



點亮智慧低碳未來  
**Lighting Up**  
a Low-Carbon  
Smart Future

環境、社會及管治報告  
Environmental, Social and  
Governance Report  
**2023**





# Light Up Our Future





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# CHAIRMAN'S STATEMENT



In 2023, as the national economy rebounded, Huaneng International seized the opportunities, gathered our strength, and forged ahead with great resolve to push the Company's high-quality development to a new level. The Company adhered to the core pursuit of steady progress and proactive advancement and vigorously promoted the "three major transformations" of quality, efficiency, and motivation. We focused on the "three major battles" of quality and efficiency improvement, transition and development, and risk prevention and control, to complete the tasks of "three major guarantees" in achieving loss-to-profit turnaround of the coal-fired electricity sector, putting new energy into operations, and ensuring no major risks occurred. We have achieved significant results and outstanding highlights in various areas.

**Fulfilling responsibilities with dedication to show the devotion.** In 2023, the Company consistently treated energy security and ensuring supply as significant political responsibilities, fully leveraging its role as the “ballast” and “stabilizer” for electricity and heat supply. We successfully overcame severe challenges including extreme weather and natural disasters and ensured energy supply and safety and security service during important time periods and major events.

**Demonstrating remarkable results in outstanding operations.** In 2023, the Company steadfastly pursued stable growth, emphasizing coordinated efforts in supply increase, price stabilization, cost control, and loss mitigation. Market expansion capabilities were enhanced, yielding fruitful results in business operations, and efforts to overcome challenges were intensified. Both the Company’s overall performance and the coal-fired electricity sector achieved loss-to-profit turnaround and significant improvement, with Tuas Power’s operation efficiency experiencing a breakthrough growth.

**Embarking on a new chapter of transformational development.** In 2023, the Company adhered to the “carbon peaking and neutrality” goal and focused on building a new type of power system with new energy as the mainstay. The development of new energy accelerated as historical highs were achieved in approvals, construction, and production scale. We strictly control the increment of coal-fired power generation by deploying coal-fired power generation units with large capacity and retiring units with small capacity simultaneously. The allocation of supporting and regulating coal-fired power units was also optimized to secure backup energy supply.

**Showcasing prowess in technological innovation.** In 2023, the Company persisted in serving national strategic needs and vigorously promoted breakthroughs in key core technologies, continuously enhancing core competitiveness. Significant achievements were made in major technological research projects such as key technology in offshore wind power and high-temperature resistant materials, and the promotion and application of a batch of domestically produced substitutes such as DCS accelerated.

**Injecting new energy into corporate governance.** In 2023, the Company established a clear workplan for corporate governance, which focus on enhancing core functions and improving core competitiveness. Various tasks such as achieving first-class standards, improving the quality of listed companies, deepening transformation, and enhancing compliance were interconnected and promoted, aiming to build a modern state-owned enterprise that meets the requirements of Chinese-style modernization.

**Adding momentum to capital operations.** In 2023, the Company leveraged the financing platform of listed companies, further utilized its existing thermal power assets, and successfully completed the issuance of REITs-like products, setting multiple industry records for first issuances and optimal interest rates, and making positive contributions to the acceleration of green and low-carbon transformation of the Company. The Company’s capital operation and financing work won honors such as the Financing Planning Award and Merger and Restructuring Award from national-level property rights exchanges for five consecutive years.

**Fulfilling responsibilities to create a better world.** In 2023, the Company adhered to the harmonious development concept of “serving the country, benefiting the society, seeking win-win outcomes, and growing together.” We earnestly fulfilled social responsibilities, continuously provided high-quality electric power services, facilitated the implementation of the national rural revitalization strategy, actively participated in the Belt and Road Initiative, and brought harmonious and win-win dynamics to the society.

We keep our aspirations and mission in mind as we move forward. 2024 is a crucial year for comprehensively implementing the spirit of the 20th National Congress of the Communist Party of China. As a leading listed company in the power generation industry, Huaneng International always holds the “great cause of the nation” in its heart, adheres to the general principle of seeking progress while ensuring stability. It continuously demonstrates greater achievements in serving national strategies, ensuring energy security, practicing energy revolution, promoting ecological civilization, and fully taking advantages of the resources from domestic and international markets, making great contributions to China’s modernization with Huaneng practices.

**Wangkui**

Chairman  
Huaneng Power International, Inc.





# 02

*ABOUT US*

# About Us

16 PEACE, JUSTICE  
AND STRONG  
INSTITUTIONS



## 2.1 Company Profile

Huaneng Power International, Inc. (“Huaneng International”, “Huaneng” “the Company” or “We”) was incorporated on June 30, 1994. The core business of the Company is, by making use of modern technology and equipment and also financial resources available domestically and internationally, to develop, construct, operate and manage power plants throughout China. The Company is one of the China’s largest listed power generation companies and is the first power generation company in China to list in New York, Hong Kong and Shanghai simultaneously.

The Company is committed to be a world first-class listed power company, always adheres to providing adequate, reliable and eco-friendly power and high quality energy services for the community, as well as to system, technology and management innovations. The Company was the pioneer and has created various milestones within the domestic power industry in areas such as power technology advancement and power plant construction and management, which facilitated the great-leap forward development of the power business and technological advancement of the power station equipment manufacturing industry in China, and also contributed to the improvement of technical and management standards of domestic power generation enterprises.

Throughout the years, with dedicated efforts, the Company has expanded successively with steady growth in competitive strengths. The success of the Company is attributable to its various advantages, including advantages in scale and equipment, advantages in positive transformation to low carbon, clean energy, advantages in scientific and technological innovation and environmental protection, advantages in geographic layout of power plants, strong support from major shareholders, sound corporate governance structure, advantages in market reputation, extensive experience in the capital markets, advantages in overseas development, staff with high calibre and professional management as well as strong support from major shareholders.



# 135,655 MW

As at 31 December 2023,  
Controlled Installed Capacity



# 31.24 %

Installed Capacity of Low-carbon  
Clean Energy Installation Reached



As of December 31, 2023, the Company had controlled installed capacity of 135,655 MW, and low carbon clean energy installed capacity accounted for 31.24%. The Company's domestic power plants are located in 26 provinces, autonomous regions and municipalities. The Company wholly owns a power company in Singapore and invests in a power company in Pakistan.

In 2023, the Company won the awards of the “Best Listed Company” (2023最佳上市公司) award and the “Annual Special Award: 2023 Listed Company Awards of Excellence” (年度特別獎－2023卓越上市公司) of the 13th China Securities Golden Bauhinia; and received an A grade rating in the information disclosure assessment from the SSE; and won the “Best Investor Relations Management Listed Company” (最佳投資者關係管理上市公司) in the Crystal Ball Award by the Securities Market Weekly. The Company was included in the “Best Practice Case of Corporate Governance in 2023” (2023年公司治理最佳實踐案例) and the “Best Practice Case of the Board of Listed Companies in 2023” (2023年上市公司董事會最佳實踐案例) by China Association for Public Companies. “Outstanding Cases of Digital Transformation in Public Companies” (2023年上市公司數字化轉型優秀案例) and “one of the 100 Best Practice Cases for Implementing the Belt and Road Initiative over the Past Decade” (共建「一帶一路」十年百篇最佳實踐案例) by the China Association for Public Companies. The Company's ESG practice has been selected as one of the “ESG Best Practice Case of Listed Companies in 2023” (上市公司ESG最佳實踐案例) for the second consecutive year by the China Association for Public Companies, and was included in the Almanac of the Chinese Listed Company (2022)《中國上市公司年鑒(2022)》. The Company has received remarkable results in the 2023 ESG rating of listed central state-owned enterprises by the State-owned Assets Supervision and Administration Commission of the State Council (SASAC) and was selected for the “the Central Enterprises ESG · Vanguard 100 Index” (央企ESG·先鋒100指數). The various honors received represent the compliment from the capital market for the Company's continuous high-quality development, the continuous improvement of enterprise value and the prospect of low-carbon transformation since the 14th Five-Year Plan, indicating the Company's positive brand image. The external auditor has issued standard audit reports on the Company's internal control without, reservation for eighteen consecutive years.

## 2.2 Corporate Governance

As a public company listed both domestically and internationally, the Company conscientiously implements the regulatory requirements of its listing place and proactively accepts the supervision of investors. Since its establishment, the Company has been continuously completing and improving its modern governance system and capacity. The Company has established and improved a corporate governance structure consisting of the shareholders' general meeting, the Board, the Supervisory Committee, and management team and built an operating mechanism with clear separation of powers and responsibilities, mutual checks and balances and coordinated operations between proprietorship, decision-making power, supervisory power, and management power, ensuring the effective enforcement of the decision making power of the shareholders' general meeting and the Board, and the supervisory power of the Supervisory Committee, ensuring the efficient and compliant management of the management team. After years of exploration and practice, the Company has built up a normal, sound and effective corporate governance system that caters for the development of the Company.



the Company has built up a set of comprehensive and efficient corporate governance system, and formulated more than 20 management systems including the Rules of Procedures for the General Meetings (《股東大會議事規則》), the Rules of Procedures for the Board of Directors (《董事會議事規則》), Rules of Procedures for the Supervisory Committee (《監事會議事規則》), Working Rules for the General Manager (《總經理工作細則》), working rules for special committees and working rules for independent directors, which clearly defined the job description responsibilities including the term of reference, organization structuring, procedures, working regulations of general meetings, Board of Directors and Supervisory Committee, etc. In 2023, the Company accelerated the construction of a modern enterprise system with Chinese characteristics, and continuously improve the institutional system with the Articles of Association (《公司章程》) as the core, the rules of procedures as the main body and the special systems as the supporting, formulated and implemented the Measures for Management of Authorization by the Board of Directors (《董事會授權管理辦法》), and revised basic management systems such as the Regulations on Decision-Making Matters in Relation to the “Three Majors and One Large” (《「三重一大」事項決策管理規定》), the Rules on Information Disclosure Management (《信息披露管理規定》) and the Rules on Insider Information Management (《內幕信息知情人管理規定》) and the Rules on Related Party Transactions Management (《關聯交易管理規定》) providing an important guarantee for further improving the system construction and continuously consolidate the foundation of the standard operation of the Company.

During the year, the Company held 2 general meeting, 10 meetings of the Board of Directors, 6 meetings of the Supervisory Committee, 12 meetings of special committees, and 3 special meetings of independent directors, and reviewed more than one hundred important proposals such as regular reports, profit distribution plan, the continuing connected transactions and engagement of auditors. All the Directors, Supervisors and senior management consciously comply with the relevant national laws and regulations and the regulatory requirements of the jurisdictions in which the Company’s shares are listed, performed their duties diligently and conscientiously, attended the relevant meetings on time, carefully considered and approved relevant matters, made decisions on all the proposals in a scientific and cautious manner, and effectively promoted the implementation of various work.

In 2023, the term of the 10th Board of Directors expired. In accordance with the Articles of Association (《公司章程》), the Management Measures for Independent Directors of Listed Companies (《上市公司獨立董事管理辦法》), the Hong Kong Stock Exchange’s policy on Board diversity and other regulatory requirements, and with strong support from shareholder units, the Company conducted thorough consultations and organization, and completed the election of the new Board of Directors, including the chairman, vice chairman, and directors, as well as the appointment of the chairmen and members of various specialized committees. The new Board of Directors is reasonably structured, empowered by professional configuration, and highly diversified, meeting the regulatory requirements of the listing jurisdiction. Board members possess solid professional skills, rich management experience, and good professional ethics, satisfying the needs of the Company’s high-quality development. The transition from the old Board to the new one was smooth and seamless, laying a solid foundation for the continuous improvement of the Company’s governance level.

## 2.3 Company Development Strategy

The Company fully implements the new development philosophy of “innovation, coordination, green, openness and sharing”, adheres to the focus on quality and efficiency, integrates energy security and green development, and comprehensively promotes high-quality development, and strives to increase the proportion of low-carbon and clean energy installed capacity to about 45% by the end of the 14th Five-Year Plan period, and aims to further develop the Company into a well-governed, excellently operated, energy-saving, and world-class listed power generation company with outstanding market value.

The Company adheres to the new energy safety strategy of “Four Revolutions and One Cooperation”, promotes the green and low-carbon transformation of energy with the aims of peak carbon emission and carbon neutrality, prioritizes the quality and efficiency. Adhering to the principle of “paying equal attention to centralization and distribution, and giving priority to independent construction”, the Company has further built large-scale clean energy production bases with the idea of “Three-types and Three-isations” namely “base-type, clean-type and complementary-type together with intensification, digitalisation and standardisation” in the “Three North” areas, Liaoning, Shandong, Jiangsu, Zhejiang, Guangdong, other coastal areas, and areas with good new energy resources in central China, promotes the leap-forward development of new energy, promotes the optimisation and upgrading of coal fired power structure, and prefers the opportunities for development of gas-fired power and other clean energy sources for power generation. The Company supports high-quality development with scientific and technological innovation, adheres to the strategy of serving the country, adheres to the major needs of the Company’s development, adheres to digital and intelligent development, deepens the ability of independent innovation, and implements scientific and technological demonstration projects. The Company insists on strengthening and improving comprehensive energy services, actively adapting to the transformation of the national energy supply structure, actively developing strategic emerging industries through digitalization, and providing diversified supply and energy services around core industries, adhering to the new development pattern of domestic and international dual circulation, strengthening international cooperation, enhancing the efficient operation of overseas assets, improving the anti-risk capability and profitability of overseas assets. The Company adheres to the guidance of improving efficiency and creating value, consolidates the management foundation, enhances management efficiency, comprehensively improves the management and control level of the Company’s modern operation, improves corporate governance, enhances the Company’s brand value, and earnestly fulfils its social responsibilities.

## 2.4 Company Philosophy

Building a “Three-color” Company is our sacred mission, a cultural form that is in line with and corresponds to our strategic goals. The concept of building a “Three-color” company summarizes and extends the spirit of the enterprise and the experience of reform and development over the years.

“Red” represents the nature of Huaneng, the foundation of its existence, and the essence of the “Three-color” concept. Building a “Red” company is the fundamental attitude and spiritual realm of Huaneng, a concentrated manifestation of Huaneng’s historical mission to contribute to the development of the national economy, social progress, and the improvement of people’s living standards. It vividly reflects Huaneng’s responsibilities. “Green” symbolizes the coordinated development and harmony between humanity and the natural environment. Building a “Green” company indicates Huaneng’s adherence to a humanistic concept and a scientific attitude of respecting science, talents, technology, protecting the environment, and promoting sustainable social development. “Blue” is the color of Huaneng’s logo, symbolizing its commitment to keeping pace with the time, learning and innovating, and remaining open to the world. By absorbing all advanced technologies and cultures from around the world to strengthen Huaneng’s cause, it demonstrates the broad-mindedness of Huaneng employees and their ambition to become a world-class enterprise.

<b>“Three-color Culture” Missions</b>	<ul style="list-style-type: none"> <li>■ Becoming a “red” company that serves national strategies, ensures energy security, and serves socialism with Chinese characteristics</li> <li>■ Becoming a “green” company that carries out energy revolution, helps construct an ecological civilization, and provides clean energy and power to satisfy people’s needs for living beautiful lives</li> <li>■ Becoming a “blue” company that participates in global energy stewardship, serves the “Belt and Road” construction and positively contributes to building a community of shared future for mankind</li> </ul>
<b>Corporate Core Values</b>	<ul style="list-style-type: none"> <li>■ Upholding integrity, focusing on cooperation</li> <li>■ Innovating continuously, progressing actively</li> <li>■ Creating achievements, serving the Country</li> </ul>
<b>Corporate Target</b>	<ul style="list-style-type: none"> <li>■ Developing itself to become an international leading listed power generation Company</li> </ul>
<b>Corporate Responsibilities</b>	<ul style="list-style-type: none"> <li>■ Provision of sufficient, reliable and environment-friendly electricity to the society</li> <li>■ Strive for delivery of long-term, stable and increasing returns to shareholders</li> <li>■ Support the comprehensive development of employees to establish self-achievements</li> </ul>
<b>Corporate Spirits</b>	<ul style="list-style-type: none"> <li>■ Spirit of professional dedication – overcoming all hardships and using every conceivable mean</li> <li>■ Spirit of pioneering – cutting paths through mountains and building bridges across rivers</li> <li>■ Spirit of progress – finding our own shortcomings and pushing ourselves ahead</li> <li>■ Spirit of innovation – daring to lead and venturing to do the impossible</li> </ul>
<b>Corporate Manner</b>	<ul style="list-style-type: none"> <li>■ Being good at pioneering, focusing on efficiency, valuing our reputation, being thrifty at work</li> </ul>
<b>Four Concepts</b>	<ul style="list-style-type: none"> <li>■ Preeminence, Integrity, Compliance, Incorruptibility</li> </ul>
<b>Five Abilities</b>	<ul style="list-style-type: none"> <li>■ Product Excellence, Outstanding Branding, Innovation Leadership, Modern Governance, Value Creation</li> </ul>

## 2.5 Situations Faced with the Company's ESG

The Central Economic Work Conference (the "Conference") emphasized that we should adhere to seeking progress while maintaining stability, promoting stability with progress and establishing the new before abolishing the old in 2024. In terms of the macro policies, the Conference focused on enhancing the consistency of macro-policy orientation. The Conference called for strengthening the proactive fiscal policy to improve quality and efficiency. It was pointed out at the conference that prudent monetary policy should be flexible and appropriate as well as precise and effective. It was pointed out at the conference that we will devote converted efforts to expand domestic demand, stimulate the potential consumption, and increase profitable investment, forming a virtuous circle through mutual promotion of consumption and investment. In 2024, we will focus on promoting high-quality development, highlight and grasp the key points, and persistently increased our efforts in economic week. It was also pointed out at the conference that we will thoroughly implement the action to deepen and improve the reform of state-owned enterprises, enhance the core function and improve core competitiveness, further accelerate the ecological civilization construction and green and low-carbon development, and actively and properly promote peak carbon emission and carbon neutrality.

