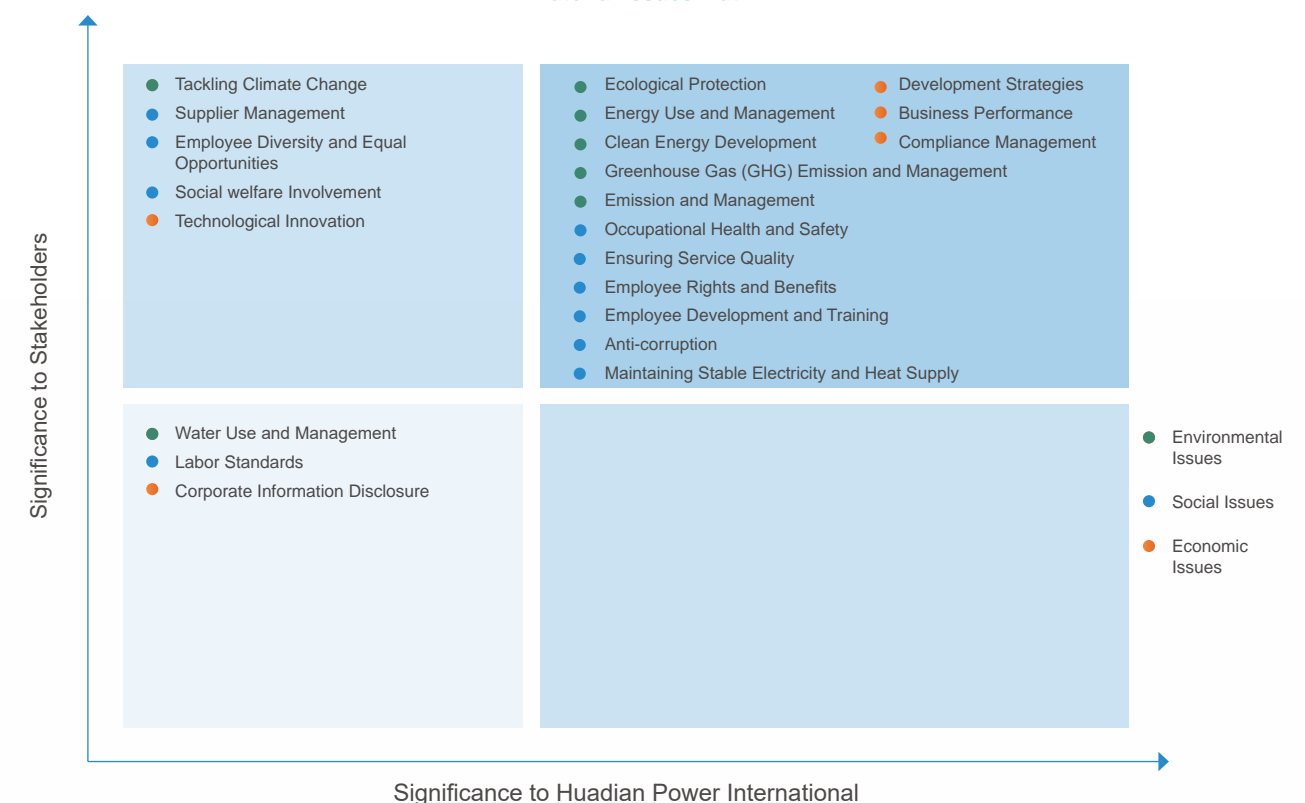
In the materiality assessment stage, the Group's Leading Departments for ESG-related work reviewed and updated the material sustainability issues during the Reporting Period by collating and assessing stakeholders' expectations, and fully considering the Group's business characteristics and development strategy, so as to obtain materiality analysis results. Not only the impact of the issues on the Group and stakeholders but also their economic, environmental and social impacts were taken into consideration during the analysis process.

In the end, 14 issues were identified as material issues (including 5 environmental issues, 6 social issues and 3 economic issues). These issues have been approved by the Board together with this Report and will be the focus of future ESG work.

## Process of Materiality Assessment



## Material Issues Matrix



Low Materiality

Moderate Materiality

High Materiality





# 02



## Well-run Operations and Promote Efficient Development

The Group adheres to standardize operations and legal corporate governance as a foundation, makes effort to achieve a shift from scale expansion to efficiency improvement, accelerating the high-quality development. At the same time, the Group actively responds to market changes, continues to run operations well, deepens reform and innovation, optimizes production indicators, works with suppliers to do a good job in supply chain management, and strives to build a comprehensive energy enterprise with strong competitiveness together.

Responding to material issues: Anti-corruption, Compliance Management, Clean Energy Development

- 01 Standardize Company Operations
- 02 Actively Explore the Market
- 03 Promote Lean Management
- 04 Continuous Innovation
- 05 Sustainable Supply Chain





# | Standardize Company Operations

As one of the centrally administered state-owned enterprises (“SOE”) who plays important roles in implementing the strategy of law-based governance of the country, the Group strives to be exemplary, and strictly abides by and implements national laws and regulations, and makes efforts to become the practitioner, promoter and leader of socialist economy under the rule of law. To this end, the Group keeps abreast of relevant policies and requirements on governing enterprises according to law and simultaneously, continues to strengthen construction of its legal compliance system, strengthens the effectiveness and legitimacy of the system, and eliminates the risks related to system compliance.

The Group strictly abides by applicable laws and regulations on preventing bribery, extortion, fraud, and money laundering, including but not limited to the *Criminal Law of the PRC*, the *Regulations of the PRC for Punishment of Corruption* and relevant regulations of the SASAC. Meanwhile, in order to further endeavor to the construction of conduct of the Communist Party of China ( “CPC”) , uphold integrity and combat corruption, the Group has formulated and constantly improved a number of internal policies, such as the *Guidelines for the Integrity Conversation Process* (2022 Version), the *Measures for the Implementation of the Responsibility System for Building the Conduct of the CPC and Upholding Integrity*, the *Working Rules of the Commission for Discipline Inspection Commission (Trial)*, the *List of Responsibilities for Building the Conduct of the CPC, Upholding Integrity and Anti-Corruption in Functional Departments and Offices*, etc.

The Group has established a sound risk management and internal control system. The functional departments and affiliated entities of the Company continuously conduct risk assessment and monitoring for their legal risks, anti-corruption risks, and other risks. The Group also has a smooth feedback channel, constantly strengthens the investigation and reporting of cases reported through letters and visits, and promptly investigates and deals with violations of discipline. Meanwhile, the Group has established secure whistleblowing channels and shall ensure the confidentiality of information after receiving reports from relevant personnel.

During the Reporting Period, the Group was

**not** involved in any corruption-related legal cases.



## Well-established Whistleblowing Process:




During the Reporting Period, the Company's cadres and employees held warning education and anti-corruption education for

a total of

**28** times by the learning events organized for the Party Committee and the central group of the discipline inspection committee, holding the party construction theme day, watching warning education film, organizing "discipline lecture" and other forms

a total of

**1,317** person-time in the above activities



## Focus The Headquarter of Huadian Power International Held Integrity Education Activities

On August 30, 2022, the headquarter organized a clean government education activity in the Clean Government Cultural Park in Tongzhou District, Beijing, to learn the history of clean government and further build moral defense for cadres and employees to against corruption. During the event, all employees visited the relevant integrity furnishings in the park, learned the integrity culture, and increased the interaction through activities by integrated integrity education into them, which achieved good results. In the future, the headquarter also plans to hold symposiums, exhibitions and other activities to continue to create an atmosphere of integrity and provide a strong guarantee for the creation of a first-class listed energy company with international reputation.



The Integrity Education Activities of the Headquarter of Huadian Power International

## Focus Huadian Tengzhou Xinyuan Thermal Power Company Limited Normalized the Integrity Education of Cadres and Employee

Huadian Tengzhou Xinyuan Thermal Power Company Limited insists on putting discipline and rules first, through publicity, reminders and warnings, standardizes the integrity education of cadres and employees, and promotes the dissemination of integrity culture by organizing various integrity theme activities. Huadian Tengzhou Xinyuan Thermal Power Company Limited held a work conference on Party construction, clean government and anti-corruption, and signed the *Letter of Responsibility for the Party Construction and Clean Government*; carried out "One Theme Every Month" integrity education and watched warning educational films; organized integrity warning visits, integrity lectures and other activities; inspected the integrity risk points, and let employees sign the "Integrity and Self-discipline Pledge" and "Family Integrity Pledge".



Integrity Education Activities for Cadres and Employees of Tengzhou Xinyuan Thermal Power Company Limited



## | Actively Explore the Market

The energy and power industries are undergoing profound changes. The proposal and implementation of the “3060” dual carbon goals have accelerated the energy structure transformation and spawned new industries, new business forms, and new models.

In terms of the power market, China has accelerated the construction of a new type of power system with renewable energy as the mainstay to pursuit the dual carbon goal. Based on China's actual national conditions such as energy resource endowment and economic and social development, the Group will give full play to the important role of coal-fired power generating units as basic guarantee and system regulation, and actively integrate into and serve the construction of new power market.

In terms of the coal market, the Group will closely follow national policies, strengthen coal market analysis, actively promote the signing of medium- and long-term contracts and strengthen contract performance and fulfillment, continuously optimize procurement and inventory strategies, and ensure the safe and stable supply of thermal coal.

In terms of environmental protection supervision, the state has successively issued a series of policies and regulations on environmental protection governance, which put forward higher requirements for enterprises' environmental information disclosure, ecological environment monitoring, energy conservation and emission reduction. The Group will firmly grasp the general requirements of achieving synergies in pollution reduction and carbon reduction, earnestly fulfill the main responsibility of environmental protection, comprehensively ensure pollution prevention and control and emission up to standards, strengthen the supervision and benchmarking analysis of major energy consumption indicators, and promote the continuous improvement of energy consumption indicators.

Faced with risks from the power market, the coal market and carbon emissions, the Group has always taken the guiding ideology of "insisting on making the main business stronger and better, insisting on differentiated development, and insisting on improving relative competitiveness", and actively adopted the following strategies and measures to strive for a leading position in the industry.

- Strengthen the analysis and policy research of the power and coal market to advise the Group on high-quality development;
- Continue to do a good job in energy saving and consumption reduction and optimize unit's performance indicators;
- Continue to do a good job in power generation and economic operations;
- Strengthen the management of procurement strategies and inventory strategies, optimize the coal intake structure, and tap room for price reductions;
- Accelerate strategic transformation, vigorously expand domestic hydropower, high-quality gas power, and high-efficiency coal power in line with national policies;
- Conduct strict review over the approval and initiation of technological transformation projects, focus on ensuring the implementation of safety and environmental protection, heating expansion, energy conservation and consumption reduction projects, and strive to improve the quality of the Group's assets, increase its market competitiveness and benefit contribution.

## | Promote Lean Management

With the goal of building a comprehensive energy enterprise with strong competitiveness, the Group continues to optimize production indicators and promote high-quality development of the enterprise through standardized and lean management. Focusing on the development concept of “innovation, coordination, greenness, openness, and sharing”, the Group has implemented measures of improving quality and efficiency to enhance its ability to create value by improving production management mode and implementing technological transformation.