In terms of the power supply and demand, according to the analysis and forecast on the situation of the power supply and demand by China Electricity Council, with the considerations such as the domestic and international economic situation and the electrification of the energy consumed by end user, it is estimated that the electricity consumption of the whole society will have a year-on-year increase of approximately 6% in 2024; the newly installed power generation capacity that put into operation will exceed 300 million kilowatts again, and the total installed new power capacity is expected to exceed the installed coal-fired power capacity for the first time.

In terms of the power market, the National Development and Reform Commission issued the Notice on the Establishing a Coal-fire Power Capacity Tariff Mechanism, which adjusted a single tariff to dual tariff and stated that the fixed cost of coal-fired power companies shall be passed through capacity tariff. With the continuous promotion of electricity spot market, the competition in the electricity grid market will be intensified and the uncertainty of the market will be further increased. Driving by the increase in the proportion of electricity volume trading and the adjustment of the time-of-use electricity price, it is expected that the price in respect of the electricity generated by new energy project will be decreased.

In terms of the carbon market, with the gradual promotion of peak carbon emissions and carbon neutrality, the benchmark value of carbon emissions was lowered in the second performance period of the national carbon market, the quota distribution was greatly tightened, and the costs of carbon emissions performance increased. The quota distribution plan for the third performance period has not yet been released, and it is expected that the costs of carbon emissions performance will gradually increase.

In terms of the coal market, most of the additional domestic coal production capacity has reached full capacity in the past two years and the supervision on safety in major coal-producing bases continued to be tightened, there is limited space for increase in the domestic coal production in 2024. In the international market, due to the termination of China's tax exemption policy for imported coal, the increase of the prices of Mongolian coal and Russian coal may lead to contraction of the quantity of corresponding imported Mongolian coal and Russian coal, while Indonesian coal and Australian coal will remain stable, and the overall increase of international seaborne trade coal will be limited, and the supplementary effect of imported coal in China will be weakened. On the demand side, the overall economic operation of China is expected to continue to pick up in 2024, the proportion of non-fossil energy will continue to increase in 2024, and the growth rate of coal consumption will slow down. Under the policy guarantee, the performance rate of mid-term and long-term contracts for coal will be improved, and the "cornerstone" role of long-term coal associations will be effectively brought into play. In 2024, the pattern of coal supply and demand will be further improved, with overall balance and local tension. The trend of coal price will be generally stable, and the price center will move down, but the decline is limited.

In terms of the capital market, according to the spirit of the Central Economic Work Conference and the quarterly meeting of the Monetary Policy Commission of the People's Bank of China. In 2024, China will insist on the principle of "seeking progress while maintaining stability, promoting stability with progress and establishing the new before abolishing the old", insist on a prudent monetary policy, implement flexible, moderate, accurate and effective requirements, and continue to create a good monetary and financial environment for the stable growth of the real economy.

## 2.6 Company's ESG Responsibility Management

Huaneng international integrates the new development concept of “innovation, coordination, green, openness, and sharing” with ESG management, which is conducive to promoting the company's high-quality and sustainable development. To better implement strategic ESG management, the company has established an ESG governance structure that involves the Board of Directors in decision-making, leadership from management, full participation from all departments and units, horizontal coordination, and vertical linkage. This ensures the comprehensiveness, effectiveness, and sustainability of the company's ESG management.

The Board of Directors assumes full responsibility for the company's ESG management and disclosure, assesses and identifies significant ESG risks, and ensures the establishment of appropriate and effective ESG risk management and internal control systems. The Board of Directors holds regular meetings to receive reports from the management on significant ESG matters and provides supervision and guidance.

There are four committees under the Board, namely the Strategy Committee, the Audit Committee, the Nomination Committee, and the Remuneration and Evaluation Committee. According to the division of responsibilities, the Strategy Committee under the Board of Directors is responsible for the decision-making of the Company's overall risk management and listens regularly to the relevant reports, and its responsibilities include but are not limited to reviewing the annual reports on the Company's overall risk management, assessing the Company's risk management and its effectiveness, and reviewing the risk assessment reports for major decisions. The Audit Committee under the Board is responsible for identifying and evaluating the risk of fraud of the senior management and the Board of Directors and forming an independent fraud risk assessment report. It also regularly reviews reports on the Company's internal controls, evaluates the effectiveness of the internal control system, and communicates with the Human Resources Department on issues concerning recruitment and code of conduct. It entirely consists of independent directors of the Company, who inspect the Company's subsidiaries every year to monitor and provide suggestions on production safety, operation and management, internal controls, and corporate culture. Both the Board of Directors and various specialized committees have incorporated aspects of ESG such as production safety, employee health, energy conservation, environmental protection, and corporate culture into daily work. They closely monitor trending issues such as climate change and ESG information disclosure, aiming to promote balanced development in terms of economic benefits, social benefits, and ecological benefits.

The Directors, Supervisors and senior management of the Company attached great importance to strengthening their awareness of compliance and enhancing their ability to perform their duties, actively participated in various special trainings held by regulatory bodies and industry associations, and kept abreast of the updates on regulations and relevant policies in the listing jurisdictions. In 2023, the Company's directors, supervisors, and senior management participated in training sessions 46 times. These trainings covered topics including corporate governance, public opinion management, listing regulation practices, and management of independent directors. The Board's Secretary attended 4 sessions of enhancement training for continuing professional development organized by the Hong Kong Chartered Governance Institute. The training sessions focused on the latest regulatory developments of the listing jurisdictions, new standard requirements, compliant operations of listed companies, illegal and non-compliant cases, as well as anti-corruption and anti-fraud cases. All directors, supervisors and senior management personnel of the Company consciously abide by the laws, regulations and provisions of the Articles of Association (《公司章程》), develop a strong work ethic, and take the lead in “knowing the fear and keeping the bottom line”. In doing so, they have laid a solid foundation for the Board of Directors to play the role of “formulating strategies, making decisions, and preventing risks”, which can take the Company's governance to a new level.

To ensure that the requirements of Environmental, Social and Governance Reporting Guide (《環境、社會及管治報告指引》) (“ESG Reporting Guide”) issued by The Stock Exchange of Hong Kong Limited (“Hong Kong Stock Exchange” or “HKEX”) are effectively implemented, the Company has established an ESG working leadership group chaired by the Chairman of the Board to make decisions on significant ESG matters. Various business departments and units under the Company's headquarters are responsible for implementing specific ESG management tasks according to their respective responsibilities and management authority. In the future, the Company will closely monitor domestic and international ESG-related policies and development trends, and continue to improve ESG information disclosure.



## 2.7 Table of Key Performance Indicators

In accordance with the requirements of the HKEX's ESG Reporting Guide and the Global Reporting Initiative's (GRI) Sustainability Reporting Standards (《可持續發展報告標準》), Huaneng International has prepared and analyzed the Company's 2023 ESG key performance indicators, benchmarking against the guidelines' requirements and its peer companies, as set out below.

Performance Categories	Performance Indicators	2023	2022
Economy	Operating revenue <sup>1</sup> (RMB100 million)	2,543.97	2,467.25
	Sales of power and heat <sup>1</sup> (RMB100 million)	2,461.56	2,360.91
	Sales of coal ash, coal and raw materials <sup>1</sup> (RMB100 million)	14.10	17.65
	Port service <sup>1</sup> (RMB100 million)	2.43	2.59
	Transportation service <sup>1</sup> (RMB100 million)	0.64	0.44
	Others <sup>1</sup> (RMB100 million)	65.24	85.66
	Total operating expenses <sup>1</sup> (RMB100 million)	2,342.01	2,476.57
	Net Profit <sup>1</sup> (RMB100 million)	87.69	-109.73
	Controlled installed capacity <sup>1</sup> (MW)	135,655	127,228
	Domestic power generation (100 million kWh)	4,746.77	4,510.70
	Average annual unplanned outage (times/unit-annum)	0.23	0.21

<sup>1</sup> The scope of statistic of Operating revenue (including Sales of power and heat, Sales of coal ash, coal and raw materials, Port service, Transportation service and Others), Total operating expenses, Net profit and Total amount of full-time contractual employees, takes Singapore Tuas Power Ltd., the wholly owned subsidiary of Huaneng International, and Huaneng Shandong Ruyi (Pakistan) Energy (Private) Limited into consideration. The Operating revenue (including Sales of power and heat, Sales of coal ash, coal and raw materials, Port service, Transportation service and Others), Total operating expenses, and Net profit are disclosed in accordance with the International Financial Reporting Standards, Others including Lease income. The statistical range of controlled installed capacity includes Singapore Tuas Power Ltd., the wholly owned subsidiary of Huaneng International.

Performance Categories	Performance Indicators	2023	2022
Environment	Coal consumption rate for thermal power unit (g/kWh)	291.88	287.69
	Year-on-year change of coal consumption rate for thermal power unit (%)	1.46	1.03 ↓
	Consumption of standard coal (ten thousand tons of standard coal) <sup>2</sup>	13,370.57	12,724.33
	Oil consumption in production (tons)	42,482.78	39,332.41
	Natural gas consumption (ten thousand of standard cubic meters)	602,733.58	572,616.41
	House consumption rate of thermal power unit (%)	4.33	4.37
	Overall water consumption (million tons)	18,660.85	17,696.70
	Fresh water consumption in power generation (million tons)	386.27	380.43
	Water consumption in open cooling circulation (million tons)	18,274.58	17,316.27
	Performance value of consumption of fresh water in power generation (kg/kWh)	0.81	0.84
	Performance value of emission of sulphur dioxide (g/kWh) <sup>3</sup>	0.06	0.06
	Performance value of emission of nitrogen oxides (g/kWh) <sup>3</sup>	0.13	0.13
	Performance value of soot emission (g/kWh) <sup>3</sup>	0.01	0.01
	Sulphur dioxide emissions (tons) <sup>3</sup>	27,249.01	26,509.41
	Nitrogen oxides emissions (tons) <sup>3</sup>	57,485.68	55,303.98
	Soot emissions (tons) <sup>3</sup>	3,618.14	3,503.33
	Total amount of energy-related direct greenhouse gas emissions (ten thousand tons of carbon dioxide equivalent) <sup>4</sup>	–	36,327.70
	Greenhouse gas emissions generated by coal consumption (ten thousand tons of carbon dioxide equivalent) <sup>4</sup>	–	35,034.76

<sup>2</sup> The Consumption of standard coal is the sum of various types of energy consumption, calculated according to the General Principles for the Calculation of Comprehensive Energy Consumption (《綜合能耗計算通則》) (GB/T 2589-2020).

<sup>3</sup> The Company's exhaust gas emissions are counted and calculated according to the actual concentration of pollutants.

<sup>4</sup> On March 15, 2023, the Ministry of Ecology and Environment of the People's Republic of China issued the Notice of Implementation of Relevant Work on Distribution of National Carbon Emission Rights Trading Quota for 2021 and 2022 (Guo Huan Gui Qi Hou [2023] No.1) (《關於做好2021、2022年度全國碳排放權交易配額分配相關工作的通知》(國環規氣候[2023]1號)). According to the Plan, the performance unit shall settle its quota payment for the second compliance cycle (2021-2022) by the end of 2023. In 2023, the Company's operating thermal power units have fully met the requirements for carbon emission compliance. In 2021, the total direct greenhouse gas emissions were 376,100,500 metric tons of carbon dioxide equivalent (CO<sub>2</sub>e). Among these, emissions from coal consumption amounted to 363,432,300 metric tons of CO<sub>2</sub>e, emissions from natural gas consumption were 10,325,900 metric tons of CO<sub>2</sub>e, emissions from fuel consumption were 116,700 metric tons of CO<sub>2</sub>e, and emissions from the desulfurization process were 2,225,600 metric tons of CO<sub>2</sub>e. The direct greenhouse gas emission intensity was 730.99 g of CO<sub>2</sub>e per kilowatt-hour (g CO<sub>2</sub>e/kWh). Additionally, the total indirect greenhouse gas emissions from energy use were 147,500 metric tons of CO<sub>2</sub>e, with an indirect emission intensity of 0.29 g of CO<sub>2</sub>e per kilowatt-hour (g CO<sub>2</sub>e/kWh). The Company's carbon emission data for 2023 will be verified and traded during the third contract performing cycle. Policy on total quota setting and its allocation has not yet been published. Therefore, the Company's carbon emission data for 2023 is considered trade secret and is not disclosed in this report. We will disclose this information after contract completion.

Performance Categories	Performance Indicators	2023	2022
Environment	Greenhouse gas emissions generated by natural gas consumption (ten thousand tons of carbon dioxide equivalent) <sup>4</sup>	–	1,078.31
	Greenhouse gas emissions generated by fuel consumption (ten thousand tons of carbon dioxide equivalent) <sup>4</sup>	–	12.18
	Greenhouse gas emissions generated by desulphurization (ten thousand tons of carbon dioxide equivalent) <sup>4</sup>	–	202.45
	Energy-related direct greenhouse gas emission intensity (grams of carbon dioxide equivalent/kWh) <sup>4</sup>	–	718.44
	Total amount of energy-related indirect greenhouse gas emissions (ten thousand tons of carbon dioxide equivalent) <sup>4</sup>	–	25.78
	Energy-related indirect greenhouse gas emission intensity (grams of carbon dioxide equivalent/kWh) <sup>4</sup>	–	0.51
	Total water discharge (million tons)	15,367.03	15,434.81
	Total discharge of sewage (million tons)	24.94	25.38
	Total discharge of open cooling circulation water (million tons)	15,342.09	15,409.43
	Hazardous liquid waste production (tons)	1,272.03	973.94
	Production of denitration catalysts (tons)	8,083.56	7,937.36
	Production of other hazardous solid waste (tons)	708.10	436.09
	Intensity of hazardous waste (g/kWh)	0.02	0.02
	Production of general solid waste (ten thousand tons)	4,740.54	4,342.80
	Production of fly ash and cinder (ten thousand tons)	3,788.79	3,303.73
	Production of desulphurized gypsum (ten thousand tons)	951.75	1,039.07
	Intensity of general solid waste (kg/kWh)	0.10	0.10
	Comprehensive utilization rate of fly ash and cinder (%)	83.16	96.96
	Desulphurization gypsum disposal utilization rate (%)	77.01	85.31
	Amount of grievous (and above) environmental accidents (times)	0	0

Performance Categories	Performance Indicators	2023	2022
	Total amount of full-time contractual employees <sup>1</sup> (persons)	57,038	57,069
	Total number of male employees (persons)	45,082	44,800
	Total number of female employees (persons)	11,956	12,269
	Total number of employees aged 30 and below (persons)	11,214	10,955
	Total number of employees aged between 31 and 50 (persons)	29,513	30,142
	Total number of employees aged above 50 (persons)	16,311	15,972
	Total number of employees in China (persons)	56,453	56,454
	Total number of employees in overseas regions (including Hong Kong, Macao and Taiwan) (persons)	585	615
	Total number of full-time employees (persons)	57,038	57,069
	Total number of part-time employees (persons)	0	0
	Employee turnover rate (%)	0.41	0.39
	Turnover rate of male employees (%)	0.40	0.39
	Turnover rate of female employees (%)	0.45	0.37
	Turnover rate of employees aged 30 and below (%)	0.77	1.02
<b>Social</b>	Turnover rate of employees aged between 31 and 50 (%)	0.44	0.33
	Turnover rate of employees aged above 50 (%)	0.10	0.05
	Turnover rate of employees in China (%)	0.34	0.30
	Turnover rate of employees in overseas regions (including Hong Kong, Macao and Taiwan) (%)	7.18	7.80
	Number of employees received trainings (persons)	54,050	53,890
	Proportion of employees received trainings (%)	94.76	94.43
	Proportion of male employees received trainings (%)	95.78	95.54
	Proportion of female employees received trainings (%)	90.92	90.39
	Proportion of management personnel received trainings (%)	93.57	96.65
	Proportion of non-management personnel received trainings (%)	94.89	94.25
	Training hours per employee (hours)	155	160
	Training hours per male employee (hours)	153	159
	Training hours per female employee (hours)	163	164
	Training hours per management personnel (hours)	120	100
	Training hours per non-management personnel (hours)	159	165

Performance Categories	Performance Indicators	2023	2022
Social	Number of employee deaths due to duty <sup>5</sup> (persons)	0	0
	Number of contractor and subcontractor deaths due to duty <sup>6</sup> (persons)	2	0
	Grievous personal injury and death accidents employees (times)	0	0
	Personal injury and death accidents during the power production (times)	2	0
	Accidents that endangered safe operation of power grid (times)	0	0
	Days lost due to work injury (days)	0	0
	Rate of work-related deaths (%)	0	0
	Total suppliers (number)	97,358	93,198
	Domestic suppliers from Mainland China (number)	95,999	91,828
	Overseas suppliers including Hong Kong, Macao and Taiwan (number)	1,359	1,370
	Customer complaints (number)	0	0
	Concluded lawsuits on corruption against the Company or its employees (number)	0	0
	Average equivalent availability of thermal power units (%)	93.76	93.37



<sup>5</sup> Refer to the number of employees' decrease as a result of production safety incidents. In 2021, one employee died in the line of duty, rate of work-related deaths is 0.0017%.