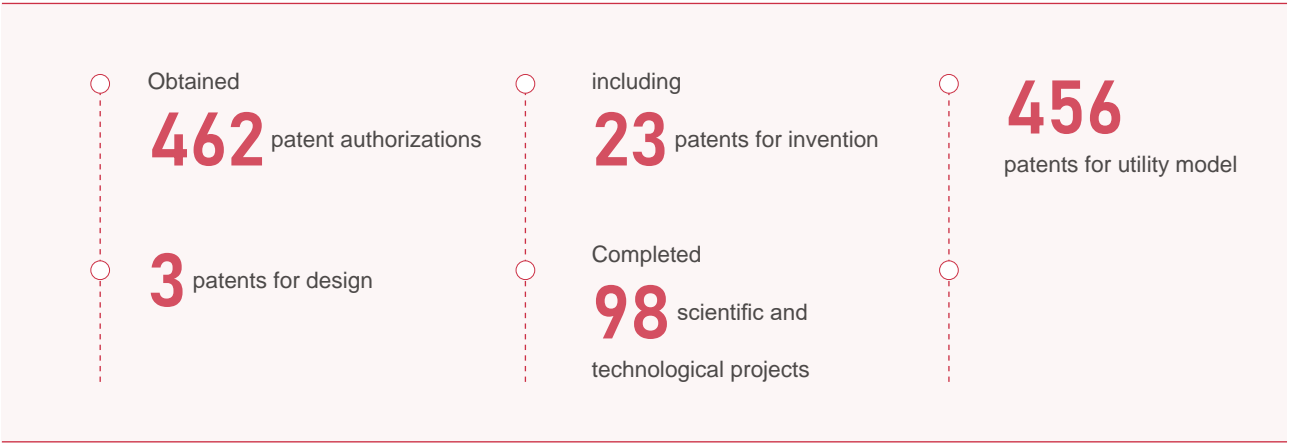
Indicators	Unit	2022
Number of retail customers served by electricity selling companies	customer	3,982
Total amount of electricity sold by electricity selling companies	million MWh	85.7

## | Continuous Innovation

Innovation is the inexhaustible driving force for enterprises to enhance competitiveness and achieve sustainable development. The Group has always adhered to the corporate spirit of “meticulousness, efficiency and excellence”. While pursuing to achieve high benefits through high efficiency, the Group actively creates active atmosphere of innovation, and encourages employees to make innovative attempts.

The Group vigorously promotes technological innovation, makes considerable investment in scientific research, actively carries out various scientific research and innovation activities, and constantly makes technological progress. Meanwhile, the Group insists on the combination of technological innovation and intellectual property protection. When issuing plans for science and technology projects, the Group requires that “the intellectual property rights generated by the research institute of scientific and technological project of the company shall be owned by the project undertaking unit of the company”, and the maintenance expenses of intellectual property shall be included in the general management fee. During the Reporting Period, the Group was not involved in any disputes or legal proceedings related to intellectual property rights.

During the Reporting Period, the Group:





## Focus Huadian Power International Fengjie Plant Established a Science and Technology Innovation Studio Alliance

Taking technological innovation, management innovation, service innovation and system innovation as the main content, Huadian Power International Fengjie Plant has established a science and technology innovation studio alliance with universities, scientific research institutes and units within the system, and given full play to the innovative example role of employee innovation studio in group's economic and technological innovation activities, stimulated the cluster effect of innovation studio alliance and joint research and collaborative innovation efficiency, cultivated innovative talents, and promoted the high-quality development of enterprises. Peng Yujun Innovation Studio were honored with the title of 2022 "Chongqing Energy Industry Model Worker and Craftsman Talent Innovation Studio", and the *Technology and Application of Mixer, Dynamic and Precise Ammonia Injection in SCR System of W Flame Unit* won the third prize of 2022 Power Construction Science and Technology Progress Award.



Experience sharing meeting of Science and Technology Innovation Studio

In order to strengthen the Group's material management work and establish a centralized, standardized, and efficient material security system, the Group has formulated the *Material Procurement Management Measures of Huadian Power International Corporation Limited*, which sets out the general objectives of material management, plan management, procurement management, and supplier management, etc. In order to systematically control and strengthen supplier management, ensure the quality of bidding and procurement, and control the environmental and social risks of suppliers, the Group has established a unified supplier network in accordance with the principles of "unified management, dynamic assessment, scientific control, and supporting the superior and eliminating the inferior". The supplier network implements layer-by-layer checks on each step of supplier selection, supplier pre-qualification review, supplier dynamic quantitative evaluation, annual review, inspection and supervision. Suppliers are managed timely and effectively through the e-commerce platform.

In addition, the Group has established a supplier assessment indicator system to optimize the structure of supplier and has created a supplier blacklist to control procurement risks. Criteria for supplier assessment mainly include the suppliers' performance in quality, safety and service, whether they are certified by the ISO 14001 Environmental Management System, whether they have comprehensive policies and objectives regarding quality and environment, or whether they have had adverse social impacts on production, operation or construction, etc.

As a large power generation enterprise, the Group's suppliers are mainly coal supply companies. The quality of coal has a direct impact on the Group's power generation efficiency and environmental protection work. On the one hand, the Group actively adopts measures to deal with coal market risks, and on the other hand, it adopts measures to mitigate coal suppliers' environmental risks, thereby improving the implementation of environmental protection work and reducing pollutant emissions. Therefore, in order to effectively control the environmental risks of coal suppliers and encourage them to use environmentally friendly products, the Group uses coal with high calorific value, low sulfur and ash content. In addition, the Group has established a reference-oriented coal sample system, improved acceptance process tracing mechanisms, built process monitor system and developed standardized labs for incoming coal to control coal source and quality. The incoming coal is required to be tested on whether the quality meets the national requirement and the procurement requirement of the Group before acceptance to ensure that coal quality is under control.



During the Reporting Period,

The number of suppliers applying the Group's supplier-related management measures was

**3,912**

accounting for

**100%**

## Sustainable Supply Chain

Suppliers are one of the important partners of the Group. Establishing and maintaining long-term and close cooperation relationship with suppliers is an important guarantee for the stable and efficient operation of the Group. In view of this, the Group attaches great importance to the management of potential environmental and social risks in its supply chain, while building a sustainable and high-quality supply chain through the establishment of a strict procurement policy system and supplier selection process.

The Group's procurement mainly includes fuel, infrastructure equipment, related materials, and services. The Group strictly complies with laws and regulations such as the *Public Tendering Law of the PRC*, etc., and formulates internal policies such as the *Materials Procurement Management Measures of Huadian Power International Corporation Limited*, the *Infrastructure Construction Procurement Management Measures of Huadian Power International Corporation Limited*, etc. Meanwhile, the Group is committed to ensuring the legal compliance of procurement management and an open, fair, impartial and honest bidding process.

Regions	Units	Number of Suppliers in 2022	Number of Suppliers in 2021	Number of Suppliers in 2020
Mainland China	Number	3,910	4,882	11,418
Hong Kong, China	Number	2	3	5



# 03



## Provide Stable Power Supply and Ensure Safe Operations

The Group adheres to placing safe production as the number one priority for its operations, and implements the principle of “safety first, prevention crucial, comprehensive treatment”. With a rigorous and efficient corporate attitude, the Group ensures the carrying out of safe production work, continuously improves its safety management and supervisory system, improves safety risk management capabilities, implements occupational health and safety management measures, ensures the safety of personnel and assets, and provides communities with stable and reliable energy in a sustainable manner.

Responding to material issues: Occupational Health and Safety, Employee Development and Training, Ensuring Service Quality, Maintaining Stable Electricity and Heat Supply

- 01 Consolidate Safety in Production
- 02 Ensure Stable Supply
- 03 Ensure Occupational Health







## Consolidate Safety in Production

In 2022, the Group attached great importance to safe production, continued to strengthen the implementation of the responsibility system for safe production in all positions, vigorously grasped the construction of a dual prevention mechanism for safety risks and safety hazards, continued to deepen the construction of intrinsically safe enterprises, focused on preventing and resolving safety risks in key areas such as hazardous chemicals and hydropower dams, and coordinated the production work.

The Group has always regarded production safety as a top priority, strictly complied with the *Work Safety Law of the PRC* and other national and industrial laws, regulations and standards related to work safety, established work safety supervision and protection systems and formulated work safety management systems, including the *Safe Production Responsibility System*, the *Administrative Regulations on Hazards investigation and Management*, the *Safety Management of Major Dangerous Sources*, the *Administrative Regulations on Safety of Contracted Projects*, the *Measure for the Management of Traffic Safety*, and the *Safety Training Management*, so as to continuously enhance the execution and implementation of the safety management system. Meanwhile, The Group has formulated safety management systems including production safety responsibilities, safety risk grouping control and hidden danger investigation and management, safety management of major hazards, occupational health management, safety management of contracted projects, safety training management, anti-infringement management, work ticket and operation ticket management, fire work management, safety rewards and punishments, safety information management, traffic safety management, flood control management, etc., and continues to strengthen the execution and implementation of safety management system. The Group's headquarter and its subsidiaries have all established work safety committees and a three-level safety supervision network of "factory-workshop-team" to ensure that safety responsibilities are implemented at all levels.

During the Reporting Period,



**No** violation against the above laws and regulations on production safety and provision of a safe workplace. The overall situation of safe production was stable.

**No** general or serious personal injuries or deaths occurred

**No** general or serious equipment and fire accidents occurred

In order to strengthen the management and control of safety risks at production sites, the Group actively carries out the construction of safety production standardization, continuously improves the level of safety production management, and takes the following safety measures:



Deepen the hierarchical management and control of safety risks and increase the extent of safety risk identification and dynamic hierarchical management and control.



Combined with safety activities such as seasonal safety inspections, flood control, safety inspections before festivals and major events, conduct in-depth investigation and management of hidden dangers in production safety and anti-infringement.



Pay close attention to the development, improvement and implementation of technical measures for safety, highlighting the safety control of flammable and explosive areas, major sources of danger, aboveground operation and outsourced projects. Continue to improve the monitoring and early warning mechanism of concentration of flammable and explosive gas, ensure the normal operation of ventilation facilities, ensure that safety risks are controllable and under control, and continue to strengthen the foundation of safe production.



Strengthen the configuration management of safety facilities at the production site and the management of the workplace safety, ensure that the safety facilities at the production site are fully equipped and reliable, and ensure the safety of the operating environment at the production site.



Encourage primary level production sites to strengthen the construction of science and technology for safety, actively apply new technologies to reduce operational risks, and ensure safe production.



Strengthen emergency management, establish and improve emergency response plans and strengthen drills, and continuously improve the emergency response capacity of relevant personnel.

The implementation of safe production is also reliant on practical safety training to enhance employees' safety skills and safety awareness. To this end, the Group has actively carried out safety training, including:



In conjunction with the Group's certification examination system for safety skills training, comprehensively conduct training and education on relevant laws and regulations, safety rules and systems, and safety production situations;



Conscientiously carry out training on typical case studies of safety incidents;



Arrange for safe production management personnel and front-line personnel at basic-level to regularly participate in safety skills training examinations in accordance with regulations, and only those that have obtained certification can engage in production work at production sites;



Encourage basic-level units to conscientiously carry out practical safety experience training to enhance employees' safety awareness.

The Group also fully understands the importance of emergency response to accidents in the implementation of production safety work, and has formulated the *Regulations on Emergency Response to Production Safety Accidents* to strengthen and clarify the responsibilities of relevant parties in emergency response to production safety accidents. The Group's subsidiaries also prepare comprehensive and special contingency plans for emergencies, and continuously improves employees' emergency handling ability through emergency drills to ensure personal safety and health as well as smooth production.



During the Reporting Period, the Group had a total of **643** safety specialists;

a total of **95,334** person-time of the Group passed safe production examinations;

a total of **2,056** safety emergency drills was conducted.

#### Focus | Huadian Zhejiang Longyou Thermal Power Company Limited Actively Carried out Emergency Drills

Huadian Zhejiang Longyou Thermal Power Company Limited carried out targeted emergency drills and formulated detailed annual emergency drill plans according to actual situation. During the Reporting Period, comprehensive emergency drills such as firefighting, personal casualties and flood control were carried out many times. At the end of September, this company organized emergency drills such as power outages, public security and anti-terrorism in combination with the power preservation work, and further comprehensively examined the company's capabilities such as on-site command and response to emergencies, coordination and organization, public opinion management, and logistics support. Through periodic emergency drills, this company continuously improved the emergency response ability of employees, and effectively improved the prevention of production safety accidents and emergency rescue.



Photo of the Emergency Drill

#### Focus | Anhui Huadian Lu'an Power Plant Company Limited Organized and Carried out An Emergency Plan Drill for Liquid Ammonia Leakage

In the morning of June 24, 2022, in order to improve the handling and response ability of this company's employees to deal with emergencies, to implement 15 robust measures for safe production and ensure the safety of people and equipment, Anhui Huadian Lu'an Power Plant Company Limited organized an emergency drill for the leakage of hazardous chemicals (liquid ammonia). This drill trained all personnel to deal with emergencies, and also helped this company identify the improvement points in the process of personal injury emergency treatment, which accumulated valuable experience to better handle hazardous chemical leakage and personal injury emergency rescue in the future.



Activity Image

## Ensure Stable Supply

It is the most important responsibility of the national energy industry currently to make every effort to ensure power supply, heat supply, and safeguard people's livelihood, development and safety. It is the Group's unshakable responsibility and mission to practice the service concept of "Huadian thermal power, warming tens of thousands of families" with practical actions, and to effectively ensure the supply of electricity and heat to satisfy the public needs.

The Group has set up a leading group for ensuring energy supply, earnestly fulfilling its political and social responsibilities. Centering on the core goals of ensuring power and heat supply, the Group has overcome the difficulties of high coal prices in the market and high operating pressure on coal-fired power enterprises and has made every effort to ensure safe and reliable energy supply. Meanwhile, combined with the current financing environment, the Group has carefully sorted out the financial situation of all coal-fired power enterprises under its management, arranged various financial support in an orderly manner according to the financial demand, and ensured the capital demand for energy supply to the greatest extent.

In addition, the Group continues to improve the emergency response mechanism and strengthen emergency response training and drills to ensure stable supply while firmly implement safe production. The Group conducts drills on contingency plans for major emergencies every year and conducts all drills on contingency plans and emergency plans every two years. For important nodes, such as winter and important events (such as the National Day), the Group will also carry out special inspections and work to ensure power and heat supply.

#### Focus | Hunan Huadian Changde Power Generation Company Limited Guaranteed the Power Supply

On November 15, 2022, Hunan Huadian Changde Power Generation Company Limited assembled more than 150 cadres to form a team and stationed in the plant 24 hours a day to ensure the safety and power supply. Faced with the challenge of power supply, Hunan Huadian Changde Power Generation Company Limited quickly launched the emergency plan, resolutely fulfilled the social responsibilities of centrally administered SOEs, and cadres and employees started the battle of Power Supply Guarantee with the strictest discipline and the best work quality.



Power Supply Guarantee Action

#### Focus | Sichuan Guang'an Power Generation Company Limited Guaranteed Power Supply during Heat Weather

On August 24, 2022, Sichuan Guang'an Power Generation Company Limited generated 57.13 million kWh of electricity in a single day, setting a new record for single-day power generation since this company's establishment. In the summer of 2022, affected by continuous high temperature and little rain, Sichuan Province faced with a severe situation where the highest temperature, the least amount of hydropower, the greatest load and the longest time conditions are superimposed, and the power supply guarantee experienced a big test. Sichuan Guang'an Power Generation Company Limited resolutely took the politic and social responsibility of energy and power supply, united and led the vast number of cadres and employees to tackle difficulties and made all efforts to expanding coal supply sources, purchase coal for electricity generation, ensure power supply, pay close attention to equipment management improvement, and consolidate the foundation of safe production. From July 26 to August 29, six sets of generators maintained high load operation for 35 consecutive days to generate electricity of 1.877 billion kWh, achieving a year-on-year increase of 179.98%.



Power Supply Guarantee Action



The Group also understands that the quality of customer service is directly related to the production, operation and life quality of the general public in the supplying area. The Group insists on actively carrying out the work of improving customer service level and customer satisfaction as an important work. The Group's customers are mainly power grid companies, electricity users and heat users. Over the years, the Group has continuously improved the management of customer service to ensure smooth communication with customers, actively responded to customers' needs and expectations, and implemented customer feedback to improve customer service satisfaction with considerate services.

During the Reporting Period, the number of customer complaints received by the Group was

0



In addition, in the era of informatization, personal information security and network information security are particularly important. The Group attaches great importance to the security of information, strictly complies with applicable laws and regulations such as the *Law of the Protection of Consumer Rights and Interests in the PRC*, and properly keeps the information of the Group and customers in accordance with confidentiality arrangements and privacy protection measures to ensure the security of information.

## Ensure Occupational Health

The Group strictly abides by national laws and regulations that have a significant impact on the Group relating to providing a safe working environment and protecting employees from occupational hazards and relevant industrial standards and regulations, including but not limited to the *Law of the PRC on the Prevention and Control of Occupational Diseases* and the *Provision on the Supervision and Administration of Occupational Health at Work Sites*, and has formulated and implemented the corporate standard of occupational health, supervision management system of occupational health and other measures. In order to fully implement the aforementioned laws and regulations, to strengthen the management of the prevention and treatment of occupational diseases, and effectively protect the health and safety of workers during operations, the subsidiaries of the Group have promptly announced and implemented relevant laws, regulations and policies, improved the occupational health management system, and regularly reviewed and updated the system and management measures, thereby implementing the goal of preventing and controlling occupational hazards.

### In terms of production site's safety management, the Group implements the following safety protection work:

- As for newly built power generating units, the Group designed and constructed the occupational hygiene facilities and put them into production and operated in strict accordance with the national "three simultaneous" management requirements for occupational health in construction projects. Furthermore, the facilities were assessed and reviewed by nationally qualified institutions;
- Strengthen the management of occupational health facilities in operation to ensure that they are complete and standardized;
- Formulate the monitoring and assessment of occupational health hazards, and occupational health surveillance and archive management, regularly monitor the potential hazards of occupational disease such as dust, noise, toxic and hazardous substances, and electromagnetic radiation, etc., that may occur on-site;
- Set up announcement boards and offer notice cards at the entrances of workplaces, and set warning signs of occupational disease hazards at the striking positions in workplaces;
- Configure dust removal facilities in areas such as coal transportation systems where dust hazards may exist, strengthen the containment of toxic materials in locations with ammonia gas and other locations where toxic substances are present, avoid direct operations and open-air layouts, and equip toxic gas concentration monitoring and spraying facilities.



### In terms of employee personal health and safety protection, the Group implements the following safety protection work:

- Strengthen the inspection, management and maintenance of occupational health equipment and facility to ensure they are effective;
- Enhance employee protection measures by providing work clothes, insulated shoes, protective glasses, earplugs, dust masks, and anti-toxic protective equipment, etc. to employees as required;
- Uphold the principle of "prevention crucial", organize occupational health knowledge training and enhance promulgation of occupational safety and health knowledge;
- Enhance the diagnosis and treatment of occupational diseases, organize employees to have health examinations of occupational disease in an order manner and continuously improve medical and health protection measures;
- Under the condition of high summer temperature, provide good logistics support, promptly implement measures to prevent heatstroke, and carry out activities such as promotion of heatstroke first aid knowledge, delivery of heatstroke cooling items to the front line to effectively ensure the health of personnel and equipment during peak summer periods.

During the Reporting Period, The number of work-related fatalities of the Group was

0

0 for the past three years

Total lost days due to work injury was

2,340

The coverage rate of occupational disease examination was

100%



# 04



## Promote Transformation and Lay A Green Foundation

In the goal related to ecology and energy, lucid waters and lush mountains are invaluable assets. The Group has always adhered to the corporate mission of “providing reliable, clean and economical energy”, actively responded to the national environmental protection policies, comprehensively implemented the national dual control of energy consumption and “3060” dual carbon goals, strengthened its ability to respond to climate change risks, continued to promote energy conservation and emission reduction, continued to increase resource investment, and achieved the co-development of high-quality development and ecological and environmental protection.

Responding to material issues: Energy Use and Management, Compliance Management, Ecological Protection

- 01 Tackle Climate Change
- 02 Strictly Control Operational Emissions
- 03 Conservation of Resources
- 04 Strictly Protect Ecosystem
- 05 Environmental Key Performance





## Tackle Climate Change

Since 2022, China has successively introduced policies related to carbon emission reduction: In 2022, The National Development and Reform Commission and the National Energy Administration issued the *Opinions on Improving Institutional Mechanisms and Policy Measures for Green and Low-carbon Energy Transition*, the “14<sup>th</sup> Five-Year Plan” on Modern Energy Systems, and the “14<sup>th</sup> Five-Year Plan” on Renewable Energy Development. On April 2, 2022, the National Energy Administration and the Ministry of Science and Technology issued the “14<sup>th</sup> Five-Year Plan” for Science and Technology Innovation in the Energy Sector. On August 29, 2022, the Ministry of Industry and Information Technology, Ministry of Finance, Ministry of Commerce, SASAC, State Administration of Market Supervision and Administration issued the *Notice of Action Plan To Expedite the Green and Low-Carbon Development of Electrical Equipment*. The above-mentioned policies are mainly reflected in green energy and low carbon transition, science and technology innovation and carbon emission management aspects, which have a profound and immense impact on the Group.

Under the dual carbon policy, the whole society will accelerate the optimization of industrial structure and energy structure, and actively formulate and practice the responsibilities and obligations of “3060”. In the path to achieving the dual carbon goal, electricity and energy is the key industry. Based on domestic resource endowment, energy storage technology development, and various power generation technology characteristics, the flexible transformation of coal-fired units is the best way to improve the regulation capacity of systems. On the basis of careful study and judgment of the domestic background and relevant policies, objective assessment of its own basic situation and comprehensive analysis of the situation faced, the Group actively responded to the goals of the 14th Five-Year Plan on the five goals of “energy security, energy transformation, energy system efficiency, innovative development and service quality”, and proposed a series of measures to support the development of dual carbon development and address climate change, including:



Strengthen Policy Research and Actively Participate in Thematic Training on Carbon Management Organized by the Ministry of Ecology and Environment and China Huadian

Through online training and other forms, the Group organizes employees to participate in carbon neutrality thematic training and mini-course lectures to deepen their understanding of the current policies under the background of carbon neutrality and accurately seize the development trend of carbon neutrality.