<sup>6</sup> Refer to the number of decreases of contractors and subcontractors during production for which the Company is responsible.

## 2.8 Communication with Stakeholders and Identification of Material Issues

### 2.8.1 Information about and Communication with Stakeholder

Huaneng International has always been adhering to the corporate responsibilities of “providing sufficient, reliable and environment-friendly electricity to the society, creating a long-term, stable and increasing return to our shareholders, and providing our staff with an environment which encourages contribution and facilitates career development and integrated development” by fully considering and effectively responding to stakeholders’ demands, and worked together with all stakeholders to promote economic and social development and share corporate development achievements.

Stakeholders	Expectations of Stakeholders	Main Mechanisms of Communication and Participation	Responses from the Company
<b>Investors</b>	Increase of the Company’s market value and profitability; continuing improvement of the Company’s environmental and social responsibility performance	Shareholders’ meeting; information disclosure; Company’s website	Truthful and thorough disclosure of information; investment of efforts in improving business performance and generating profits; absorption of market opinions for rectification of operating behaviors; investment of efforts in the improvement of environmental and social responsibility management
<b>Clients</b>	Assurance of high-quality products; guarantee of good service	Signing contracts and agreements	Supply of sufficient, reliable and eco-friendly energy and services; guarantee of safe stable delivery of power and heating
<b>Employees</b>	Guarantee of welfare, health and security; improvement of communication mechanism; equal chances of promotion and development	Employment contracts; employees’ assembly	Strict observance of provisions within employment contracts; improvement of the institution of employee’s assembly; improvement of administration of salary and welfare; provision of healthy and safe work environment; provision of avenues for vocational advancement and training
<b>Suppliers</b>	Honest, fair and just cooperation; mutual benefits and win-win scenarios	Signing contracts and agreements; regular communication through mutual visits; correspondence through files, letters and telegraphs	Adherence to open and transparent business principles and processes; active fulfillment of contracts and agreement; promotion of mutual visits
<b>Communities</b>	Joint cultivation of communal civility; support for public welfare; focus on social development	Promotion and organization of public welfare activities; participation in volunteer activities; guarantee of employment	Organization of and participation in public welfare undertakings; building harmonious and civilized communities; attempts at growth of local employments
<b>Regulatory Authority</b>	Compliant operation under disciplines and laws; green energy; energy conservation and emission reduction	Participation in relevant energy meetings, work reports, policy consultation and information submissions	Strict observance of relevant laws and stipulations; vigorous advocacy and promotion of energy conservation and emission reduction
<b>Peers</b>	Fair competition; honest cooperation; joint development; safe production	Participation in industry associations <sup>7</sup> , policy studies, daily meetings and business exchanges	Competition and cooperation with peers; joint creation of a healthy and orderly competitive environment; mutual benefits and joint progress

<sup>7</sup> China Electricity Council, Chinese Society for Electrical Engineering, Global Energy Interconnection Development and Cooperation Organization, etc.

## 2.8.2 Process for Identification of Material Issues

According to the requirements in the HKEX's ESG Reporting Guide and relevant procedures for substantive analyses from GRI, Huaneng International collects and identifies issues at the heart of key stakeholders' interests by way of questionnaires, interviews, etc. Huaneng International analyses and prioritizes collected information and determines the Company's material issues with respect to ESG disclosed in the report.

The process of identification of material issues is divided into four steps:

# 01

Identifying relevant ESG issues: sources of issues include the HKEX's ESG Reporting Guide, GRI Sustainability Reporting Standards 《可持續發展報告標準》 and matters disclosed by domestic and international peers.

# 02

Prioritizing issues: internal stakeholders, when it comes to prioritization, mainly consider impacts on the Company's strategies, policies, processes, objectives, competitive advantages, management excellence, and the Company's current and future financial status; external stakeholders, on the other hand, focus on the extent to which a certain issue has impacts on the assessment and decision-making of the Company as well as on its own interests.

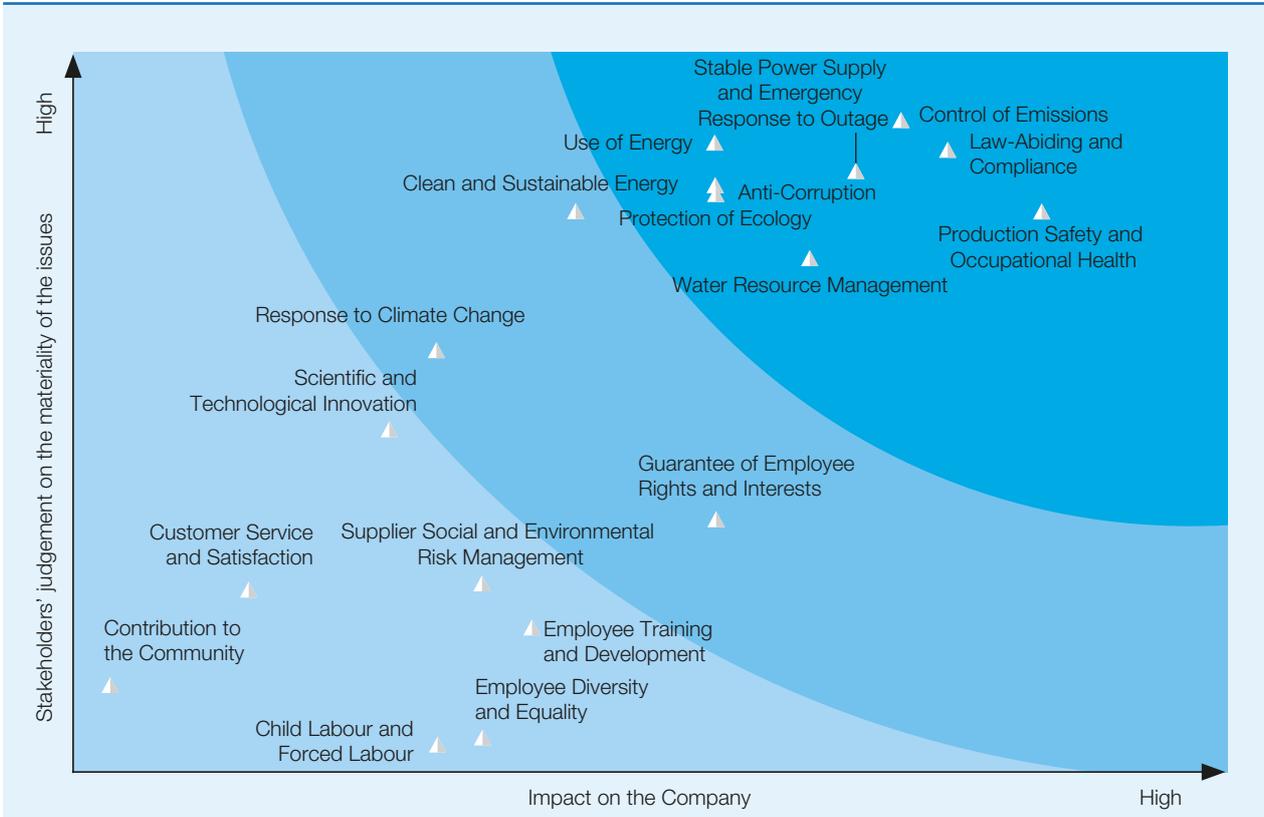
# 03

Deliberating: the Company's management assesses and approves identified issues and their prioritization.

# 04

Reviewing: after the reporting period, the Company will request internal and external stakeholders to provide feedback on the contents of this report to prepare for the next reporting period.

Following our communication with various stakeholders, the Company has identified the following issues as well as their respective priorities.

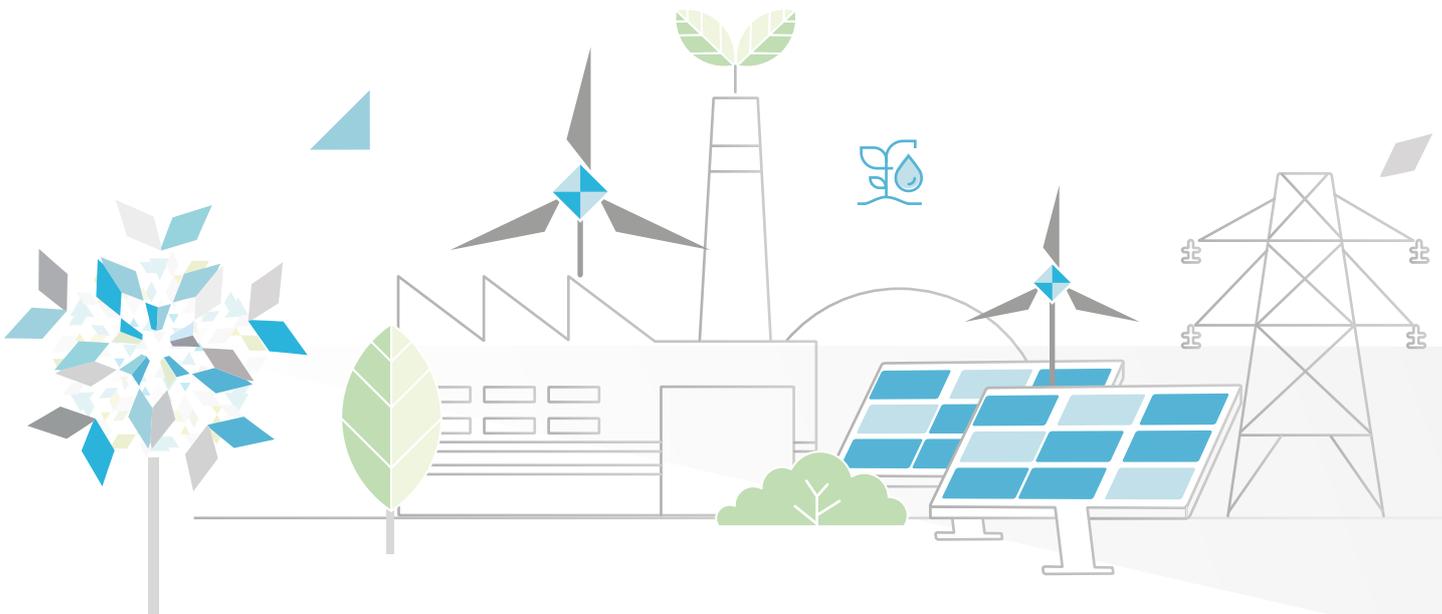


**Grading Standard:**

- According to their own degree of concern, internal and external stakeholders grade different issues in accordance with their importance.

**Chart Description:**

- Horizontal Axis: Internal stakeholders' grading for each issue
- Vertical Axis: External stakeholders' grading for each issue



# DISTRIBUTION OF POWER PLANTS OF THE COMPANY

## CHINA NETWORK

Heilongjiang  
4,340



Jilin  
3,948



Wind-power



PV Power



Coal-fired



Combined Cycle



Hydro-power



Biomass power

The controlled installed capacity of the Company as at 31 December 2023 was

**135,655 MW,**

distributed in areas as depicted in the chart (Unit: MW)

## LEGENDS

Liaoning  
6,686



Inner Mongolia  
273



Hebei  
4,193



Gansu  
3,897



Ningxia  
20



Beijing  
2,766



Tianjin  
1,695



Shanxi  
4,263



Shandong  
22,746



Henan  
8,799



Jiangsu  
12,731



Shanghai  
5,678



Chongqing  
3,836



Zhejiang  
7,232



Hubei  
5,067



Hunan  
3,456



Jiangxi  
7,823



Anhui  
2,924



Fujian  
4,339



Guangdong  
7,171



Guangxi  
634



Yunnan  
4,331



Guizhou  
1,166



Hainan  
3,633



## OVERSEAS NETWORK

Singapore  
2,009



Total **135,655**

# 03

## *SUPPORT FOR THE POWER SYSTEM REFORM*



The power system reform has been under way for 8 years since 2015. This market-oriented reform focuses on the logic of “controlling the transmission and distribution links, and opening up the power generation and consumption side”, which means establishing markets in competitive sectors and strengthening regulation in naturally monopolized sectors. Currently, the construction of the national power market is progressing steadily and orderly, with the proportion of electricity traded on the market increasing significantly. The reform of the power market has been gradually advanced.



干在实处 走在前列

# SUPPORT FOR THE POWER SYSTEM REFORM

7 AFFORDABLE AND CLEAN ENERGY



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



With the issuance of important policies in 2023 such as the Transmission and Distribution Price Policy for the Third Regulatory Cycle (《第三監管周期輸配電價政策》), Basic Rules for the Electricity Spot Market (《電力現貨市場基本規則》), Notice on Further Accelerating the Construction of the Electricity Spot Market (《關於進一步加快電力現貨市場建設工作的通知》), and Notice on Establishing the Mechanism for Coal-fired Power Capacity Pricing (《關於建立煤電容量電價機制的通知》), the nationally unified power market policy framework under the construction of the new energy electricity system has been further refined.

With the rapid growth of new energy installations, the number of cost-competitive of new energy projects is increasing. The volume of wind and photovoltaic power participating in market-based electricity trading has been rising year by year, and the trading prices are generally low. The state is gradually increasing the proportion of new energy sources in the power market, with the aim that all new energy power plants will be fully involved in power market trading by 2030. Provinces that have launched the spot market see more new energy sources engaging in the market. In regions with a high proportion of new energy, the trading prices in the power market have generally fallen following the participation of new energy sources. Coupled with factors such as the allocation of profits to ancillary services and the assessment of system deviations, new energy sources face the risk of declining returns in the market.

As one of the most influential enterprises in the national electric power industry, Huaneng International will lend its full support to national power system reform policies and work conscientiously for arrangements concluded at the Central Economic Work Conference and in various government work reports by participating in the establishment of electricity market and transactions. By playing the role of market mechanisms, the Company enhances security of power supply and supply capacity of clean electricity. The new power system reform policies have a profound impact on the Company's profitability and sustainable development. In response, the Company has conducted in-depth policy analysis and evaluation based on the actual situation. We have comprehensively considered the impact of related policies on mid- to long-term trading, spot trading, green power and green certificate trading, Chinese Certified Emission Reduction (CCER), and carbon trading markets. By doing so, we aim to enhance market awareness, accelerate the innovation of the management system and mechanism, and strengthen the business synergy of marketing, fuel business and production. Ultimately, we can make wiser business decision-making, and maximize the overall economic benefits.