Strengthen Technical Research and Enhance Management Methods

Actively participating in the research project of innovation management and policy of power enterprises, the Group's main research project "Opportunities and Challenges for Traditional Thermal Power Enterprises to Practice Dual Carbon Commitment in the New Development Stage" won the China Huadian Policy Research Outstanding Achievement Award. The paper results of this project also won the first prize of the 2022 National Electric Power Enterprise Management Innovation Paper Competition.



Strengthen Technological Transformation and Operation Management, and Strive to Reduce Carbon Emission Intensity

On the basis of the preliminary research work, the Group actively promotes the application of new digital technologies such as big data, cloud computing and artificial intelligence in combination with the actual operation, carried out the scientific and technological project of "Research and Application of Intelligent Combustion Guidance System for Coal-fired Power Generating Units ", developed a real-time online "Intelligent Combustion Guidance System for Coal-fired Power Generating Units ", and carried out experimental research of application in Suzhou, Fengjie, Xinxiang and other subsidiaries. At the same time, the Group actively responds to the relevant requirements of the state and China Huadian on energy conservation and emission reduction of coal-fired power generating units, promotes the application and innovation of energy-saving and consumption-reducing technologies, and implements technological transformation of each coal-fired power generating units to ensure the fulfillment of requirements of carbon emission intensity and carbon emission allowances (“CEAs”).

In addition, the Group actively participated into the integration of renewable energy assets with Huadian New Energy Group Co., Ltd., a subsidiary of China Huadian. This integration realized a large proportion of equity participation in the development and integration platform of China Huadian's renewable energy, facilitating the development of the renewable energy industry. The Group has been continuing to pay attention to and actively exploring more efficient and environmentally friendly power generation technology, to vigorously promote green transformation.

Controlling GHG emissions is an essential act of tackling climate change. During the Group's operation, its GHG emissions are mainly sourced from fossil fuel combustion in thermal power plants. Hence, to manage fossil fuel consumption effectively and decrease coal consumption rate for power supply is a direct way to control GHG emission. To this end, the Group has set a goal of expecting to reduce carbon emissions by 1% by 2025 (compared with 2020) and will continue to take energy conservation and consumption reduction as an important means to improve quality and efficiency, optimize the efficient operation of equipment, and promote technological transformation and consumption reduction.

### Focus

Huadian Weifang Power Generation Company Limited Completed the First CEAs Donation in Shandong Province

On June 15, The Ministry of Ecology and Environment and the People's Government of Shandong Province co-hosted the "National Low Carbon Day. Huadian Weifang Power Generation Company Limited donated 20 tons of CEAs to offset GHG emissions of the event's main venue. This was the first voluntary offset project of CEAs in Shandong Province and has obtained the "National Carbon Market CEAs Voluntary Cancellation Certificate".

For a long time, Huadian Weifang Power Generation Company Limited has taken the initiative to assume the responsibility of centrally administered SOEs, earnestly implemented the dual carbon action, regarded the national carbon market trading work with high standards as an important topic, strengthened the quality management of carbon emission data, and continuously improved the carbon asset management capabilities; On the basis of steady operation, Huadian Weifang Power Generation Company Limited optimizes the layout of energy structure, and strives to build a comprehensive energy supply service system integrating electricity, heat, steam, cooling, hydrogen, photovoltaic and energy storage.



National Carbon Market CEAs Voluntary Cancellation Certificate

With the increasing adverse effects brought by climate change, such as the increase in the frequency of extreme weather, global warming effect has been increasing. In this regard, power generation enterprises need to strengthen their ability to cope with risks so as to cope with high temperature, windy and rainstorm weather with higher frequency to ensure the safety and stability of production activities. In the face of possible extreme weather, the Group's subsidiaries have formulated detailed work plans, emergency plans and drills, such as working mechanisms and drills for summer peak electricity demand, flood control and stable power supply, and typhoon prevention.

## Strictly Control Operational Emissions

During the "14th Five-Year Plan" period, China's ecological civilization construction has entered a critical period with carbon emission reduction as the strategic direction, promoting synergy in pollution reduction and carbon emission reduction, facilitating comprehensive green transformation of economic and social development, and realizing the improvement of ecological environment quality from quantitative to qualitative change. The in-depth battle for pollution prevention and control and the continuous improvement of the quality of the ecological environment are necessary to achieve the coordinated development of high-level protection of the ecological environment and high-quality economic development. In response to the increasingly stringent requirements on ecological and environmental protection in China, the Group has timely announced and resolutely implemented relevant national policies and requirements, improved the internal environmental protection management system and measures, actively adopted technological transformation for environmental protection and related environmental protection measures, implemented the normal operation of environmental protection equipment and supervision of environmental protection indicators, and strictly controlled the discharge of pollutants in compliance with standards.



During the operation process, the emissions generated by the Group mainly include air pollutants such as sulfur dioxide, nitrogen oxides, soot, etc., carbon dioxides, wastewater and solid waste. The Group strictly complies with relevant laws and regulations that have a significant impact on the Group relating to air and GHG emissions, discharges into water and land, and generation and disposal of hazardous and non-hazardous waste, including but not limited to the *Environmental Protection Law of the PRC*, the *Water Pollution Prevention and Control Law of the PRC*, the *Water and Soil Conservation Law of the PRC*, the *Law of the PRC on the Prevention and Control of Environmental Pollution by Solid Waste*, the *Environmental Protection Tax Law of the PRC*, the *Environment Compliance Guidance for Coal-fired Thermal Power Enterprise*, the *Emission Standard of Air Pollutants for Thermal Power Plants* and the *Notice of National Development and Reform Commission on GHG Emissions Reporting by the Major Enterprise and Public Institutions*. In addition, the Group strictly implements and complies with the *Supervision and Management Measures on Ecological Protection of China Huadian Corporation Limited*, the *Administrative Measures of “Three Simultaneities” for Environmental Protection and Water and Soil Conservation at Construction Projects of China Huadian Corporation Limited*, the *Measures for Managing Emission Permits of China Huadian Corporation Limited*, etc.

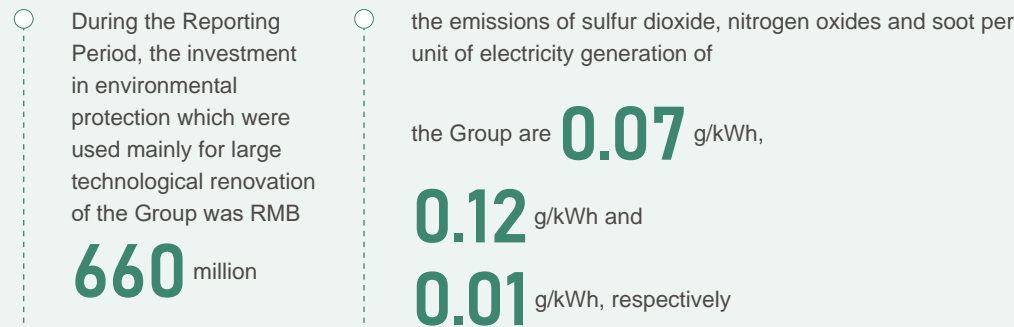
In 2022, relevant ministries and commissions of the state promulgated about 50 major ecological and environment-related laws and policies, including the *Format Guidelines for Legal Disclosure of Enterprise Environmental Information* and the “14th Five-Year Plan” for the *Integrated Management of Water Environment in Key River Basins*, which the Group forwarded to regional subsidiaries for study and implementation in a timely manner through communication channels. During the Reporting Period, the Group has paid environmental protection related taxes in full, and there was no incident of non-compliance with environmental protection related laws and regulations. According to the *State Contingency Plans for Environmental Emergencies*, the Group did not have any environmental emergencies of general or above level during the Reporting Period.

Air Pollutants

The power generation industry is a major industry for energy saving, consumption reduction, and pollution emission reduction. In order to speed up the development of a resource-saving and environmentally friendly society, China continually promotes the reduction in pollutant emissions and energy consumption.

In order to ensure the compliance of air pollutant emissions, the Group pays attention to, advocates, and implements national environmental protection policies and regulations in a timely manner, improves environmental protection management and the supervision system and maintains the implementation of general management and daily supervision. The overall status of environmental protection, input in environmental protection and pending improvements are included in the Groups’ annual summary and plan. Meanwhile, the Group monitors emissions, analyzes and summarizes indicators.

In addition, the Group spares no effort to reduce pollutants emission by technological renovation and enhancing the operation and maintenance management of environmental protection facilities. Since 2020, the Group has completed the ultra-low emission transformation of all coal-fired power generating units. Without further adopting relevant emission reduction measures, the maintenance of environmental protection facilities’ removal effect has become one of the key environmental protection tasks of each company due to the continuous aging of environmental protection facilities.



Effluent

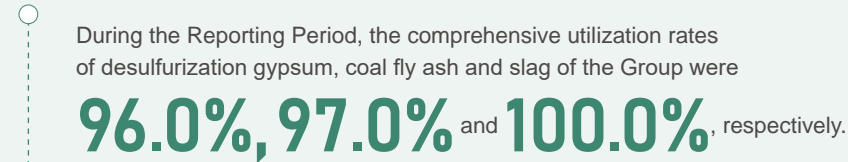
For wastewater generated during the operation process, the Group carries out work in accordance with relevant national and local regulations to ensure that the requirements for wastewater treatment and discharge are met. The Group’s power generation projects follow the principle of “diversion of clean water and wastewater, diversion of rainwater and wastewater, and multiple use of water”, and treat wastewater through an effective wastewater treatment system. The treated wastewater is partly used for greening and cleaning water in the plant area, and the rest is discharged as required.

The Group will strengthen the management of wastewater discharge and strives to achieve zero wastewater discharge. The thermal power plants under the management of the Group have started to prepare for comprehensive treatment and renovation of wastewater since 2016 and have all met the environmental emission standards since 2020. Going forward, the Group will continuously strive to achieve the goal of near zero discharge of wastewater except once-through cooling water by the end of the “14<sup>th</sup> Five-Year Plan”.



Waste

As for the generated wastes during operations, the Group has implemented practices pursuant to relevant national and local requirements and ensures the requirements of waste handling and disposal are met. The hazardous waste generated by the Group during its operation mainly includes spent catalysts and spent machine oil. Whilst the general solid waste generated is mainly desulfurization gypsum, coal ash and slag. For the hazardous wastes generated, the Group has built a hazardous waste storage warehouse in accordance with the *Law of the PRC on the Prevention and Control of Environmental Pollution by Solid Waste*, and then delivered to qualified third parties for centralized treatment, with a treatment rate of 100%. The handling or transfer procedures are in strict compliance with the requirements for hazardous waste disposal of the national and local regulatory bodies where the Group’s subsidiaries located. As for general solid wastes, the Group proactively promoted a circular economy, which desulfurized gypsum, coal ash and slag were reused in various ways or sold, such as in the production of cement, concrete, etc., so as to reuse resources. In the future, the Group will continue to encourage relevant units to strengthen the comprehensive utilization of waste with the goal of maintaining 100% compliance treatment rate of hazardous waste and further improving the comprehensive utilization rate. In addition, the Group is reducing waste generation by strengthening source management and fuel procurement.