At Huaneng International, developing the retail market is high on the agenda. We are leveraging our competitive advantage of integrating generation and sales to strive for a greater share of the electricity volume. Energy sales company from all regions maintain close communication with terminal electricity customers, meticulously analyzes electricity consumer behavior, and offers professional and customized services. We have the country's first virtual power plant, and with such a technological advantage, we provide users with value-added services such as demand-side response. We encourage users to shift their electricity consumption to off-peak hours. Such load shifting management can help users reduce costs and gain benefits, creating a win-win situation. By utilizing platforms such as the official account, video account, mini-program, official website, and Douyin, we have expanded the visibility of our electricity sales business while providing customized pricing packages for small and medium-sized online subscribers. This has enhanced the reputation of Huaneng International's brand for customer service and increased market recognition. Together with electricity users, we are jointly advancing the revolution in energy production and consumption, building a clean, low-carbon, safe and efficient energy system.

## Our Targets

As the power system reform advances, Huaneng International has established a marketing philosophy that "focuses on profitability and aims to lead the market". The Company emphasizes the unification of quantity and price, stabilizes the market transaction prices, and competes for market share in electricity consumption. Efforts are also being made to optimize the trading strategies of generating units, to enhance digital capabilities, and to improve the overall operational efficiency of the Company. All these efforts are aimed at generating higher revenues with greater efficiency, and helping the Company stay competitive as a global market leader.

The wholesale market trading serves as a "ballast stone" in maintaining stable quantity and price. Pursuant to the national requirements for the signing of mid- to long-term electricity contracts, and taking into account the situation of the local power market, the Company has formulated appropriate trading strategies and ensured the signing of mid- to long-term contracts.

The retail market trading aims to rationally increase the scale of electricity sales with consideration of the wholesale purchase prices, expanding the market share of electricity sales, and striving to cover the direct transaction electricity demand from the generation side. As many regions have strengthened load management, the Company provides value-added services such as ancillary services and demand-side response. By doing so, we can create new profit growth points, enhance user engagement through win-win cooperation, and elevate our brand image in electricity sales.

## Management Mechanism

In 2023, confronted by the challenges such as the establishment of a new power system and a unified national power market, and the “carbon peaking and carbon neutrality” goals, Huaneng International worked hard to promote relevant institutional mechanisms and market-oriented talent training, responded to the challenges arising from the spot market, and coordinated the work of regional companies, thus combining forces to address market changes and maximizing operating benefits.



### 1 Achieving the annual targets with improved quality and efficiency.

The Company studied the situation in the power and coal markets. We focused on the signing of mid- to long-term contracts for coal-fired power generation with improved volume and price structure, and implemented the national requirements for mid- to long-term electricity contracts. By optimizing the time-differentiated contract arrangement, ensuring that high-energy consumption transactions are not restricted, and adopting retail service fee, we maintained the average electricity price at a high level for the entire year and laid a solid foundation for maintaining a stable price and ensuring a guaranteed quantity throughout the year. We coordinated the seasonal and periodical operation schedule of coal-fired power generation units for electricity spot trading as well as the allocation between regional and provincial markets, reserved generation capacity for peak summer/winter and other high-demand periods to ensure that units can maximize the benefits of increased power generation during peak times. In addition to strategically allocating coal-fired power and new energy power, we facilitated tasks such as bundled power transmission, wind-fire displacement, benefit-oriented power dispatch, and composite retailing based on local conditions, which achieved a cost-effective and stable output synergy between coal-fired power and new energy sources. We improved power forecasting for clean energy projects to reduce the rate of wasted electricity. Additionally, we coordinated the allocation of resources for green power and green certificate trading to maximize the environmental premium gains in both markets.



### 2 Improving spot trading capacity in a well-planned and organized way.

We took proactive measures to cope with the new challenges of the spot market, analyzed the rules of the spot market, coordinated internal departments and formed a synergy to cope with market changes. In this way, we improved the efficiency of market decision-making and enhanced the ability to respond to the electricity spot trading market. The Company's subsidiaries which operate in a spot market that supports continuous trading adjusted the spot trading strategies in a timely manner in response to changes in market supply and demand, seizing market opportunities, and achieving increased revenue and improved efficiency. In the southern regional market for dispatch trial operations, various transactions were coordinated with a view to maximize regional benefits. The second batch of pilot units participating in the spot market, taking into account the new energy involvement in the market, electricity consumption load and power supply structure, have developed an appropriate mid- to long-term holding ratio and promptly adjusted their trading strategies. In regions where spot markets are taking shape, we have strengthened research and analysis, actively participated in policy formulation, accelerated the construction of operational centers, intensified efforts invested in training, and enhanced trading capabilities.



### 3 Enhancing talent management and team building.

Cultivating market-oriented talents is a top priority for the Company. As such, the Company has organized special training sessions related to the spot market and retail market, and launched online marketing video courses. We have also urged each unit to accelerate the selection, cultivation, and reservation of trading talents, and organized competitions on electricity trading skill to help trading talents become more technically competent. At the 2023 National Power Industry Vocational Skills Competition (Power Trader) organized by the China Electricity Council and the China Employment Training Technical Instruction Center, the Company's marketing team won a first prize, three second prizes and three third prizes, and seven contestants were awarded the title of “Industry Technical Expert”, and twelve contestants were named “Outstanding Skill Worker”. The Company has selected skilled employees to lead in cultivating a group of versatile talents with high capabilities in policy research, market analysis and practical trading skills across subsidiaries in various regions, aiming to build a first-class electric power marketing team in China.

04

*SOLID  
COMMITMENT  
TO SECURING  
PEOPLE'S  
LIVELIHOODS*





Adhering to accelerating the construction of a world-class listed power generation company, Huaneng International pursues new development philosophy, coordinates production safety and green development, plays an active part as a China's state-owned enterprise, devotes every effort to serving national development and secures energy supply. The Company optimizes the power supply system, adjusts governance structure and deepens corporate reform, steadily reinforces the compliance management capabilities and continuously drives the Company towards achieving new accomplishments in high-quality development.

# SOLID COMMITMENT TO SECURING PEOPLE'S LIVELIHOODS

9 INDUSTRY, INNOVATION  
AND INFRASTRUCTURE



16 PEACE, JUSTICE  
AND STRONG  
INSTITUTIONS



## 4.1 Improving Capability of Guaranteeing Energy Supply

Huaneng International is committed to developing itself into an international leading listed power generation company and providing sufficient, reliable and environmental-friendly power, as well as high-quality energy services for the customers. Each of the Company's power plants has put in place contingency plans and response measures to ensure a safe and stable power supply.

### Establishing a Policy Guarantee Mechanism

In accordance with the emergency management measures for major incidents and accidents and the contingency plans for major production accidents and large-scale blackouts, in case of accidents such as power units tripping, alternating current and direct current power outages, busbar outages, system break-down or other accident that may cause large-scale power grid outages, all units of the Company have formulated Emergency Plan for Plant-wide Power Loss (《全廠失電應急預案》), Emergency Plan for Black Start (《黑啟動應急預案》), Plan for Island Operation (《孤島運行方案》) and other preparatory measures and established corresponding emergency handling organizations in order to minimize negative impacts on society with the unified leadership, clear deviation of labor, quick response and smooth communication. Besides, in case of an emergency, the Company and subsidiaries will also manage accident report to power dispatch department and relevant offices of local governments, handle examination and approval of information disclosed to the public, start emergency measures and be attentive to public concern to reduce the negative impact on society. We implement inspection and start-up preparation after the units outage, to ensure that the units can be started in time to restore supply after troubleshooting.

### Strengthening Daily Equipment Management

The Company has focused on its equipment and technology transformation management to ensure the safety, reliability and advancement of equipment. The Company has been pushing ahead with the work of "reducing deficiencies and controlling unplanned power outages". With the unplanned power outage control as a breakthrough point, we strengthen generator units' unplanned power outage control, issue unplanned power outage analysis report and conduct related monthly performance evaluation reporting. The Company initiated inspections in production management area for power plants, carried out special investigation of equipment management and hidden dangers, carried out project planning and process quality inspection of overhaul units, and managed the reliability index of the main engine and important auxiliary machinery of the unit in the whole process. We also strengthened technical supervision and management, conducted site evaluation and took measures in technology transformation projects to constantly improve equipment health and ensure the safety of equipment and our staff.

In 2023, the Company achieved an average 0.23 times of unplanned outages per unit per year.



## Strengthening the Guarantee of Heating Safety

With earnest implementation of the requirements of China and industry authorities on heat supply, the Company has established a leadership team for power and heat supply guarantee in a timely manner, arranged a supply-guarantee plan, conducted daily supervision, weekly supervision and monthly summary, made assiduous efforts in ensuring the security of supply-guarantee funds, and promoted the implementation of various measures. All the subsidiaries resolutely shoulder their political and social responsibilities, secure coal source through various channels, strengthen equipment maintenance, and strictly implement instructions of power grid dispatching, make sure that all coal-fired power generating units indeed are opened and used, and heating units are in full force to ensure heat supply. By doing so, the Company has fully performed its responsibilities and duties. In addition, the Company has also taken the following measures to strengthen the guarantee of heating safety.

- 1 **Strengthen the maintenance of heating equipment.** We implement cold and frost protection measures, and ensure safe and stable operation during the peak winter period.
- 2 **Fulfill the safety production responsibilities.** We develop specific measures in accordance with the work plan and work guidelines to achieve a stable supply of electricity and heat.
- 3 **Enhancing the management of boiler fuel.** We formulated specific plans for fuel procurement, storage and transportation, optimized plans for mixed burning and improved the measures for low-load and stable burning, so as to ensure steady operation of power units.
- 4 **Attaching great importance to management of direct heating network.** We maintain the normal operation of the heating network by conducting routine management of heating network equipment, ensure sufficient reserve of materials and human resources, timely eliminate the defects of heating network equipment and pipes, and focus on the operation and management of water replenishing for heating network.
- 5 **Being well prepared for heating emergency.** We improve our capabilities of dealing with disastrous events by preparing emergency heating measures in advance, formulating emergency plans in case of outage of heating equipment, quickly identifying, treating and recovering failure equipment, establishing emergency plans for personal injury and death accidents, and enhancing the communication between local government and heating companies.
- 6 **Strengthening the on-duty work of heating.** We strengthen the duty policy on holidays, execute the policy of major operations with the attendance of leaders. We report the operation of heating units in a regular basis and report the heating emergencies in a timely manner.



## Successfully Coping with Natural Disasters and Extreme Weather

Natural disasters and extreme weather are the main climate risks to which the Company is exposed. In 2023, the subsidiaries of the Company worked together to overcome severe tests, and successfully accomplished the task of ensuring power supply in this crucial period. The production safety of the Company's system overall maintains stable. The Company always considers stable supply of power and heat as highly urgent political tasks, assumes duty to guarantee energy consumption for people's livelihood, and resolutely overcomes the adverse effects of the continuous sharp increase of coal prices and lower-than-cost price. The Company resolutely shoulders the political responsibility of guaranteeing the security of electricity and heat supply, ensures that we win the tough battle of electricity and heating supplying.

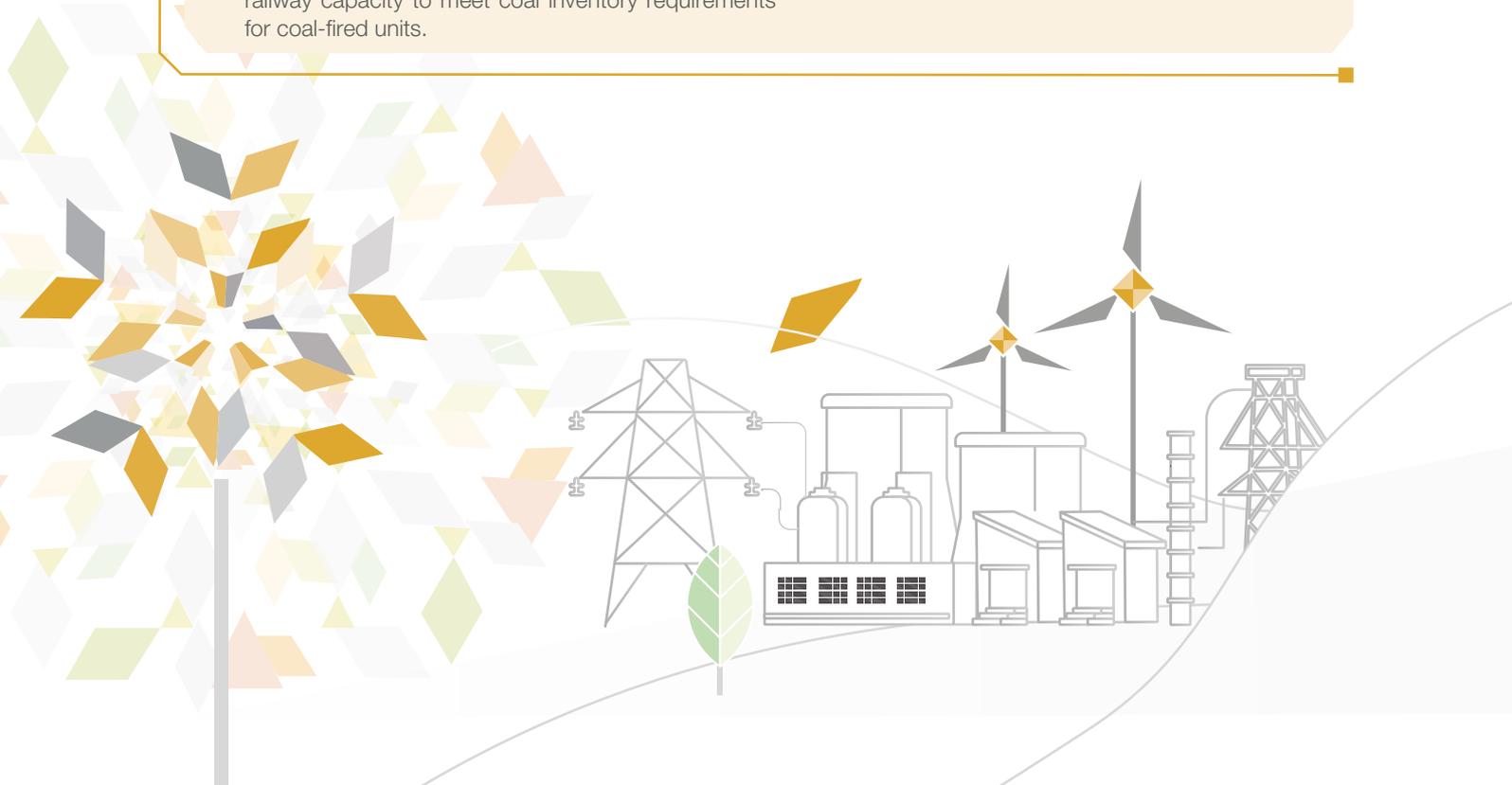
### Beijing Thermal Power Plant Took Actions to Combat Extreme Weather

As a thermal power plant with the largest power generation capacity in Beijing and the strongest domestic heating capacity, Huaneng Beijing Thermal Power Plant was fully dedicated to ensuring the stable and secure provision of energy to the capital with multiple measures being taken, keeping countless households warm throughout the winter.

1. Departmental heads were on duty round-the-clock on a rotating basis to ensure that the site was adequately staffed.
2. In order to ensure the safe and stable operation of the unit, the thermal control team checked the important measurement points to avoid abnormal operation of the units caused by unnecessary disturbances.
3. In the face of extreme weather conditions, the boiler operators carried out thorough anti-frost and anti-freezing inspections of the outdoor equipment, and solved the problems of frozen baffles and power loss of the electric heat tracing, which laid the foundation for the safe and smooth start-up of the coal machine.
4. Fuel professionals coordinated coal resources and railway capacity to meet coal inventory requirements for coal-fired units.