### Focus | Huadian Laizhou Power Generation Company Limited built a "smart, ecological and beautiful" power plant

Huadian Laizhou Power Generation Company Limited fully implements ecological and environmental protection into its construction, so as to build a "smart, ecological and beautiful" power plant. This company has achieved the fully enclosed fuel transportation to avoid dust during the fuel transmission process; The implementation of shore's power transformation at the terminal has effectively reduced the pollution of heavy fuel oil used by ships at port. Using seawater desalination technology, more than 4 million tons of freshwater are produced every year, saving freshwater resources. Through a series of environmental protection measures, Huadian Laizhou Power Generation Company Limited has entered the advanced ranks of high-efficiency and environmentally friendly power generating units. In 2022, the Department of Finance of Shandong Province and the Provincial Federation of Industry and Commerce compiled and issued *100 Cases of "Paying Attention to Environmental Protection and Facilitating Development"*, and Huadian Laizhou Power Generation Company Limited was included in the document as an excellent enterprise case.



An Overview of Laizhou Power Plant

## Conservation of Resources

As a power generation enterprise, the Group strictly abides by the *Law of the PRC on the Promotion of Clean Production*, the *Guidelines for Environmental Compliance of Coal-fired Thermal Power Enterprises* and other laws and industrial regulations on the use of resources. At the same time, the Group firmly implements the energy conservation priority policy in China's "14<sup>th</sup> Five-Year Plan", strengthens energy conservation management, and continuously promotes the transformation of energy structure to be green, low-carbon and efficient.

Regarding the use of resources and raw materials, the primary consumed resources and raw materials of the Group include coal, natural gas, diesel and water resources. With the goal of effectively saving resources and improving utilization efficiency, the Group constructs its projects with scientific management, careful organization and meticulous construction. Energy and water saving technology renovation are implemented to existing coal-fired power generating units. The Group constantly improves energy consumption indicator management and implements specific energy and water saving plans after collecting, consolidating and analyzing energy consumption data. By doing so, it is able to gradually form a mature energy consumption management system. Furthermore, the Group continues to promote the research of fuel intelligent management and enhances its fuel information management system, which supports full-process tracking, accurately managing fuel.

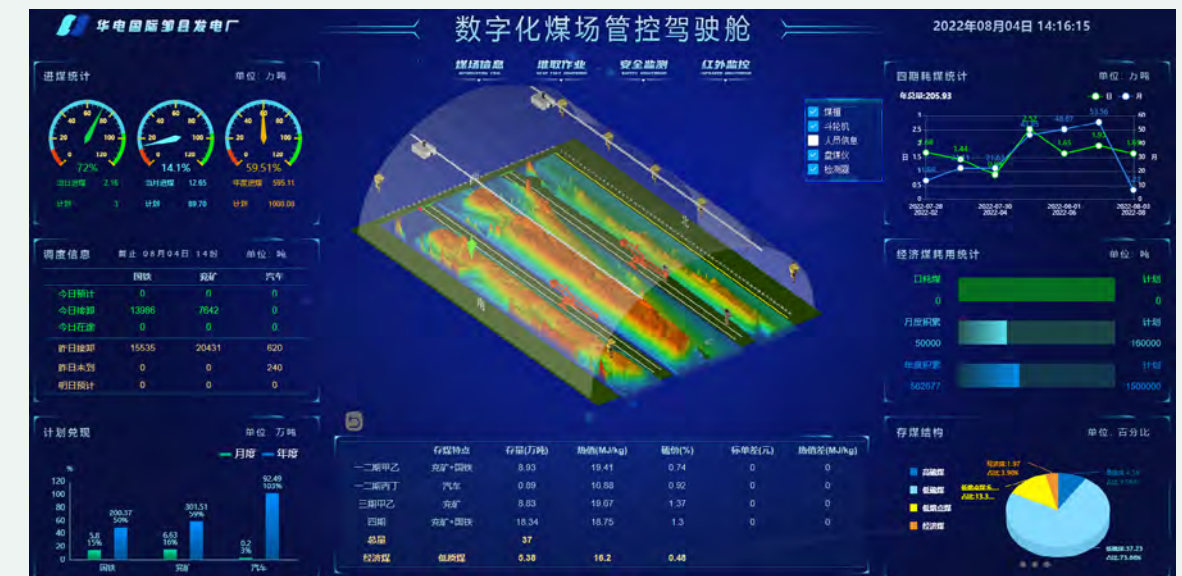
During the Reporting Period, the standard coal consumption of power generation of the Group was

**272.0** g/kWh,

and decreased by  
**0.25%** compared  
with the previous year.

### Focus | A Digital Coal Yard System of Huadian Zouxian Plant

Huadian Zouxian Plant comprehensively uses laser coal stocktaking, wireless positioning, data superposition and unattended bucket turbine technology to display coal yard intake, consumption, storage, quantity, quality, temperature, storage period and other information in a three-dimensional graphical way, so as to achieve automatic coal stacking and reclaiming operations and coal storage structure analysis, thereby improving the efficiency of stacking operations by 30% and reducing the power consumption of the plant by more than 200,000 kWh/ year.



Digital Coal Yard System Control Panel

Water is an indispensable resource in the production activities of power generation enterprises, especially for the Group's coal-fired power and hydropower business. On the one hand, in order to effectively control the risks related to water resources, the Group fully considers the water intake of the project during the project design period, investigates the distribution of water resources in the region and the precipitation situation, and selects the appropriate construction area. Therefore, the Group does not have any issue in sourcing water that is fit for purpose. On the other hand, with the goal of reducing the water consumption rate of power generation and improving water efficiency, the Group actively adopts water-saving measures and conducts equipment's water-saving technological transformation in the daily operation of projects. Each subsidiary of the Group also carefully formulates water use plans and water management measures, conducts research and analysis on the use of water resources, and eliminates the waste of water resources. In addition, some of the Group's power plants have implemented the whole plant wastewater recycling and treatment transformation, and all wastewater is recycled and reused after treatment in compliance with standards to improve the utilization rate of water resources.



During the Reporting Period, the water consumption rate of the Group's coal-fired power plants was

**1,260.6** g/kWh.



# | Strictly Protect Ecosystem

Environmental protection policies in China have become increasingly stringent. With the increasingly strong binding force of ecological protection redlines, minimum environmental quality requirements, upper limits on resource utilization and the negative list for environmental access, stricter requirements are imposed on work of the Group including preliminary work, infrastructure construction and production. Therefore, the Group adheres to implement ecological and environmental protection and fight the battle for prevention and control of pollution. The Group strictly complies with relevant policies and management measures relating to minimize the significant impacts on the environment and natural resources, including but not limited to the *Law of the PRC on Appraising Environment Impacts (2018 Edition)*, the *Comprehensive Evaluation Measures for Ecological Protection of China Huadian Corporation Limited (Trial)*, etc. The Group also ensures that emissions generated from its operations, such as air emissions, wastewater, noise, etc., attain the relevant standards, for example, the *Emission Standard of Air Pollutants for Thermal Power Plants*, the *Integrated Wastewater Discharge Standard*, the *Emission Standard for Industrial Enterprises Noise at Boundary*, etc.

The Group also strictly abides by the *Water and Soil Conservation Law of the PRC* and relevant policy requirements and is committed to implement soil and water conservation. For construction projects, the Group will carry out environmental impact assessment of construction projects, identify important environmental impact factors, formulate and implement various environmental protection measures, and also implement stringent management during construction, mining and project operation. For project construction, the Group implements the "three simultaneous" system of environmental protection and soil and water conservation, includes and implements the opinions, measures and requirement of environmental impact assessment reports and water protection plans, and requirements of national environmental protection and water protection management in the "three simultaneous" plan to ensure that the impact of project construction on the ecological environment is minimized.

In recent years, the Group has continued to carry out hydropower station proliferation and release of rare fish activities, releasing more than 200,000 fish each year to ensure the ecological flow of each hydropower station, and actively participates in afforestation, devoting the Group to biodiversity protection in various ways, and making efforts to build a harmonious and beautiful homeland for all kinds of species.

## Focus | Fish Proliferation and Release in the Shuiluo River Basin

In 2022, Sichuan Liangshan Shuiluohe Power Development Co., Ltd. controlled by Sichuan Huadian Power Investment Company Limited has actively participated in the fish proliferation and release action, releasing a total of 110,000 fish fry of various types in four power stations around the Shuiluo River Basin. According to the environmental impact assessment report and protection work design of each station in the river basin, and combining with the actual situation of the Shuiluo River Basin, this company formulated the implementation plan of scientific fish proliferation and release, and then carried out the fish proliferation and release in the Shuiluo River Basin, protecting biodiversity and promoting harmonious coexistence between human and nature.



Pictures of Fish Proliferation and Release Activities

## Focus | Hangzhou Huadian Banshan Power Generation Company Limited Promoted the Comprehensive Environment Improvement Project

The comprehensive environmental improvement project of Hangzhou Huadian Banshan Power Generation Company Limited mainly includes four parts: cooling tower modification, plant landscaping, transformation of overhead wire to underground cable, and plant noise control. This company is committed to strictly controlling the construction "quality", creating "high-quality projects", fully integrating into urban construction, and helping to improve the landscape and quality of the north Hangzhou grand canal new city area. The project also included construction of Huadian Plaza, Volt Park and other electric culture theme parks in the factory to create a new cultural landmark in Hangzhou.



The Overview of Hangzhou Huadian Banshan Power Generation Company Limited

# Environmental Key Performance<sup>2</sup>

Responding to material issues: Emission and Management, GHG Emission and Management

Indicators	Units	2022	2021	2020	2022
Total input in environmental protection	Ten thousand RMB	66,374	77,000	18,280	Capital input
Air Pollutants					
Sulfur dioxide emissions	Tons	12,888	12,124	10,108	/
Sulfur dioxide emissions per unit of electricity generation	g/kWh	0.07	0.07	0.08	/
Nitrogen oxides emissions	Tons	22,300	23,929	19,357	/
Nitrogen oxides emissions per unit of electricity generation	g/kWh	0.12	0.13	0.14	/
Soot emissions	Tons	1,178	1,171	942	/
Soot emissions per unit of electricity generation	g/kWh	0.01	0.01	0.01	/
GHG <sup>3</sup>					
Total direct GHG emissions (Scope 1)	Ten thousand tons CO <sub>2</sub>	16,996.7	17,196.6	15,262.3	/
Total indirect GHG emissions (Scope 2) <sup>4</sup>	Ten thousand tons CO <sub>2</sub>	10.5	8.4	8.9	/
Total GHG emissions (Scope 1 and Scope 2)	Ten thousand tons CO <sub>2</sub>	17,007.2	17,205.0	15,271.2	/
GHG emissions per unit of electricity generation <sup>5</sup>	kg/kWh	0.7	0.8	0.7	/

<sup>2</sup> Unless otherwise stated, the data were sourced from a total of 40 thermal power plants put into operation (including electricity and heating supply) belonging to the Group as of the end of the Reporting Period.

<sup>3</sup> The calculations of GHG emissions were set out based on the Guideline of the Greenhouse Gas Emissions Accounting and Reporting for the Chinese Power Generation Enterprise (Trial). The data used in the calculation were sourced from the recorded data of the thermal power projects of the Group and best conservative estimates were made based upon historical performance data or benchmarking with similar facilities. The data listed here are only for reference.