Huaneng Beijing Thermal Power Plant Actively Coping with Rains and Snow



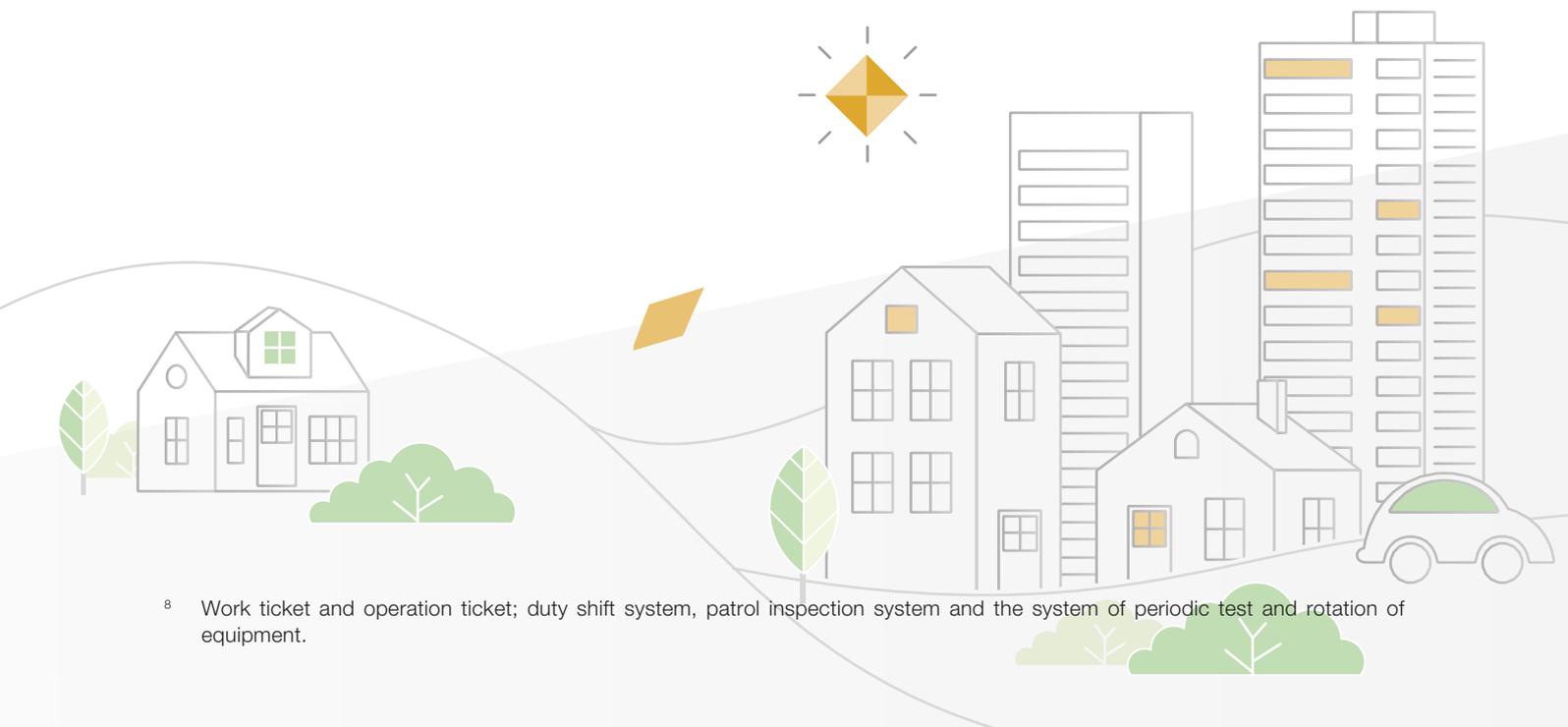
## Successfully Guaranteeing Energy Supply for Important Periods

In 2023, China vigorously promoted the policy of increasing production and ensuring supply, and extended the duration of policies on zero-tariff imports for coal to encourage corporate imports. Consequently, the mismatch between coal supply and demand was significantly reduced. Under the guidance of national policies, the Company effectively responded to the impact of adverse factors, such as widespread high temperatures, the typhoon “Doksuri” disaster, and relatively low water levels in major river basins. The Company focused on coordinating the supply of coal for electricity in key and difficult areas, ensuring a stable and orderly overall fuel supply. We successfully ensured supply during important periods such as the Asian Games, the Universiade, the peak summer/winter seasons, and the “Two Sessions”, winning recognition and praise from national ministries and local governments for our fulfillment of duty.

During important periods such as the beginning of the year and the Spring Festival, the Company took various production safety measures to ensure safe and stable power production and reliable heat and steam supply.

- 1 Performing safety management for operating power units.** Learning from the internal and external production safety accidents, we seriously implemented the policy of “Two Tickets and Three Systems”<sup>8</sup>, strengthened operation management and routine inspection, improved equipment defect management and attached great importance to equipment defect elimination.
- 2 Strengthening the management of external supply of heating and steam.** By earnestly implementing various measures of the Company, we enhanced the inspection and maintenance on heating equipment and heating pipe network, and improved relevant emergency plans and early warning mechanism.
- 3 Attaching great importance to fuel support.** Acting upon the decisions and plans of the CPC Central Committee and the State Council on energy supply, the Company took measures to safeguard people’s livelihood and supply while controlling prices, strengthening fuel procurement, and maintaining high coal stocks to ensure supply security.
- 4 Enhancing allocation and transportation.** We managed to match the resources with the transport capacity and made arrangement for urging of delivery and shipment. Considering the potential adverse effects of extreme weather on transportation, we reported to the local traffic management department in advance for larger transport capacity and more transportation channels.

<sup>8</sup> Work ticket and operation ticket; duty shift system, patrol inspection system and the system of periodic test and rotation of equipment.



## 4.2 Legal and Compliant Operation

Huaneng International has always pursued legal and compliant operations, and accelerated the construction of a well-governed, operationally compliant, regulated, law-abiding, and honest enterprise. The Company strictly follows the compliance requirements, continuously monitors the trends of regulatory laws and regulations in the listed location, and fully implements the regulatory requirements. Besides, ongoing efforts are being made to improve the Company's governance and operations, and to enhance its ability to prevent risks and manage business operations, in an attempt to foster a culture of integrity.

### 4.2.1 Governance by Law

In 2023, upholding Xi Jinping Thought on Rule of Law, the Company thoroughly implemented the strategic plan of the CPC Central Committee on comprehensively advancing the rule of law. Under the unified leadership of the Party committee and management of the Company, the Company integrates the concept of governing businesses by law into corporate governance, with the construction of better enterprise governance structure as the base, improving the management of compliant operation as key point, enhancing the capability of the team engaged in the rule of law as a means, strengthening the construction of corporate rule of law culture as a guarantee, comprehensively promote the construction of rule of law of Huaneng and deepen reform to improve the level of rule of law construction.

#### Improving the Corporate Governance Structure

After years of exploration and practice, the Company has insisted on deepening reforms based on the requirements of the modern enterprise system, upgraded the organizational system, and improved our modern governance system and governance capacity to form a standardized and sound corporate governance system in all respects. We have established and improved the corporate governance structure consisting of the shareholders' meeting, the Board of Directors, the Board of Supervisors, and management, and continuously improved the system of decision-making, execution and supervision on the basis of equal rights and responsibilities, coordinated operation, and effective checks and balances.

#### Strengthening the Mechanism of Litigation Risk Prevention and Control

The Company insistently strengthens the management of litigation and disputes and supervises the handling of the cases carried over from the past following a problem-oriented approach. For the significant cases that have impaired the Company's reputation or caused heavy losses, the Company strengthens coordination and handles cases in a standardized and effective manner. The Company has strengthened regulatory oversight of significant case risks and the reporting mechanism for litigation cases, and improved the quality of case information reporting, continuously improved risk prevention capabilities. The Company has identified legal and management risks, and weaknesses in the institutional framework and management, provided timely legal risk alerts, further standardized trading behaviors, and safeguarded against operational risks.

#### Enhancing the Review of Legal Issues

Following the strategy of governing the enterprise by law and the idea of solving the difficulties of reform with a thinking and methodology based on the rule of law, the Company promoted the thorough integration of legal affair management and operation management to ensure mutual cooperation and efficient coordination between the legal affair department and other business departments and regulate the working process. In 2023, the Company further strengthened its legal compliance mechanism to promote the deep integration of laws and regulations into business practices. Firstly, it enhanced the level of decision-making in compliance with laws and regulations by revising the *Three Major Decisions and One Major Fund Utilization* and embedding pre-legal review procedures into 41 key decision-making processes involving fundamental company policies, major investments, and significant decisions. This strict regulatory framework aimed to mitigate decision-making risks and ensure compliance. Secondly, we comprehensively strengthened legal reviews in capital operations, project investments, legal authorizations, contracts, and business administration, among others, to regulate transaction behaviors and reinforce legal compliance and risk control in related-party transactions. The Company firmly adhered to the rule of law mindset, fostered legal awareness, conducted extensive legal publicity and education, and embedded the concept of the rule of law to ensure that all operations were conducted in accordance with legal principles and steadily progressed. By promoting the integration and the interfacing of the legal management information system and other business operation systems, the Company fully exploits the management efficiency of the information system, and continuously improves the level of information management of legal affairs.

### Improving Staff's Awareness of Laws by Various Activities

The Company further advances various publicity and education campaigns on laws in an innovative manner, and promotes the implementation of the relevant requirements. In 2023, the Company fully implemented the plans of the superior company, systematically deployed and carried out the work of legal literacy, taking into account the needs of legal literacy of the Company, by studying Xi Jinping's thought on the rule of law, focusing on the Constitution, the Civil Code and the laws, regulations and supervisory rules related to the reform and development of the Company and the enhancement of the quality of listed companies.

1

In accordance with the relevant work plans of the SASAC, we have compiled and issued the List of Party Regulations and National Laws for Party Members to Understand (《領導幹部應知應會黨內法規和國家法律清單》). The Company plans to incorporate all the legal and regulatory requirements that Party members should know and be familiar with into the learning schedule of the theoretical study group of the Company's Party Committee and organize group studies accordingly.

2

The Company has strengthened the requirements of studying laws and regulations related to intercompany transactions and information disclosure of listed companies. We have thoroughly learned the laws and regulations on enterprise reform and promotion of the high-quality development, and made further research on policies and regulations regarding environmental protection and safety.

3

According to the laws and regulations such as the Legislation Law of the People's Republic of China (《中華人民共和國立法法》), the Measures for the Administration of Independent Directors of Listed Companies (《上市公司獨立董事管理辦法》), the Measures for the Administration of Voluntary Greenhouse Gas Emission Reduction Trading (For Trial Implementation) (《溫室氣體自願減排交易管理辦法(試行)》), the Standards for the Contents and Formats of Information Disclosure by Companies Offering Securities to the Public No. 26—Material Asset Restructurings of Listed Companies (《公開發行證券的公司信息披露內容與格式準則第26號——上市公司重大資產重組》), and the Guidance No. 5 on the Application of Rules for Real Estate Investment Trusts (REITs) of the Shanghai Stock Exchange – Temporary Reports (For Trial Implementation) (《上海證券交易所公開募集基礎設施證券投資基金(REITs)規則適用指引第5號——臨時報告(試行)》) and their revisions, we have drafted and issued the New Legislation Briefing (《新法簡報》) for legal publicity and explanation in line with our business practice.

4

We have organized activities to promote the rule of law, and timely implemented the relevant requirements of SASAC for the construction of central enterprises under the rule of law.

5

The Company has continuously strengthened compliance management and control contract risks based on the operational needs. The Company has prepared and issued the Risk Warning Letter for Contract Fulfillment and Contract Modification (《合同履行及合同變更的風險提示函》) with reference to contract litigation and dispute cases in the Company's system, which further guaranteed the organized and regulated operation and management of the Company.

6

Promoting the spirit of the Constitution and publicizing the socialist rule of law culture. During the Constitution Awareness Week, the Party Committee of the Company collectively learned the spirit of the important instructions given by General Secretary Xi Jinping on the Constitution Day and the spirit of the important speeches made by General Secretary Xi Jinping on strengthening the rule of law in relation to foreign affairs during the tenth collective study session of the Political Bureau of the CPC Central Committee.

### 4.2.2 Anti-corruption

In 2023, strictly complying with the Oversight Law of the People's Republic of China (《中華人民共和國監察法》), the Regulation on the Implementation of the Oversight Law of the People's Republic of China (《中華人民共和國監察法實施條例》), and the Criminal Law of the People's Republic of China (《中華人民共和國刑法》) and other laws and regulations, the Company assiduously carried out conduct improvement and anti-corruption campaigns, urged all employees to uphold ethics as well as Party disciplines and state laws and created an atmosphere where everyone remains disciplined, abides by the law, discharges duties in a standardized fashion, and practices clean operation so as to provide reliable support for the Company's high-quality business development.

In 2023, the number of lawsuits on corruption raised and concluded against the Company or its employees was zero.

#### Implementing the Responsibility System for Conduct Improvement and Clean Governance

- 1 The Company held the 2023 conference of conduct improvement, clean governance and anti-corruption campaigns.
- 2 The Company has formulated and issued the List of Key Task Division and Implementation for Conduct Improvement, Clean Governance and Anti-corruption Campaigns in 2023 (《公司2023年黨風廉政建設和反腐敗工作重點任務分解落實清單》), which divides the annual tasks into 38 specific tasks in seven aspects and defines the distribution of responsibilities.
- 3 The Company convened a special report meeting on comprehensive and strict party governance by the Company's party committee, listened to the "dual responsibilities" of the Company's team members, the special supervision of the Company's discipline inspection commission, and the work reports of various departments and offices at the management, supervision, and execution levels, and consolidated the responsibility for managing and governing the party.





## Strengthening Daily Supervision and Targeted Supervision

- 1 The Company has constructed a comprehensive supervision system of the Discipline Inspection Commission, which integrates the functions of political supervision, discipline inspection and supervision, rectification and supervision, audit supervision and organizational supervision, formulated the Comprehensive Supervision List for the year 2023 (《公司2023年度綜合監督清單》), and developed an information-based management platform for comprehensive supervision. With these efforts, comprehensive supervision can be exercised in an information-based and systematic manner.
- 2 The Company has strengthened supervision over the “top leaders” and the leadership team, making the “five strengthening”<sup>9</sup> requirements the focus of supervision, and regularly report on the main work carried out to supervise the “top leaders” and the leadership team.
- 3 The Company has established the integrity archives of middle-level management cadres of the Company’s Party Committee and implemented dynamic management.
- 4 The Company strictly assesses the integrity when appointing and promoting cadres to prevent the promotion or appointment of any cadre with improper conduct.
- 5 The Company has strengthened special supervision in key areas such as engineering, technological economy, procurement and tendering, and organized symposiums for personnel in key positions to share work-related insights and experience, discuss the risks of integrity in their own fields, jointly study preventive measures, and put forward effective practices for the prevention and control of integrity risks.
- 6 The Company has stepped up efforts to prevent and control risks in its overseas projects, and formulated the Implementation Details on Governance of Overseas Corruption (《公司境外腐敗治理工作實施細則》). A unified approach that combines audits and inspections is adopted to coordinate the examination, prevention and control of integrity risk. The Company has assigned dedicated personnel to conduct on-site inspections at Tuas Power to further ensure that overseas projects are operated with integrity.



## Promoting the “three non-corruptions”<sup>10</sup>

- 1 The Company strengthens the standardized management of letters, visits and reports, strictly implements the Detailed Rules for the Implementation of the Discipline Inspection Commission of the Company (Trial) (《公司紀委執紀工作實施細則(試行)》), and sets up reception places, recording phones, reporting mailboxes, etc. to receive letters, visits and telephone reports.
- 2 The management of complaint reporting and problem clues shall adhere to the principles of centralized management, standardized procedures and strict discipline, strictly implement the handling procedures according to the management authority, and establish a management ledger.
- 3 The personnel of the Company’s Discipline Inspection Commission strictly implement the confidentiality system and avoidance system, strictly control the scope of knowledge of the review and investigation work, and are not allowed to privately retain, conceal, read, extract, copy, or carry clues to issues and information related to the case, as well as to disclose the review and investigation work.
- 4 We have improved the mechanism for assisting in investigation and evidence collection, developed the Form of Transferring Relevant Evidence and Documents (《協助調取有關證據材料審批表》) and the Form of Providing Relevant Evidence and Documents (《協助提供有關證據材料審批表》) to further standardize the investigation and evidence collection process and review.

<sup>9</sup> Strengthening supervision over the loyalty to and practices of the Party’s principles of the “top leaders” and the leadership team; strengthening supervision over implementation of the Party’s lines and policies and the CPC Central Committee’s major decisions and plans, and practices of “two uphold” (uphold Comrade Xi Jinping’s core position on the Party Central Committee and in the Party as a whole and uphold the Central Committee’s authority and its centralized, unified leadership); strengthening supervision over understanding of the new development stage, application of the new development philosophy, creation of a new development dynamic, and promotion of the high-quality development; strengthening supervision over the responsibility body and supervision body for full and rigorous Party self-governance; strengthening supervision over the implementation of democratic centralism, the compliant discharge of duties and use of power, responsibilities, and the integrity and self-discipline.

<sup>10</sup> “No one dares to be corrupt, no one can be corrupt, and no one wants to be corrupt.”

### Strengthening Integrity Campaigns

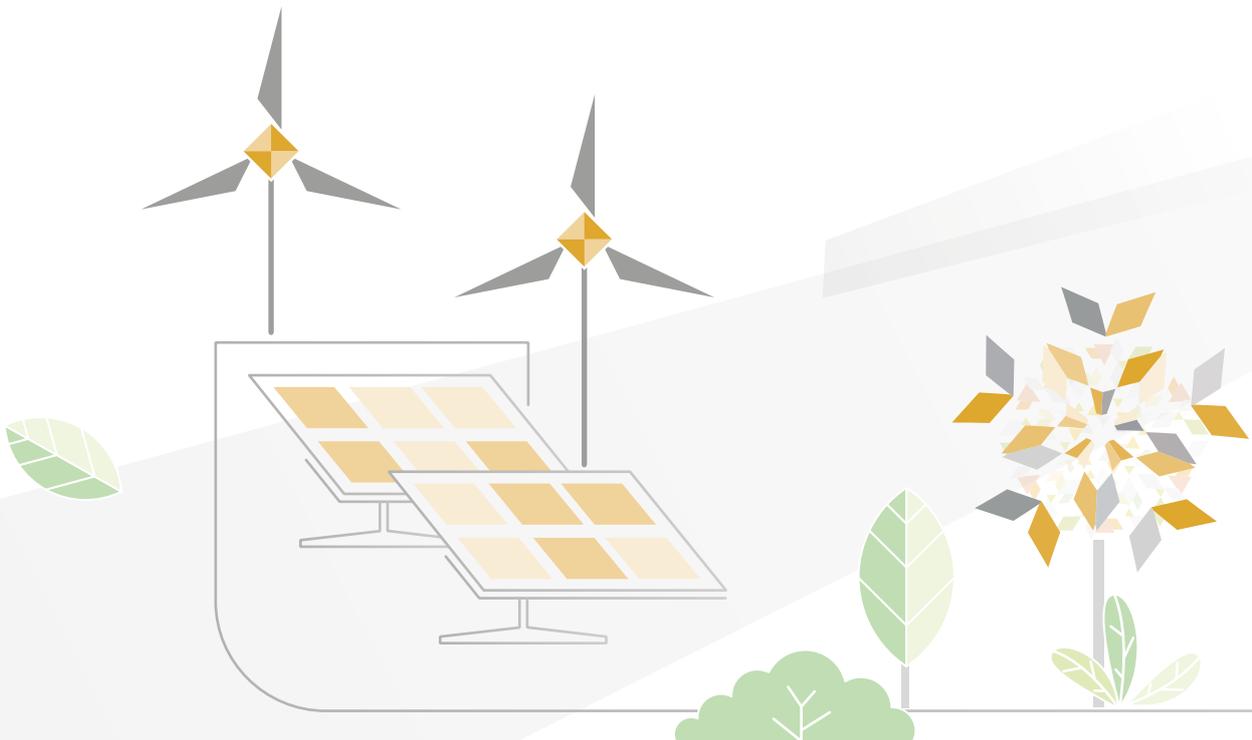


- 1 The Company sends integrity message at important moments. On major holidays such as New Year's Day, Spring Festival, Labor Day, Dragon Boat Festival, Mid-Autumn Festival, and National Day, by sending integrity messages and issuing Job Alert (《工作提示》), we urge cadres at all levels to uphold integrity, frugality, and high moral standards.
- 2 The Company conducts special governance on "petty corruption" by issuing work plans, rectifying the corruption issues and reinforcing the clean culture. In addition, self-inspection and self-correction for "petty corruption" are encouraged with countermeasures as a must.
- 3 The Company coordinates the supervision of the repair and maintenance of company vehicles and the self-inspection as well as self-correction on parcel delivery service. Vulnerabilities identified through inspection are deeply analyzed to investigate the root causes, with supervision advice letters issued to improve the Company's management policies.

### Conducting Education on Professional Integrity



- 1 The Company practically carries out disciplinary interviews under the "four forms". The Company formulated the disciplinary interview plan under the "four forms" in 2023. We urge reasonable interview time arrangement and send reminders on a regular basis to ensure smooth progress of interviews as scheduled. Throughout the year, 50 routine interviews were conducted.
- 2 The Company holds onto the warning education on integrity. The Company conducts integrity practice lectures for young leaders, prepares and organizes training on the Guidelines on Integrity Culture (《廉洁文化教育手册》), and organizes key posts in fields of engineering and technological economy to visit the Base of Warning Education on Comprehensive Strict Party Governance in Beijing. During the year, 27 warning educations were conducted, through which we further raised employee awareness of self-discipline and integrity. A solid foundation for uprightness and entrepreneurship was laid for the Company.





### Facilitating the Construction of Discipline Inspection Teams

- 1** To carry out education and rectification targeted at the discipline inspection team, the Company has formulated the Task Lists of Discipline Inspection Committee's Education and Rectification (《公司紀委教育整頓工作計劃任務清單》), in which 43 particular rectification items are specified. In addition, the Company formulates the Learning Plan for Discipline Inspection Committee's Education and Rectification (《公司紀委教育整頓學習計劃》), in which learning contents are specified and learning mechanism are established to develop the training class "Watch, Learn and Discuss".
- 2** The Company intensifies training for full-time and part-time discipline inspection personnel. We organized 7 trainings on discipline inspection and supervision for discipline inspection personnel, and distributed training materials for them to consistently improve their political awareness of and competence in discipline inspection.
- 3** The Company attaches importance to strengthening self-supervision. Through daily work exchanges, and routine interviews, we conduct strict education, management and supervision for discipline inspection personnel to prevent them from "being blind to their own problems".



### 4.2.3 Protection of Intellectual Property Rights

The Company earnestly implements the decisions and arrangements of the central government on protection of intellectual property rights to further enhance the protection of intellectual property rights, and thoroughly implements the requirements of the Outline for Building a Powerful Country with Intellectual Property Rights (2021-2035) (《知識產權強國建設綱要(2021-2035年)》) and the Plan for Protection and Application of Intellectual Property Rights for the 14th Five-Year Plan Period (《“十四五”國家知識產權保護和運用規劃》) so as to facilitate the high-quality development in patent and technological innovation of the Company. The Company constantly establishes and improves the intellectual property rights protection systems, and based on patents-related needs, unremittingly refines the requirements and policies for intellectual property rights agency to open and optimize channels for patent application, guarantee the efficiency of patent application, and promote the steady development of quality and quantity of patents.

To effectively strengthen the strategic layout of intellectual property rights, the Company launched a special project for patent enhancement, and cooperated with professional organizations to optimize the cooperation mechanism, integrate resources and coordinate and carry out patent application and renewal based on the Company's management conditions. By now, the Company has established a collaborative working mechanism between its business departments, legal departments, and intermediary agencies to effectively support patent applications and maintenance. Meanwhile, we further enhance the application and protection of the Company's international patents, standardize the management, development and application of intellectual property rights, refining the protection mechanism for technological achievements and facilitating the formation and application of technological innovation and proprietary intellectual property rights. By the end of 2023, the Company obtained 3,856 patent authorizations for the year, including 617 invention patent authorizations, 3,239 utility model patent authorizations and 320 overseas patent authorizations.

In 2023, the Company strictly followed the Patent Law of the People's Republic of China (《中華人民共和國專利法》), the Copyright Law of the People's Republic of China (《中華人民共和國著作權法》), the Trademark Law of the People's Republic of China (《中華人民共和國商標法》), the Rules for the Implementation of the Patent Law of the People's Republic of China (《中華人民共和國專利法實施細則》), the Regulations for the Implementation of the Copyright Law of the People's Republic of China (《中華人民共和國著作權法實施條例》), the Detailed Rules for the Implementation of the Trademark Law of the People's Republic of China (《中華人民共和國商標法實施條例》) and other laws and regulations related to intellectual property rights, abided by the international conventions and general standards related to protection of intellectual property rights to ensure that the Company is protected in the ownership and use of intellectual property rights under applicable laws, and received no punishment or lawsuit from the government for intellectual property infringement in 2023.



### Formulating Patent Improvement Measures

Patent quality is an important indicator to measure technological innovation. The heads of the Company's secondary unit division and the chief engineers took the lead in establishing a special working group to explore the establishment of a responsibility system for technological innovation headed by the chief engineers, deeply integrating the patent work with scientific research, planning, infrastructure and technical transformation of production, and formulating patent improvement measures appropriate to the Company.

### Strengthening Trainings for Intellectual Property Rights

The Company actively conducts research on the compliance management of intellectual property rights. We organize patent work trainings within the system and complete the patent application and protection as well as the trademark protection and publicity to improve the patent application knowledge of frontline employees and guide all units to achieve Industry-University-Research-Practice cooperation, in an effort to promote joint application, ownership and use of patents.

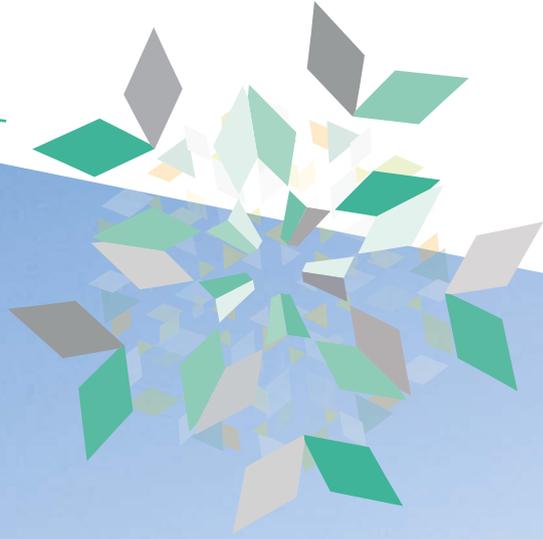
### Protecting and Maintaining Intellectual Property Rights

Huaneng International attaches great importance to the protection and maintenance of intellectual property rights, and requires all units to strictly follow relevant laws, regulations and policies. In accordance with the management requirements, the Company constantly improves and optimizes the top-level design. In the light of the Measures for the Management of Trademarks and Fonts of the Company (《商標及字號管理辦法》), we continuously strengthen the protection for intellectual properties such as core technologies, trademarks and fonts, improve the mechanism for dealing with impostor enterprises, proactively investigate the unauthorized use of our trademark, fight against infringement, and prudently decide on the transfer and licensing of core intellectual property rights, so as to safeguard the legitimate rights and interests of the Company. Meanwhile, the Company further enhances all-round management of core technical secrets and business secrets and reinforces competition restrictions on key talents in possession of the Company's core technology secrets. With respect to intellectual property rights of others, we, adhering to the principle of full respect and proper use, define the scope of use, methods, prohibited acts and liability for breach through a license agreement to use such intellectual property in a legal and compliant manner. In addition, the Company establishes and improves the coordination mechanism between intellectual property rights agencies and Legal Department of the Company so as to better handle disputes arising from intellectual property rights, enhance risk control and establish a multi-level intellectual property protection system.

### Strengthening the Management of Patent Information

The Company establishes a patent information management system covering the whole process. Starting from the patent application, we dynamically monitor and maintain the patent information using technological means, and link all patents to relevant project, realizing full tracking management throughout the life cycle of patent including its application, authorization, maintenance, achievement transformation and expiration.







# 05

## *TRANSFORMATION DEVELOPMENT DRIVEN BY INNOVATION*

Huaneng International upholds the concept of green development and responds to the global trend of green and low-carbon transformation, participating in building a new type of electricity and energy system, continuously developing clean energy such as photovoltaics and wind power, vigorously promoting energy conservation and carbon reduction, enhancing energy utilization efficiency, and resolutely advancing the high-quality development path of green and low-carbon, effectively playing the role of a vanguard in the transformation of energy and power.

# TRANSFORMATION DEVELOPMENT DRIVEN BY INNOVATION

6 CLEAN WATER AND SANITATION



7 AFFORDABLE AND CLEAN ENERGY



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



13 CLIMATE ACTION



14 LIFE BELOW WATER



15 LIFE ON LAND



## 5.1 Deepening the Energy Revolution

Based on the new era, new journey, new mission and new positioning of listed companies, Huaneng International is committed to ecological civilization construction, vigorously developing clean energy, continuously optimizing industrial layout, actively engaging in technological innovation, intensifying environmental protection efforts, enhancing resource utilization efficiency, promoting the construction of a green management system, and driving enterprise green development. President Xi Jinping has stated the goal to have CO<sub>2</sub> emissions peak before 2030 and achieve carbon neutrality before 2060, and the Chinese government's response to climate change has been accorded as a major strategy for national economic and social development. The country vigorously develops a green economy and earnestly promotes various emissions reduction measures as core climate change policies.

The 14th Five-Year Plan period is the first five years of a new journey towards building China into a modern socialist country in an all-round way, the start of a new normality in China's economic and social development, as well as a crucial period for developing Huaneng International into a world-class listed power generation company. In the meantime, Huaneng International strives to promote the development of low-carbon and clean energy by continuously improving the development quality, and advanced business transformation and upgrading by introducing low-carbon and clean energy power units. We proactively adapted to the development of the power generating industry to accelerate the green development.

In 2023, Huaneng International moved towards the goal of "carbon peaking and neutrality", focused on promoting the full utilization of low-carbon clean energy, continuously improved the proportion of installed capacity of low-carbon clean energy, and vigorously facilitated the development and construction of new energy projects such as PV and wind power generation, achieved significant growth in the low-carbon clean energy installed capacity.

The Company has been optimizing the energy structure. In detail, we coordinate energy security and green development, deepen the supply-side structural reform to thoroughly drive the high-quality development. We promote the development of new energy and transformation of coal power, prioritize the development of gas and other clean energy, and actively plan strategic emerging industries to achieve an integration of sources, network, loads and storage and a pattern of multi-energy complementary development.

### Developing New Energy Vigorously

The Company gives priority to quality and benefit, and adheres to the principle of "adopting centralization and decentralization, and focusing on self-sustaining development", actively participates in building new power system and new energy system. The Company continued to focus on green development, vigorously developed new energy and made full use of the favorable conditions for the centralized development of new energy in the country's "Three-North", coastal regions, southwest and part of the central China, and further built an energy base of "base type, clean type, and complementary type; intensification, digitalization, and standardization". The Company developed and constructed offshore wind power bases in areas such as Guangdong, Jiangsu, Zhejiang, Shandong and Liaoning, and actively planned a new model of scattered and distributed development throughout counties. The Company actively implemented major regional strategies of the State, such as Guangdong-Hong Kong-Macao Greater Bay Area, Yangtze River Delta and Beijing-Tianjin-Hebei, to integrate ourselves into the new development pattern.

## Huaneng Guangdong Shantou Lemen (II) 594 MW Offshore Wind Farm Project

On December 30, 2023, the full capacity of Huaneng Guangdong Shantou Lemen (II) Offshore Wind Farm Project was connected to the grid, which is the first offshore wind power project invested by Huaneng in Guangdong and is also a key project in the 14th Five-Year Plan of Guangdong Province. The project is located in the southern sea area of Nan'ao Island, Shantou, with a total installed capacity of 594 MW, 54 sets of 11 MW direct-drive offshore wind turbines, and the construction of a 220 kV offshore booster station and an onshore switching station. The project adheres to innovation drive, creating a number of national firsts, and a number of technical applications to fill the gaps in the industry. Among them, the 11 MW localized direct-drive offshore wind turbine led by Huaneng has been successfully demonstrated and applied in the project, and the core key components such as blade carbon fiber materials, main bearings, pitch system and converter IGBT have all been localized, and the weight of the support structure has been reduced by 3% compared with the original design value. Meanwhile, it also innovatively adopts the world's largest copper-core smooth aluminum sheathed cable system with 220 kV voltage level, and demonstrates for the first time in China the application of 66 kV wet lightweight marine cable and other new technologies. The project is expected to provide about 2 billion kWh of clean power annually, save 650,000 tons of standard coal, reduce carbon dioxide emissions by 1.8 million tons, which is equivalent to planting 5,200 hectares, with significant economic, social and environmental benefits, and is of great significance in promoting local energy transformation and accelerating the realization of the "carbon peaking and carbon neutrality" goal.