<sup>4</sup> The calculation of total indirect GHG emissions (Scope 2) refers to the national grid average emission factor of 0.5703 tons CO<sub>2</sub>/MWh in 2022 provided by the Ministry of Ecology and Environment in the Notice on the Work Related to the Management of Greenhouse Gas Emission Reports of Enterprises in the Power Generation Industry for 2023-2025.

<sup>5</sup> The listed data refer to the GHG emissions per electricity generating of electricity supply, not including the heat supply.



Indicators	Units	2022	2021	2020	2022
Use of Resources					
Total electricity consumption of thermal power plant	MWh	13,812,964.5	13,916,170.8	12,644,174.4	/
Total natural gas consumption	Ten thousand cubic meters	397,395.0	386,543.6	316,093.6	/
Total diesel consumption	Ten thousand tons	1.9	1.7	1.5	/
Total coal consumption	Ten thousand tons	9,098.7	9,119.4	8,072.1	/
Total standard coal consumption	MWh	529,793,434	542,296,947	Not available	/
Total standard coal consumption per unit of electricity generation	g/kWh	272.0	272.7	274.9	/
Total water consumption of thermal power plants	Ten thousand tons	29,499.2	28,801.5	26,849.0	/
Water consumption rate of thermal-power electricity supply	g/kWh	1,260.6	1,218.6	1,295.1	/
Waste					
Spent catalysts generated	Tons	2,830.88	3,601.39	3,606.76	All recycled and reused by catalyst manufacturers
Spent machine oil generated	Tons	635.43	1,519.08	663.81	Entrusting qualified third parties for recycling and disposal
Waste bag filters for dust removal generated	Bags	40,931	35,019	20,776	Recycled by the manufacturer
Used batteries generated	Tons	95.66	205.56	155.84	Entrusting qualified third parties for recycling and disposal
Total coal ashes generated	Ten thousand tons	2,001.42	1,833.21	1,768.05	Comprehensive utilization and standardized storage for export, or used for land reclamation and greening
Comprehensive utilization rate of coal fly ashes	%	96.8	97.0	88.9	Comprehensive utilization and standardized storage for export, or used for land reclamation and greening

Indicators	Units	2022	2021	2020	2022
Number of coal fly ash storage fields	Fields	25	25	23	The construction of ash storage fields has passed the environmental impact assessment. The safety assessment of all ash storage fields of the Group is carried out in accordance with the <i>Guidelines for Safety Assessment of Ash Storage Fields of Coal-fired Power Plants</i> issued by the National Energy Administration to ensure the safety of all ash storage fields
Total slag produced	Ten thousand tons	441.87	385.08	382.54	Data include inventory of the previous year; Comprehensive utilization and standardized storage for export, or used for land reclamation and greening
Total desulfurization gypsum generated	%	100.0	98.7	91.7	
Comprehensive utilization rate of desulfurization gypsum	Ten thousand tons	646.45	591.99	597.29	Data include inventories of the previous year; comprehensive utilization and standardized storage for export, or reuse as raw materials for building materials
Comprehensive utilization rate of desulfurization gypsum	%	96.0	100.0	92.0	
Total production of pollutants produced	Tons	0	0	0	/
Total amount of mercury pollutants produced	Tons	0	0	0	/



# 05



## Promote Cohesion to Build An Excellent Team

Building an excellent and united team requires growing and moving forward together with employees, so as to achieve the Group's target of sustainable development. The Group adheres to the people-oriented principle, attaches great importance to the protection of employees' legitimate rights and interests and employee care, and strives to create a harmonious and inclusive working environment. Moreover, the Group implements the talent development strategy and continuously enhances the talent cultivation mechanism to develop a team equipped with knowledge, skills and innovation to stimulate rapid development.

Responding to material issues: Employee Rights and Benefits, Employee Development and Training

52 Protecting Employees' Rights and Benefits

53 Colorful Employee Activities

55 Human Resources Performance





## | Protecting Employees' Rights and Benefits

The Group strictly complies with relevant laws and regulations that have a significant impact on the Group relating to compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, diversity, anti-discrimination, other benefits and welfare, and prevention of child labor or forced labor, including but not limited to the *Labor Law of the PRC*, the *Labor Contract Law of the PRC*, the *Trade Union Law of the PRC*, the *Civil Code of the PRC* and the *Law of the PRC on the Protection of Minors*. The Group has formulated and implemented a human resources management system in accordance with the above laws and regulations, covering the management of employee recruitment, labor contract, promotion mechanism, compensation and benefits, working hours, dismissal, etc. During the Reporting Period, the Group did not violate the above labor and employment-related laws and regulations.

In the recruitment stage, the Group adheres to an open, fair and just talent competition and selection mechanism, and strictly reviews the information of candidates during the recruitment process, and resolutely objecting to hire child labor under 16 years old. If child labor is found, the Group will immediately deal with it in accordance with relevant laws and regulations, investigate and take remedial measures to prevent the incident from happening again. At the employment stage, employees have legally entered into labor contracts with the Group, specifying matters such as employees' remuneration and benefits, position and grounds for termination of employment. In addition, the Group advocates equal and diversified employment policies and does not discriminate against employees due to race, nationality, skin color, gender and other factors.

In terms of remuneration and other benefits, the Group follows the principle of fair distribution according to work and equal pay for equal work. Under the premise of efficiency and fairness, the Group implements systems such as salary points and annual salary system for leaders, and establishes an objective, fair, scientific and effective performance appraisal system for all employees. Based on the performance principle, the Group insists on giving priority to quality and efficiency and giving consideration to both efficiency and fairness, so that employees have the opportunity to obtain salary or position adjustment; In accordance with relevant national laws and regulations approved by the employees conference, the Group participates in social insurance such as pension, unemployment, medical care, work-related injury and maternity insurance, and pays social insurance premiums on time as required to ensure that employees enjoy various social insurance benefits and housing subsidies in accordance with relevant regulations. In addition, the Group purchases supplementary medical insurance and organizes regular occupational disease examinations for employees.

In terms of working hours and holidays, the Group implements a 40-hour working system per week with an average of no more than 8 hours per day, and takes national statutory holidays, vacation, home leave, marriage and funeral leave, maternity leave and family planning leave. If overtime working hours in weekdays and in rest days are required due to work reasons, the *Labor Contract Law of the PRC* and relevant internal regulations shall apply.

As of the end of the Reporting Period,  
The labor contract signing rate of the Group reached

100%

The additional commercial medical  
insurance coverage rate reached

100%

In addition, the Group has established an employee supervisor selection system in accordance with the *Company Law of the PRC* and internal articles and regulations to ensure that employees enjoy sufficient rights in corporate governance; the Group supports the labor union to carry out work in accordance with laws, listens to the opinions of employees through democratic forms such as employees' representatives meetings and labor union meetings on matters involving the vital interests of employees such as wages, benefits, labor safety and health, and social insurance, and cares about and values the reasonable needs of employees.

## | Emphasis on Talent Cultivation

The Group vigorously promotes the strategy of "developing a competitive enterprise of quality workforce" and proactively establishes the development strategy of talent cultivation and various plans, while mobilizing the enthusiasm, initiative and creativity of talents to provide strong talent support for the development of the Group. Each subsidiary of the Group has implemented the Group's talent strategy, adheres to people-oriented and lean management, and strives to provide wide-ranging and targeted training to employees of different positions by formulating tailored training plans on the basis of the actual needs of specific job requirements, the construction of talent team building and employees' career plan, so as to continuously improve the professional skills and knowledge level of employees.

The Group focuses on the following four aspects of work to meet the goal of talent cultivation:

- Develop clear training principles and training arrangements;
- Organize regular training for employees to implement training principles and training arrangements;
- Carry out mentor-apprentice mentoring work and strengthen "mentoring";
- Promote the training of position capability to improve the practical ability of employees continuously.



### Focus | Many Subsidiaries of the Group in Anhui Achieved Good Results in Technical Skills Competitions

From August 29 to September 1, 2022, the Anhui Province Vocational Skills Competition for the Full Business Process (Machine aspects) of Thermal Power Plants, cohosted by the work union of Huadian Anhui Regional Company, was successfully held. Thirty-five participants from seven power companies participated in the competition. After four days of intense competition, the participating employees of Huadian Anhui Regional Company won the first, second, third, fifth and sixth place in the individual competition.



Huadian's Winners of Vocational Skills Competition



## Focus

Huadian Sichuan Shuiluohe Company Limited Launched the Signing Ceremony for Mentor-Apprentice Program in 2022

On November 13, 2022, Huadian Sichuan Shuiluohe Company Limited carried out the 2022 new employee mentor-apprentice signing ceremony through the dual way of "online + offline" to guide the new employees' career planning. Huadian Sichuan Shuiluohe Company Limited gives full play to the role of the existing technical backbone and adopts a "one-to-one, one-to-many" mentor-apprentice model to strengthen the education and training of new employees and expand the technical backbone talent pool. The mentors of this year's mentor-apprentice activities are all technically competent from different positions in the production frontline, and can play a role of demonstration and leadership to the apprentices in terms of work attitude and level of performance.



Signing Ceremony for the Mentor-Apprentice Program

## Focus

Guangdong Huadian Pingshi Electric Power Plant Company Limited Empowers Its Development with the Spirit of Craftsmen

On September 1, 2022, Guangdong Huadian Pingshi Electric Power Plant Company Limited organized the fourth "Star Craftsman" accreditation meeting. For a long time, this company has started from culture, mechanism, measures and other aspects to create a solid foundation for the growth of craftsmen, adhered to the goal of enhancing employees' ability to innovate and create results, vigorously promoted the spirit of craftsmen, and gave full play to the role of exemplary leadership. Since 2019, a total of 43 Star Craftsmen of various levels have been selected.



Picture of the Accreditation Meeting

During the Reporting Period, Huadian Power International formulated and issued the *2022 Talent Development and Training Work Plan*, and carefully organized and carried out various training activities as required. Firstly, focusing on dual carbon goals, overseas mergers and acquisitions, the *Civil Code of the PRC* and other aspects, the Group educated and guided the cadres and employees of the headquarters to accurately grasp the opportunities and challenges, to fully understand the situation, and to further improve the strategic thinking ability, situation judgment ability, overall planning ability, and market control ability; Secondly, based on the annual goals and tasks of Huadian Power International, the Group further improved the comprehensive business level and management capabilities of cadres and employees in respect of the Group's core business, focusing on the *Work Safety Law of the PRC* (2021 revised edition), financial sharing center, compliance management and other aspects.

## Colorful Employee Activities

The Group proactively creates an energetic, active and united workplace to create a team with more cohesion and to stimulate the physical and psychological health of employees. The Group held a variety of cultural and sports activities every year to meet the spiritual and cultural needs of employees. In addition, the Group also held various competitions, such as skills competition, and created a platform for employees to show their skills and talent, hoping to continuously improve the professional skills and professional quality of employees through the competition.

## Focus

Guangdong Huadian Qingyuan Energy Company Limited Organized Activities on Women's Day

On March 6, 2022, Guangdong Huadian Qingyuan Energy Company Limited organized a Women's Day activity, and female employees made cakes by themselves. The diverse staff activities made the staff work and live happily, created a united and upward working atmosphere and improved the happiness of the staff.