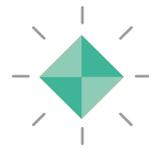
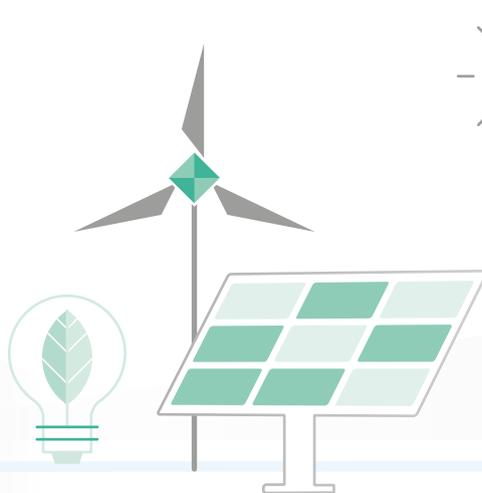
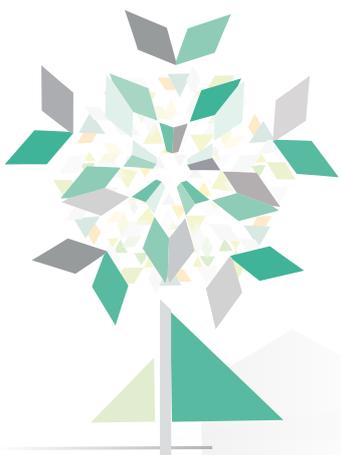
Huaneng Guangdong Shantou Lemen (II) 594 MW Offshore Wind Farm Project

### Huaneng Hainan Lingao 600,000 kW Offshore Wind Power Project

Lingao offshore wind power project is located in the northwestern sea area of Lingao County, with a planned installed capacity of 600,000 kW, which is one of the key offshore wind power demonstration projects developed and constructed in Hainan Province in the 14th Five-Year Plan. The project was approved on November 22, 2022 and started on December 5, 2023, which is the first offshore wind power project to obtain military approval and officially start construction after the implementation of the new military coordination mechanism by the state, and is also the first offshore wind power project of the Group in Qiong. After completion, it can provide nearly 1.9 billion kWh of green electricity to Hainan annually, equivalent to saving 560,000 tons of standard coal and reducing carbon dioxide emissions by 1.56 million tons, which has significant economic, social and environmental benefits, and is of great significance to the construction of Hainan's clean energy island and the extension of the development of the offshore wind power industry chain.



Huaneng Hainan Lingao 600,000 kW Offshore Wind Power Project



## 150 MW Photovoltaic Power Project of Huaneng Shandong Shanyan

In May 2023, Huaneng Shanyan 150 MW photovoltaic power project was connected to the grid for full-capacity power generation. With a planned capacity of 150 MW, the project is an important part of the national large-scale base of wind power and photovoltaic power – the integrated base for the generation, storage and transmission of 10 million-kilowatt wind power and photovoltaic power in the saline and alkaline land of north Shandong. The project integrates photovoltaic power generation with salt production in 3,353 mu of saline-alkali tidal flat, realizing a circular and mutually complementary mode of “electricity generated on the surface while salt produced in the water”. The project has significantly increased the land utilization rate compared to traditional photovoltaic projects, thus facilitating the efficient integration of “traditional salt industry + green energy”. The project’s annual on-grid electricity can reach 206 million kWh, which is equivalent to saving 61,200 tons of standard coal, reducing carbon dioxide by 195,800 tons and sulfur dioxide by 5,400 tons.



Huaneng Shandong Shanyan 150 MW Photovoltaic Power Project

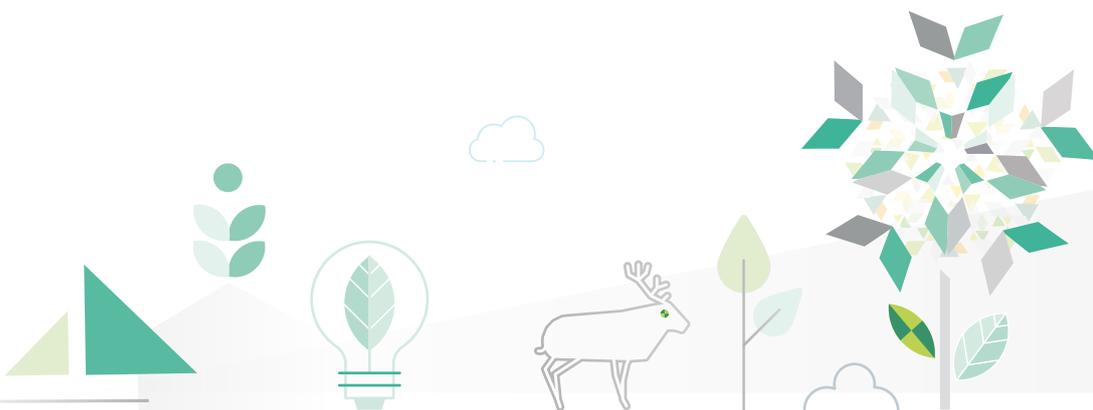


### ▶ Huaneng's 280,000 kW Agriculture-Photovoltaic Power Generation Complementary Project at Qinghe County, Hebei

In November 2023, Huaneng's 280,000 kW agriculture-photovoltaic power generation complementary project was connected to the grid for power generation at Qinghe County, Hebei. With a planned capacity of 280,000 kW and an energy storage system of 56 MW/112 MWh, the project is the largest new energy project and the largest supporting photovoltaic energy storage project in terms of grid-connected capacity in south Hebei this year. The project adopts agriculture-photovoltaic power generation complementary mode and single-axis tracker brackets, which help improve the efficiency of the power generation system by over 10% compared with the traditional ones adopting fixed-tilt tracker, and can provide clean electricity of more than 470 million kWh per year, which is equivalent to saving standard coal of more than 150,000 tons or reducing carbon dioxide emission of 450,000 tons, creating significant economic and ecological benefits.



Huaneng's Agriculture-Photovoltaic Power Generation Complementary Project at Qinghe County, Hebei



## Transformation and Development of Coal Power

The Company will be based on the coal-based national conditions, pay attention to the reality that the proportion of coal power units in the Company is relatively high, comply with the trend of coal power from the main power source to the basic security and system regulation power source providing reliable capacity, peak shifting and frequency adjustment and other auxiliary services, strictly control the incremental amount of coal power, optimize the stock of coal power, adopt advanced and mature energy-saving, heating and flexibility technologies, and realize the “three reforms”. We will adopt advanced energy-saving, heat supply and flexibility technologies to realize “three reforms” and continue to improve the profitability of coal power units, so as to optimize and upgrade the structure of the Company’s coal power generation.

## Optimizing the Development of Gas Power and other Clean Energy

The Company insists on optimizing the development of gas power, biomass and garbage power generation projects, and actively participates in nuclear power generation, so as to enrich the Company’s diversified low-carbon and clean energy technology system. In areas where it is difficult to realize gas prices, where environmental protection requirements are strict, where electricity prices are affordable and where there is a large demand for peaking, the Company focuses on the layout of gas and electricity projects. In regions with large installed capacity of gas turbines, the Company will explore the integrated development mode of gas and electricity by comprehensively considering the use of existing pipeline natural gas, liquefied natural gas (LNG) receiving terminals, self-built LNG receiving terminals, or cooperative development with upstream gas suppliers. The Company actively participates in the centralized incineration and harmless treatment of urban sludge and the utilization of sewage resources in water-scarce cities, develops agricultural and forestry biomass power generation in an orderly manner, and accelerates the planning and construction of the Yangtze River Economic Belt, the ecological protection of the Yellow River Basin, and the comprehensive environmental protection management of northern cities. On the basis of a large proportion of shares in Hainan Changjiang nuclear power phase I, Shidao Bay nuclear power, Xiapu nuclear power, the Company made great efforts in participating in nuclear power investment and broadening the channels of its future profitability.

## Coordinated Planning for Strategic Emerging Industries

The Company takes the initiative to adapt to the transformation of the national energy supply structure, insists on digitalization as a means to actively develop strategic emerging industries. We plan the development of energy storage in a comprehensive manner, exploring the innovation of “new energy + energy storage” mode in various forms such as self-consumption mode, sharing mode, leasing mode, etc., to enhance the stable supply of new energy power; exploring and researching on the change of the energy system brought by the large-scale development of hydrogen energy, and actively participating in the demonstration project of the green hydrogen industry.

Relying on the policy environment and market mechanism, the Company develops various forms of energy storage based on new energy development and regional peak demand. We innovate energy storage application scenarios and adopt various business models to develop, utilize and share large-scale energy storage power stations. In regions with high demand for grid frequency regulation and concentration of renewable energy, we invest in energy storage projects with better returns on the power supply side; in regions with large differences in peak and valley electricity prices, we invest in energy storage projects on the load side. On the premise of reasonable returns, we will actively develop other energy storage technologies.

The Company pays close attention to other strategic emerging industry projects, and actively seeks investment opportunities for project development cooperation, reorganization, and merger and acquisition of assets.



## 5.2 Inspiring Independent Innovation

Huaneng International adheres to serving national strategies, following the development of new energy systems in the country, accelerating the promotion and application of various advanced practical technologies, and actively exploring effective pathways and methods for the deep integration of digital technology and lean management. The Company is committed to becoming an innovation-driven enterprise by adhering to the improvement of technological innovation as the main line, continuously enhancing our innovation capability, earnestly investing in research and development, optimizing the systems for technology innovation decision-making and management, and relentlessly developing innovation platforms to accelerate the development of the Company.

### Innovation Management

The Company implements the new development concept in an all-round way. We earnestly implement the decisions and arrangements of the central government and the SASAC on technological innovation, thoroughly practice the technological innovation strategy, and vigorously embrace the challenges and opportunities in technological innovation arising from the “carbon neutrality” and the new round of revolution in the energy industry. In alignment with the strategy of serving the country and the major demands for the Company’s development, we focused on strategic emerging and future industries, improved our competence in independent innovation and significantly raised the industrialized level of technological achievements by adhering to making breakthroughs in key technologies, attaching great importance on improving innovation systems and mechanisms, and relying on strengthening the construction of technological talent teams and innovation platforms. In addition, we take the lead in technological innovation to support and usher in the high-quality development of the Company, while accelerating the construction of an international first-class listed power generation company to promote the high-quality development of the domestic energy industry.

In 2023, Huaneng International was committed to serving the national strategies and accelerating innovative development. We strengthened efforts to tackle key and core technologies in an effort to facilitate the national major strategies. The Company’s offshore wind power projects have passed the comprehensive performance evaluation by the Ministry of Science and Technology of the People’s Republic of China; High-temperature materials projects have passed the acceptance check and over 10 technological breakthroughs were achieved; R&D of the independent gas turbine operation and maintenance project has been completed and prepared for acceptance and the three self-owned independent technologies were included in the Catalogue for the Recommendation on Scientific and Technological Innovation Achievements of Central Enterprises; A joint technological innovation taskforce for “100% High-alkali Coal Use” has been established. The Company’s “R&D and Applications of Cybersecurity Platform for Power Generation” won the first prize of 2023 Electric Power Scientific and Technological Progress Award, and the “R&D and Applications of Cybersecurity Technological Innovation and Service Supporting Platforms for Power Generation Industry” won the first prize of 2023 Electric Power Technological Innovation Award. Luoyuan Power Plant has successfully put a supercapacitor energy storage system with the world’s largest capacity of 5 MW into operation. Yangliuqing Power Plant explored the comprehensive value-adding utilization of slag, successfully developing new insulation fiber materials and applying them to the renovation of Yutaoyuan residential compound and other projects.



**Build the brand of Huaneng Jiangsu offshore wind power technology and empower the sustainable development of enterprises**

The total installed capacity of Huaneng Jiangsu Clean Energy Branch exceeds 3.3 million kW, of which the installed capacity of offshore wind power is 2.5114 million kW. The scale of offshore wind power accounts for 21% in Jiangsu Province, and it governs a total of 13 offshore and onshore wind farms. In 2023, Huaneng Jiangsu Clean Energy Branch closely focus on the major technological needs of industrial development, strengthens the development and demonstration of cutting-edge and leading technologies, and participates in three national key research and development projects and one group level science and technology project; Focus on practical on-site issues, actively leverages the vitality of “double innovation”, and applies for 7 co-creation projects. The intelligent inspection technology for offshore wind power has made new breakthroughs, and the Company’s first independently developed underwater intelligent inspection robot (ROV underwater robot) and the first unmanned inspection technology for offshore wind turbine blades without shutdown have been applied in the field. Huaneng Jiangsu Clean Energy Branch will continue to carry out the construction of Huaneng Jiangsu offshore wind power technology brand, continuously improve its visibility, and promote the long-term benefits of technology characteristic brands.



Unmanned Inspection Technology for Offshore Wind Turbine Blades without Shutdown



Underwater Intelligent Inspection Robot for Offshore Wind Power





## Innovation Achievements

- 1 Approved by the National Energy Administration to build the third batch of the first (set of) “100% High-alkali Coal Slag-tapping Boiler (major technical equipment);
- 2 Through the 700℃ high-temperature materials project, we independently developed a new nickel-iron-based material for 650℃ /700℃ units and completed the trial production of parts to form technical specifications and enterprise standards. High-temperature boiler tubes have passed the standard acceptance review of China Standardization Committee on Boilers and Pressure Vessels;
- 3 A number of technical achievements of the independent gas turbine project are applied to the maintenance and operation of power plants such as Nanjing Gas Turbine Power Plant, Zhongyuan Gas Turbine Power Plant, Suzhou Gas Turbine Power Plant, Liangjiang Gas Turbine and other plants;
- 4 The achievements of the energy-saving project on deep peak load regulation process of coal-fired units were applied as demonstration to the 600MW units of Weihai Power Plant, reducing the coal consumption of power supply by no less than 1.5g/kWh;
- 5 Through the project of verification of key technology improvement for carbon dioxide capture and utilization, we developed a new type of carbon capture solvents and process technologies and built and put into operation China’s first set of carbon dioxide capture equipment for fuel gas and flue gas with a capacity of 2,000 tons/year at Yangpu Thermal Power Station;
- 6 With respect to network security R&D, we have built the network security simulation and verification environment, which is accredited as the “national power network security range” by the National Energy Administration;
- 7 Relevant tests and certifications have been completed regarding the project of key technologies for the localization of five types of high-precision chemical instruments for power stations and the transformation of technical products has also been carried out;
- 8 A total of 4 (sets of) fully China-made, independent and manageable DCS have been applied as demonstration and 70 (sets of) were promoted;
- 9 Luoyuan Power Plant has built a supercapacitor energy storage system with the world’s largest capacity of 5 MW.

## Development Directions

Huaneng International puts technological innovation in a more prominent position according to the requirements of the Company’s strategic development. The Company vigorously increases investments in the R&D of strategic emerging industries and technologies of future industries and strengthens and consolidates the funding for basic, forward-looking, long-term and revolutionary large-scale scientific research programs, thus continuously breaking technological bottleneck and strengthening the Company’s technological capability for transformation and high-quality development. Our next step will focus on cybersecurity, offshore wind power, intelligent heating, energy storage, the capture, storage and utilization of carbon dioxide, and the distributed energy management technology used for new power systems; we will strengthen the research of key core technologies and accelerate R&D progress to further enhance independent innovation and core competence. The Company advances key projects and tasks required for the Company’s production safety, infrastructure, management and development in a unified and coordinated manner. In addition, we strive to maintain leading technical and economic performance indicators in environmental protection, materials, operation and maintenance and heat supply, forming a high-quality patent system that leads domestic and international peers.

Meanwhile, to meet the requirements of major national strategies and needs of the Company’s operation and development, the Company will actively facilitate the cultivation and transformation of technological achievements to achieve innovation-driven and technology-led development. The Company will accelerate the application of independent scientific and technological achievements such as energy conservation and flexibility of thermal power plants, high temperature materials, and engineering of high-alkali coal slag-tapping boiler. The Company will scale up the application of the independent and manageable R&D achievements of the technologies that were once dependent on foreign supplies to accelerate the realization of intrinsic safety of the Company’s key power infrastructures.