Photos of Women's Day Activities

## Focus

Huadian Ningxia Company Limited actively Carries out Work Union Activities to Enrich the Cultural Life of Employees

In order to welcome the 20th CPC Congress, to create a strong atmosphere of low-carbon energy saving and green development within Huadian Ningxia Company Limited, and to further enhance team cohesion and execution, on June 21, 2022, all cadres and employees of Ningxia Company Limited gathered in the forest park and carried out walking activities. On August 12, this company organized staff fruit picking and cultural and sports activities. On the morning of August 28, this company held a staff badminton competition in Ningxia Sport Stadium.



Pictures of Employee Activities in Huadian Ningxia Company Limited





Human Resources Performance

Indicators	2022 (Unit: Persons)	2021 (Unit: Persons)	2020 (Unit: Persons)
Total number of employees	24,873	25,266	27,409
Total employees by gender			
Male	19,344	19,404	21,375
Female	5,529	5,862	6,034
Total employees by position			
Management	5,210	5,216	6,497
Professional technical position	2,888	2,851	2,189
Production position	15,792	16,146	17,703
Service position	842	892	929
Other position	141	161	91
Total employees by age group			
24 years old and below	1,552	1,430	1,378
25-29 years old	3,058	3,310	3,866
30-34 years old	3,388	3,280	3,733
35-39 years old	2,230	2,233	2,577
40-44 years old	2,988	3,319	3,992
45-49 years old	4,741	5,187	5,554
50-54 years old	4,599	4,250	4,178
55 years old and above	2,317	2,257	2,131
Total employees by region			
Beijing	119	120	113
Shandong	11,106	11,355	11,759
Hubei	2,579	2,696	2,685

Anhui	1,187	1,208	1,198
Ningxia	2	71	1,047
Sichuan	1,469	1,504	1,512
Zhejiang	1,059	1,093	1,126
Hebei	2,343	2,438	2,625
Henan	1,019	1,035	1,053
Guangdong	1,309	1,189	1,181
Tianjin	691	682	667
Shanxi	467	474	1,811
Inner Mongolia	46	30	141
Chongqing	404	386	Not available
Hunan	985	917	Not available
Others	88	68	491
Total employees by education background			
Master's degree and above	1,077	1,061	1,016
Bachelor's degree	12,403	12,027	12,274
College certificate	7,190	7,594	8,380
Technical secondary school certificate	2,362	2,567	3,331
Vocational school certificate	559	596	668
High school diploma and below	1,282	1,421	1,740
Total employees by employment type			
Permanent employee	24,755	25,139	27,116
Contractual employee	118	127	293



Indicators <sup>6</sup>	2022 (Unit: Persons (%))	2021 (Unit: Persons (%))	2020 (Unit: Persons)
Employee turnover by gender (rate)			
Male	159 (0.8)	117 (0.6)	207
Female	36 (0.7)	30 (0.5)	29
Employee turnover by age group (rate)			
24 years old and below	24 (1.5)	23 (1.6)	41
25-29 years old	63 (2.1)	57 (1.7)	89
30-34 years old	64 (1.9)	38 (1.2)	60
35-39 years old	22 (1.0)	10 (0.4)	20
40-44 years old	9 (0.3)	7 (0.2)	7
45-49 years old	8 (0.2)	9 (0.2)	11
50-54 years old	5 (0.1)	1 (0.0)	6
55 years old and above	0 (0.0)	2 (0.1)	2
Employee turnover by region (rate)			
Beijing	0 (0.0)	1 (0.8)	0
Shandong	17 (0.2)	18 (0.2)	31
Hubei	27 (1.0)	24 (0.9)	26
Anhui	12 (1.0)	5 (0.4)	10
Ningxia	0 (0.0)	0 (0.0)	5
Sichuan	5 (0.3)	6 (0.4)	17
Zhejiang	12 (1.1)	5 (0.5)	6
Hebei	9 (0.4)	6 (0.2)	20
Henan	39 (3.8)	32 (3.1)	12

<sup>6</sup> The data of employee turnover rate was collected and disclosed since the Reporting Period. The breakdown of the employee turnover rate (i.e., employee turnover rate by gender, age group and region) is calculated by dividing the number of employees turnover in the relevant category by the total number of employees in the relevant category in the current year.

Guangdong	36 (2.8)	11 (0.9)	61
Tianjin	6 (0.9)	5 (0.7)	7
Shanxi	4 (0.9)	3 (0.6)	20
Inner Mongolia	0 (0.0)	0 (0.0)	2
Chongqing	17 (8.7)	24 (6.2)	Not available
Hunan	11 (5.6)	7 (0.8)	Not available
Others	0 (0.0)	0 (0.0)	19

Indicators	2022 (Unit: Person-times)	2021 (Unit: Person-times)	2020 (Unit: Person-times)
Total trained employees by training type			
Training provided by China Huadian or superior organizations	10,756	10,015	16,184
Qualification training	7,419	12,662	9,531
Adaptability training	64,099	83,368	70,664
Technical level training	39,608	10,744	27,894
Continuous training	708	573	2,172
Other training	94,528	52,947	67,984
Permanent employee	24,755	25,139	27,116
Contractual employee	118	127	293



Indicators <sup>7</sup>	2022 (Unit: Number of employees (%))	2021 (Unit: Number of employees (%))
Total employees trained by gender (percentage)		
Male	18,767 (77.9)	18,304 (75.9)
Female	5,330 (22.1)	5,812 (24.1)
Total employees trained by employee type (percentage)		
Company leader (including director and supervisor)	445 (1.8)	485 (2.0)
Professional manager	4,405 (18.3)	4,641 (19.2)
Professional technician	3,106(13.1)	2,682 (11.1)
Skilled personnel	16,087(66.8)	16,308 (67.6)

<sup>7</sup> The number and percentage of employees trained was collected and disclosed since the Reporting Period. The breakdown of the percentage of employees trained (i.e., percentage of employees trained by gender and employee category) is calculated by dividing the number of employees trained in the relevant category by the total number of employees trained in the current year.

Indicators	2022 (Unit: Hours)	2021 (Unit: Hours)	2020 (Unit: Hours)
Average training hours per employee by gender			
Male	86	78	76
Female	83	74	74
Average training hours per employee by employee category			
Company leader (including director and supervisor)	122	119	134
Professional manager	85	77	74
Professional technician	82	74	74
Skilled personnel	85	77	74





# 06



## Implement Caring Spirit and Convey Enterprise Warmth

The Group keeps in mind the responsibility as a centrally administered SOE, promotes the spirit of “caring everywhere”, actively understands the needs of the community and considers the interests of the community, and serves the society with sincere altitude and sincere services. In this year, the Group consciously devoted itself to the cause of rural revitalization, while solidly promoting various community volunteer services, contributing love and serving the public with practical actions, and striving to convey the “Huadian warmth” to all over the country.

01 Support Rural Revitalization

02 Care about the Community





## | Support Rural Revitalization

The Group responds to the national strategy, focuses on consolidating and expanding the results of poverty alleviation, consciously devotes itself to the course of rural revitalization and practiced social responsibility and corporate responsibility with practical actions.

### Focus | Huadian Tengzhou Xinyuan Thermal Power Company Limited Carried out the "100 Enterprises Connecting with 100 Villages" Paired Assistance Activity

On January 21, 2022, in order to fully harness enterprises' driving and supporting role, Huadian Tengzhou Xinyuan Thermal Power Company Limited organized and carried out the "100 Enterprises Connecting with 100 Villages" Paired Assistance Activity, and extended Spring Festival greeting to the families of poor Party members in Qiulou Village. The Party member volunteer service team first held exchanges and discussions with village cadres to gain an in-depth understanding of the basic situation of the poor villages they helped and found a starting point for the help work. After the exchanges and discussions, the volunteer service team successively sent daily necessities to three paired economically disadvantaged Party member families and helped clean the courtyard.



Huadian Tengzhou Xinyuan Thermal Power Company Limited's Paired Assistance Activity

### Focus | Huadian Zouxian Plant Carried out Caring for Students Activity in Shiqiang Town

In 2022, Huadian Zouxian Plant joined hands with Shiqiang town to build the "Colorful Hut", aiming to provide a warm and loving activity place for children. In conjunction with the series of activities to learn from Lei Feng, volunteers from Huadian Zouxian Plant sent left-behind children with books and stationery and carried out games such as charades and sandbag throwing. At the same time, Huadian Zouxian Plant brought money donations and daily necessities, books and clothes for local left-behind children by raising donations and passing on warmth through practical actions.



Huadian Zouxian Plant Caring for Students Activity



## | Care about the Community

The Group actively supports employees to participate in public welfare undertakings and brings care to the community by carrying out various employee volunteer activities.

### Focus | Huadian Power International Fengjie Plant Held Safe Electricity Publicity and Home Appliance Maintenance Activities

In March, Huadian Power International Fengjie Plant and a number of organisations jointly launched a voluntary assembly activity at Binhe Park Square, ZhuYi Town, providing free repairment of home appliances for residents, publicizing knowledge of safe use of electricity, to further promote the volunteer spirit of "dedication, love, mutual assistance, progress".



Huadian Power International Fengjie Plant Interacted with Citizens

### Focus | Huadian Longkou Power Generation Company Limited Held "6.5" Environment Day Publicities Activities

On June 5, Huadian Longkou Power Generation Company Limited launched a series of publicity activities around "Building a Clean and Beautiful World Together". Volunteers took various publicity forms such as hanging banners, distributing leaflets and eco canvas bags, onsite quiz, watching the 2022 World Environment Day theme promotional video *Only One Earth*, and carrying out "I will teach a lesson", to publicize the measures, progress and effectiveness of this company's key environmental protection work.



the World Environment Day Publicities Activities

### Focus | Sichuan Huadian Luding Hydropower Company Limited Practiced Social Responsibility and Helped Earthquake Relief

After a 6.8-magnitude earthquake jolted Luding, Sichuan on September 5, 2022, Sichuan Huadian Luding Hydropower Company Limited practiced its social responsibility as a centrally administered SOEs and assisted in the local earthquake relief work while ensuring the safe and stable operation of the power station. The relief work included organizing professional construction and rescue teams and large mechanical equipment to unblock the roads of Lan'an Village; Taking the initiative to contact with the local government and using the installation room of the main plant of the power station as a temporary storage point for earthquake relief materials, assisting in the transfer of 30,125 pieces of stored materials. In response to the call from the Ganzi Tibetan Autonomous Prefecture Earthquake Relief Command, this company organized professional technicians to carry out power rescue in the epicenter of the earthquake, Detuo Town, and restored power to more than 800 households in the disaster area, while all employees of this company donated RMB 23,840 for the earthquake in Luding. On 14 September, the Ganzi Prefecture CPC Committee and Ganzi Prefecture People's Government issued a "Earthquake Rescue and Disaster Relief" certificate of honor to Sichuan Huadian Luding Hydropower Company Limited, expressing praise and gratitude for the company's earthquake relief work.



This Company Organized and Coordinated the Transportation of Disaster Relief Supplies



## Look forward to the Future

The year 2023 is the opening year of the comprehensive implementation of the spirit of the 20th Party Congress and a key year to start a new journey of high-quality development of the Group. The Group will focus on:

Strengthening the supervision of operation to firmly enhance the efficiency level of the Group; Strengthening the structural adjustment to accelerate the transformation and development of the Group; Strengthening the compliance management to ensure the standardized operation as a listed company; Strengthening the management of hidden dangers to ensure the safety and reliability of energy supply; Strengthening the reform and innovation to accelerate the realization of a world-class enterprise.

### Strengthen Operation Management and Steadily Improve Efficiency

The Group firmly regards compliance with laws and regulations as the basic principle of its production and operation activities and will continuously promote the modernization of its corporate governance system and governance capability. At the same time, the Group will strengthen internal control and compliance risk management and explore the establishment of a fully integrated internal control and compliance inspection model, which enables the coordination of offline and online channels and the integration of on-site and remote manners. Through real-time inspections in the whole process, from multiple angles and in all directions, the Group will prevent risks in a comprehensive and coordinated manner.

### Deepen Quality and Efficiency Improvement and Promote Green Development

The Group will deepen ecological and environmental protection governance, conscientiously implement the Central Government's *Opinions on Further Promoting the Nationwide Battle to Prevent and Control Pollution*, fully fulfill the environmental protection management responsibilities of capitalists, and ensure that pollutants are discharged in accordance with laws and meet standards; closely track national environmental protection policies, and urge relevant units to strengthen deep optimization of water usage and water pollution prevention and treatment of fugitive emissions to ensure timely completion and compliance with environmental protection requirements. The Group will continue to promote the efficiency improvement of coal power and vigorously carry out digital means to promote the optimization of energy efficiency level.

### Consolidate Safe Production and Ensure Energy Supply

The Group will strive for safe and stable supply, continue to strengthen the implementation of the production safety responsibility system of each position, pay close attention to the construction of the dual prevention mechanism of safety risks and safety hazards, continue to deepen the construction of an intrinsically safe enterprise, carry out in-depth production safety's hidden danger investigation and management and "production safety month" activities, and further strengthen the foundation of production safety; At the same time, the Group will pay great attention to the major safety hazards in the system and effectively prevent the safety accidents from happening.

### Practice and Demonstrate Corporate Social Responsibility

The Group will implement the strategic plan for rural revitalization in the "*The Recommendations of the Central Committee of the Communist Party of China for the 14th Five-Year Plan for Economic and Social Development and the Long-range Goals Through 2035*", continue to calibrate its assistance initiatives, make targeted efforts, focus on the linkage between poverty alleviation and development, and take practical actions to consolidate achievements in poverty alleviation and promote the economic and social development of rural areas.

In 2023, the Group will adhere to the general keynote of seeking progress in a stable manner, comprehensively implement the new development concept, firmly seize the primary task of high-quality development, further concentrate its efforts, strengthen its role, ensure the full completion of the annual objectives and tasks, and make every effort to build a strong and large first-class energy listed company.

## SEHK's Guide Index

Mandatory Disclosure Requirements	Description	Relevant Chapter in the Report or Explanation
Governance Structure	A statement from the board containing the following elements: (i) a disclosure of the board's oversight of ESG issues. (ii) the board's ESG management approach and strategy, including the process used to evaluate, prioritise and manage material ESG-related issues (including risks to the issuer's businesses); and (iii) how the board reviews progress made against ESG-related goals and targets with an explanation of how they relate to the issuer's businesses.	Deepen the Governance System by Practicing Ethics and Integrity
Reporting Principles	A description of, or an explanation on, the application of the following Reporting Principles in the preparation of the ESG report: Materiality: the ESG report should disclose: (i) the process to identify and the criteria for the selection of material ESG factors; (ii) if a stakeholder engagement is conducted, a description of significant stakeholders identified, and the process and results of the issuer's stakeholder engagement. Quantitative: information on the standards, methodologies, assumptions and/or calculation tools used, and source of conversion factors used, for the reporting of emissions/energy consumption (where applicable) should be disclosed. Consistency: the issuer should disclose in the ESG report any changes to the methods or KPIs used, or any other relevant factors affecting a meaningful comparison.	About the Report
Reporting Boundary	A narrative explaining the reporting boundaries of the ESG report and describing the process used to identify which entities or operations are included in the ESG report. If there is a change in the scope, the issuer should explain the difference and reason for the change.	About the Report
General Disclosures and KPIs	Description	Relevant Chapter in the Report or Explanation
Environmental		
Aspect A1: Emissions		
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 air and greenhouse gas emissions, discharges into water and land, and generation of hazardous and non-hazardous waste.	Promote Transformation and Lay a Green Foundation.
KPI A1.1	The types of emissions and respective emissions data.	Promote Transformation and Lay a Green Foundation.
KPI A1.2	Direct (Scope 1) and energy indirect (Scope 2) greenhouse gas emissions (in tonnes) and, where appropriate, intensity (e.g., per unit of production volume, per facility).	Promote Transformation and Lay a Green Foundation.
KPI A1.3	Total hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g., per unit of production volume, per facility).	Promote Transformation and Lay a Green Foundation.
KPI A1.4	Total non-hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g., per unit of production volume, per facility).	Promote Transformation and Lay a Green Foundation.



General Disclosures and KPIs	Description	Relevant Chapter in the Report or Explanation
KPI A1.5	Description of emission target(s) set, and steps taken to achieve them.	Promote Transformation and Lay a Green Foundation.
KPI A1.6	Description of how hazardous and non-hazardous wastes are handled, and a description of reduction target(s) set, and steps taken to achieve them.	Promote Transformation and Lay a Green Foundation.
Aspect A2: Use of Resources		
General Disclosure	Policies on the efficient use of resources, including energy, water and other raw materials.	Promote Transformation and Lay a Green Foundation.
KPI 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).	Promote Transformation and Lay a Green Foundation.
KPI A2.2	Water consumption in total and intensity (e.g., per unit of production volume, per facility).	Promote Transformation and Lay a Green Foundation.
KPI A2.3	Description of energy use efficiency target(s) set and steps taken to achieve them.	Promote Transformation and Lay a Green Foundation.
KPI A2.4	Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency target(s) set and steps taken to achieve them.	Promote Transformation and Lay a Green Foundation.
KPI A2.5	Total packaging material used for finished products (in tonnes) and, if applicable, with reference to per unit produced.	Due to the business nature of the Group, this is not applicable to the Group
Aspect A3: The Environment and Natural Resources		
General Disclosure	Policies on minimizing the issuer's significant impact on the environment and natural resources.	Promote Transformation and Lay a Green Foundation.
KPI A3.1	Description of the significant impacts of activities on the environment and natural resources and the actions taken to manage them.	Promote Transformation and Lay a Green Foundation.
Aspect 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.	Promote Transformation and Lay a Green Foundation.
KPI 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.	Promote Transformation and Lay a Green Foundation.
<i>Social</i>		
Aspect B1: Employment		
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 compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, diversity, anti-discrimination, and other benefits and welfare.	Promote Cohesion to Build an Excellent Team.
KPI B1.1	Total workforce by gender, employment type (for example, full-or part-time), age group and geographical region.	Promote Cohesion to Build an Excellent Team.

General Disclosures and KPIs	Description	Relevant Chapter in the Report or Explanation
KPI B1.2	Employee turnover rate by gender, age group and geographical region.	Promote Cohesion to Build an Excellent Team.
Aspect 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.	Provide Stable Power Supply and Ensure Safe Operations
KPI B2.1	Number and rate of work-related fatalities occurred in each of the past three years including the reporting year.	Provide Stable Power Supply and Ensure Safe Operations
KPI B2.2	Lost days due to work injury.	Provide Stable Power Supply and Ensure Safe Operations
KPI B2.3	Description of occupational health and safety measures adopted, and how they are implemented and monitored.	Provide Stable Power Supply and Ensure Safe Operations
Aspect B3: Development and Training		
General Disclosure	Policies on improving employees' knowledge and skills for discharging duties at work. Description of training activities.	Promote Cohesion to Build an Excellent Team.
KPI B3.1	The percentage of employees trained by gender and employee category (e.g., senior management, middle management).	Promote Cohesion to Build an Excellent Team.
KPI B3.2	The average training hours completed per employee by gender and employee category.	Promote Cohesion to Build an Excellent Team.
Aspect B4: Labor Standards		
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 preventing child and forced labor.	Promote Cohesion to Build an Excellent Team.
KPI B4.1	Description of measures to review employment practices to avoid child and forced labor.	Promote Cohesion to Build an Excellent Team.
KPI B4.2	Description of steps taken to eliminate such practices when discovered.	Promote Cohesion to Build an Excellent Team.
Aspect B5: Supply Chain Management		
General Disclosure	Policies on managing environmental and social risks of the supply chain.	Well-run Operations and Promote Efficient Development
KPI B5.1	Number of suppliers by geographical region.	Well-run Operations and Promote Efficient Development
KPI B5.2	Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, and how they are implemented and monitored.	Well-run Operations and Promote Efficient Development



General Disclosures and KPIs	Description	Relevant Chapter in the Report or Explanation
KPI B5.3	Description of practices used to identify environmental and social risks along the supply chain, and how they are implemented and monitored.	Well-run Operations and Promote Efficient Development
KPI B5.4	Description of practices used to promote environmentally preferable products and services when selecting suppliers, and how they are implemented and monitored.	Well-run Operations and Promote Efficient Development
Aspect B6: Product Responsibility		
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 health and safety, advertising, labelling and privacy matters relating to products and services provided and methods of redress.	Provide Stable Power Supply and Ensure Safe Operations; due to the business nature of the Group's, health, advertising and labelling matters relating to the electricity supplied are not applicable to the Group
KPI B6.1	Percentage of total products sold or shipped subject to recalls for safety and health reasons.	Due to the business nature of the Group, this is not applicable to the Group
KPI B6.2	Number of products and service-related complaints received and how they are dealt with.	Provide Stable Power Supply and Ensure Safe Operations
KPI B6.3	Description of practices relating to observing and protecting intellectual property rights.	Well-run Operations and Promote Efficient Development
KPI B6.4	Description of quality assurance process and recall procedures.	Due to the business nature of the Group, this is not applicable to the Group
KPI B6.5	Description of consumer data protection and privacy policies, how they are implemented and monitored.	Provide Stable Power Supply and Ensure Safe Operations
Aspect B7: Anti-corruption		
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 bribery, extortion, fraud and money laundering.	Well-run Operations and Promote Efficient Development
KPI 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.	Well-run Operations and Promote Efficient Development
KPI B7.2	Description of preventive measures and whistle-blowing procedures, how they are implemented and monitored.	Well-run Operations and Promote Efficient Development
KPI B7.3	Description of anti-corruption training provided to directors and staff.	Well-run Operations and Promote Efficient Development
Aspect B8: Community Investment		
General Disclosure	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.	Implement Caring Spirit and Convey Enterprise Warmth

General Disclosures and KPIs	Description	Relevant Chapter in the Report or Explanation
KPI B8.1	Focus areas of contribution (e.g. education, environmental concerns, labor needs, health, culture, sport).	Implement Caring Spirit and Convey Enterprise Warmth
KPI B8.2	Resources contributed (e.g., money or time) to the focus area.	Implement Caring Spirit and Convey Enterprise Warmth





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