## 5.3 Practicing Low-carbon Environmental Protection

Chinese-style modernization is a modernization where humans and nature coexist harmoniously. In 2023, the Company kept reducing carbon emissions in line with the goal of “carbon peaking and carbon neutrality”, carried out the rating work of units in an all-round way, and promoted the energy-saving upgrading and transformation of coal-fired power, and high-quality heat supply renovation. These were effectively implemented with the goals of improving major technical and economic indicators and realizing energy consumption indicator’s “leading positions in overall energy consumption efficiency”, under the principles of improving the quality of energy management, focusing on energy consumption indicator benchmarking and ensuring key generating units’ outstanding performance. In 2023, the Company did not incur any environmental accident that was defined as major or above grade.

### 5.3.1 Overall Planning

Committed to being an industry leader in overall energy consumption indicator and ultra-supercritical unit energy consumption indicator, Huaneng International has successively formulated rules and regulations, such as the Measures for Energy Saving Management (《節能管理辦法》), the Regulations on Environmental Protection Management (《環境保護管理規定》), the Standards and Acceptance Measures for Energy Saving and Environmentally Friendly Coal-Fired Power Plants (《節約環保型燃煤發電廠標準及驗收考核辦法》), and the Incentive Measures for Achievement of Energy Efficiency Excellence and Enhancement in (Ultra-) Supercritical Power Units (《超(超)臨界機組能耗指標創優及能耗指標提升獎勵辦法》), and effectively implemented energy saving and consumption reduction responsibilities. The Company actively promotes coal-fired power units’ energy saving and emission reduction, plans to carry out energy saving and environmental protection renovations annually, and has successfully fulfilled its targets and responsibilities of energy saving and emission reduction to ensure that the Company’s coal-fired units continuously lead in energy conservation and environmental protection and maintain its competitive advantage, contribute to the reform of the national energy production and consumption and enhance the clean and efficient development of coal power generation.

### 5.3.2 Energy Consumption Management

Huaneng International adheres to Xi Jinping’s ecological civilization ideology, implements the spirit of the National Conference on Ecological and Environmental Protection, and the opinions on comprehensively promoting the construction of a beautiful China. The Company will deepen the fight against pollution, focus on safeguarding blue skies, clear waters, and clean land, and cultivate a green foundation for high-quality development. During its development, the Company strictly abides by the Environmental Protection Law of the People’s Republic of China (《中華人民共和國環境保護法》), the Energy Conservation Law of the People’s Republic of China (《中華人民共和國節約能源法》) and other relevant laws, strictly guard against environmental risks and resolutely enhance the green image of Huaneng. The installed capacity of clean energy in the Company is constantly increasing, and the proportion of coal-fired power generation installed capacity is decreasing year by year. In 2023, the company’s thermal power units consumed 133.7057 million tons of standard coal, 42,482.78 tons of production oil, 6,027.3358 million cubic meters of natural gas, and 291.88 g/kWh of coal for power supply. The electricity consumption rate of the production plant was 4.33%.



## Management Objective

The Company is taking multiple measures and making concerted efforts to maintain a good level of energy efficiency each year. In light of this goal, with the more frequent peak-valley cycling operation of units and the gradual saturation of the heating market, the space for reducing coal consumption for power generation has been further squeezed. In 2023, the Company tapped into the potential for energy savings in existing thermal power generation, implemented deep energy-saving transformations for some units, actively carried out optimization of unit overhauls, operation adjustments, and technical supervision measures and other measures. As a result, the cumulative coal consumption for power generation of the Company's thermal power units was 291.88 g/kWh, and the main energy consumption indicators continued to maintain a good level.

## Management Mechanism

The Company's regional branches are responsible for the energy saving management. In accordance with the Law of the People's Republic of China on Conserving Energy (《中華人民共和國節約能源法》), and with the consideration of the Company's actual operations, we have formulated the Measures for Energy Saving Management (《節能管理辦法》), the Incentive Measures for Achievement of Energy Efficiency Excellence and Enhancement in (Ultra-) Supercritical Power Units (《超(超)臨界機組能耗指標創優及能耗指標提升獎勵辦法》), the Standards for Energy Saving and Environmentally Friendly Coal-Fired Power Plants (《節約環保型燃煤發電廠標準》), the Acceptance Measures for Energy Saving and Environmentally Friendly Coal-Fired Power Plants (《節約環保型燃煤發電廠驗收考核辦法》), the Measures for the Selection of Advanced Energy Saving Units (《節能先進單位評選辦法》) and the Implementation Plan for the Comprehensive Upgrading and Retrofitting and Energy Saving Replacement of Coal-Fired Power Plants (《燃煤電廠綜合升級改造及節能替代實施方案》) and other regulations and work guidelines for energy conservation.

During the construction period, each project formulates the Overall Planning of Green Construction Project (《綠色建造工程總體規劃》) to specify detailed plans for the quantitative control of construction water and electricity indicators, and establishes the Implementation Plan and Rules of Green Construction Project (《綠色建造工程實施方案與細則》) and the Measures for Green Construction, Energy Saving and Emission Reduction (《綠色施工及節能減排措施》), and other management policies to define specific control measures.

With respect to the energy saving target, the Company maintains its leading position in energy consumption indicators by vigorously developing heat supply renovation, implementing energy-saving projects and practicing effective energy saving management measures. Huaneng International strengthens the budget management of energy consumption indicators and has formulated special assessment regulations to ensure that each unit can achieve optimal consumption of coal, electricity, oil, natural gas, etc. The Company adopts an approach that combines goal management and process management. Firstly, we set the annual energy consumption indicators taking into account specific energy efficiency level of each grassroots power generation unit and carry out assessment on the degree to which the reference target is met. Secondly, regarding those units which have difficulty in meeting the target or unsatisfactory energy consumption outcome, the Company will arrange on-site inspection performed by professionals, who then carry out comprehensive investigations according to specialties and systems, provide recommendations and take remedial measures to ensure the fulfillment of target energy saving and emission reduction assigned by the State and the Company, and ensure that the Company's coal-fired units maintain the leadership in energy saving.

## Management Measures

In 2023, the Company continued to aim towards the leading position in key energy consumption performance indicators and focused on energy saving and consumption reduction measures in three areas, namely management, structure and technology. With the concerted effort of various units, the Company has maintained its industry-leading position in terms of its achieved key energy consumption performance targets by various key energy attributes.

**On energy saving through management**, we improved the three-level energy saving management system, optimized the three-level energy saving supervision network for grassroots units and introduced energy saving indicators into basic-level units' performance management. First, we strengthened the management of energy saving targets by following up with units that were behind the annual energy saving targets and holding conversations with key units. Second, we enhanced the implementation and management of energy saving and consumption reduction responsibilities by urging a breakdown of the responsibilities of all personnel in regional branches and grassroots thermal power plants by job nature for looking after energy saving-related tech-economic indicators, made everyone assume energy saving and consumption reduction indicators to raise energy saving awareness. Third, we enhanced benchmark checking for power units of the same type to identify discrepancies against management, technology, safety, fuel and market benchmarks and improve energy saving management. Fourth, we initiated the selection of advanced energy saving units and benchmark power plants, promotion of the review and verification of energy saving and environmental protection excellence power plants, and a reward system for energy saving excellence and enhancement with incentive funds, and evaluation as well as encouragement of pioneering and improvement of energy consumption indicators.

**On energy saving through structure**, first, we organized various units to explore their heat supply potential and tap into a wider heat supply market according to local conditions. Second, we urged regional branches to optimize their operating capacity through electricity transfers and enabled low energy consumption power units to generate more power. Third, we suggested that grassroots units promote energy saving economics to increase the output coefficient of their power units where policies permit. Fourth, we reinforced fuel procurement and management of blended coal for combustion to ensure that the heating value of coal for combustion is consistent across all power plants and remained at a high level for ultra-supercritical power units.

**On energy saving through technology**, we focused on promoting the transformation of existing power units for thermoelectric power cogeneration, facilitating the clean and efficient utilization of coal with a further enhancement to energy utilization. In 2023, the Company's overall energy saving indicator and the energy consumption indicators of 7 key models (e.g., 1,000 MW ultra-supercritical wet cooling, 600 MW ultra-supercritical wet cooling, 600 MW supercritical wet cooling, 600 MW supercritical air cooling, 600 MW sub-critical wet cooling, 350 MW standard wet cooling and 300 MW standard wet cooling) maintained a leading position in the industry. In 2023, The Company's 27 wind farms achieved excellent performance in wind power operation efficiency of power industry in 2022. In 2022, the Company's 55 units won the prizes in thermal power energy efficiency of the power industry in 2022 and 13 demonstration cases were rated as the coal-fired units exemplary cases of technological improvement in the "Three Improvements" namely, improvements in energy conservation and carbon reduction, flexibility, heating supply in 2023.

**In terms of engineering construction**, the Company formulates reasonable construction energy consumption indicators to improve construction energy utilization. To reduce the energy loss caused by various media, we require all project groups to improve system proposals at the stage of preliminary design and arrange equipment in a reasonable and compact manner while ensuring safe operation and convenient maintenance of the equipment. Compact equipment arrangement is adopted for the main powerhouse and production buildings to shorten the length and span of the main powerhouse, which reduces building lands and powerhouse volume; Appropriate structures and light wall materials are adopted to reduce the load of buildings, thus saving steel and cement. Local materials such as sand, stone, lime and bricks are prioritized for engineering construction and materials are procured in neighboring areas in the case of insufficiency to reduce transportation. The Company gave priority to the use of energy-saving, efficient, and environmentally friendly construction equipment and machinery, preferred to use energy-saving construction process, rationally reduced the time for night work through reasonable arrangement of construction procedures and progress with sharing of construction machinery, and carried out construction and commissioning in a refined manner to strive for the success the first time of each trial operation and test with consideration of trial operation condition of power units at all stages.

In 2023, the Company made steady progress with positive momentum in its production and environmental protection. In terms of equipment management, reliability was improved year by year and outperformed industry peers. In terms of energy saving and consumption reduction, the equivalent availability coefficient of the unit has increased year by year, and the energy efficiency of thermal power units remained industry-leading for many years. The Company paid close attention to optimizing the energy consumption and achieving the environmental protection targets, and stepped on a new journey of high-efficiency and low-carbon development. The Company strived for excellence of energy consumption indicators, guided and assisted backward power units, and conducted the applications of advanced energy-saving technologies such as wide-load high-efficiency power generation and generalized regeneration in a targeted manner. The leading advantage of key models was continuously consolidated. In addition, the Company consistently drove the green and low-carbon development.

In the future, the Company will continue to promote the transformation of existing power units for thermoelectric power cogeneration technology, implement energy-saving technical retrofits of existing power units and deepen the application of generator unit ratings to facilitate management improvement.

### Huaneng Beijing Thermal Power Plant's Waste Heat Utilization Project of Flue Gas from Gas Turbines Was Put into Operation at Full Capacity

In November 2023, the world's largest heat waste utilization project of flue gas from gas turbines – Beijing Thermal Power Plant's Waste Heat Utilization Project of Flue Gas from Gas Turbines was put into operation at full capacity. The operation of the project has increased power plant's heating capacity by 263 MW, expanded the heated area by more than 5.3 million square meters, saved about 70 million cubic meters of natural gas and reduced carbon dioxide emissions by about 130,000 tons, which is of great significance for improving energy efficiency and optimizing the energy structure of Beijing.



Beijing Thermal Power Plant

### 5.3.3 Water Resources Management

Huaneng International strictly follows the government's requirements for the protection of fresh water, we will vigorously promote the comprehensive treatment of water-saving and wastewater from thermal power plants and issued the Guiding Opinions for Thermal Power Plant's Water Saving and Wastewater Treatment (《火電廠全廠節水及廢水綜合治理指導意見》) to guide and push forward the plant-wide water-saving and wastewater comprehensive treatment work. The main water consumption of Huaneng International is for generating electricity with power units, replenishing water for closed circulating water, and wet desulphurization, etc. Surface water, urban water, and a small amount of groundwater, etc. are used for generating power, and river water or sea water is used for circulating. In 2023, the overall water consumption of the Company was 18,660.85 million tons, the freshwater consumption for power generation was 386.27 million tons, the open cooling circulation water consumption was 18,274.58 million tons, and the performance value of freshwater consumption for power generation was 0.81 kg/kWh.

#### Management Objective

By 2025, the Company is committed to devoting greater effort in the transformation of water conservation for the purpose of zero discharge of wastewater. To achieve the objective, the Company strengthened efforts in the transformation of water conservation, and approved and launched water conservation transformation projects such as the end wastewater treatment of Liaocheng Thermal Power Plant in 2023.



## Management Mechanism

In accordance with the Company's management systems for technical supervision, maintenance, technical transformation and energy conservation, the various thermal power plants have established a set of water consumption management systems and procedures, which include:

- 1 A water management system has been established and managed by professional personnel, who shall formulate rules for water usage, instruments maintenance and management, etc. All water usage sectors and professionals conduct regular maintenance and calibration for water metering, water quality testing instruments and water-usage equipment, etc., so as to eliminate unreasonable water usage.
- 2 An account management system has been constructed, including the whole plant account and drainage account, water quality monitoring, water metering instrument basic information table, equipment installation location and parameter table, records of instrument test, calibration and maintenance, etc. They also regularly calculate the water management indicator of the whole plant, and the water usage account is based on the actual monitoring data.
- 3 According to the principles of shunting sewage and clean water, classification and recovery, and disposal and reuse, the Company comprehensively utilized various wastewater of the plant area and reduced discharge rate.

## Management Measures

In 2023, Huaneng International comprehensively launched the water saving and wastewater treatment work plan in its power plants. As at the date of the report, all subordinate power plants enforced the water saving and wastewater comprehensive treatment. Upon the treatment, the freshwater consumption for power generation has met the criteria set out in the Standards for Energy Saving and Environmentally Friendly Coal-Fired Power Plants of the Company (《節約環保型燃煤發電廠標準》), with wastewater discharge meeting the requirements set out in the waste discharge permits and local environmental regulations.

In 2023, the Company faced no imminent threats in terms of tapping water resources. To address the water shortage risk, the Company adopted a precise management approach for water supply and consumption based on the Guiding Opinion for Thermal Power Plant's Water Saving and Wastewater Treatment (《火電廠全廠節水及廢水綜合治理指導意見》) to refine the criteria for recycle of water and classification of use of water and reduce the fresh water consumption. Currently, the projects of water saving and wastewater treatment of all plants in key areas such as Beijing-Tianjin-Hebei and neighboring "2+26" cities, Yangtze River Delta and Fen-Wei Plain are advanced in an orderly manner.

The Company requires project groups to prepare reports on resource conservation at the stage of preliminary design and take practical and effective measures in the construction of "sponge city" in accordance with the requirements of regions where projects are implemented; In addition, these groups are required to carry out research of water-conservation engineering facilities such as water for multiple uses and wastewater reuse to achieve zero wastewater discharge of new units for water conservation and environment protection. During the construction period, the Company's infrastructure projects respectively determined domestic water and construction water quota indicators based on the characteristics of projects and on-site construction conditions, and conducted calculation and assessment management separately. When a service contract was signed with the construction unit, the water conservation quota indicators were included in the contract terms for calculation and assessment. A reusable water collection and treatment system shall be established at the construction site to make water resources available for cascade recycling, rainwater collection tanks shall be set up to recover rainwater, which will be used for road spraying, vehicle washing and greening after treatment, domestic sewage treatment stations shall be designed, constructed and put into use in advance, and all the domestic sewage in the construction area will be treated by the sewage treatment stations, and the treated water shall be reused for secondary recycling applications such as vegetation greening and road spraying. The Company's water resource consumption during the construction of various projects shall be kept within the scope of management objectives.

### Jurong Island Desalination Plant Project of Singapore Tuas Power Ltd. was Connected to the Grid and Put into Operation

On March 30 2023, Jurong Island Desalination Plant, invested by Singapore Tuas Power Ltd., was put into commercial operation, with a daily production capacity of 30 million gallons, or approximately 137,000 cubic meters of drinking water, making it the fifth desalination plant in Singapore and as an important infrastructure playing an important role in supporting the supply security of Singapore's drinking water. The plant will collaborate with Tembusu Multi-Utilities Complex (TMUC) to facilitate Tuas Power's transformation from an electricity provider to a comprehensive energy services provider and assist Tuas Power in further expanding its market in Singapore and enhancing its influence in Southeast Asia, which is another important milestone for the sustainable development of Singapore's water resources and a new driver for the Company's diversified operation and international development.



Tuas Power Desalination Plant



### 5.3.4 Emissions Management

The Company abides by laws and regulations such as the Environmental Protection Law of the People's Republic of China (《中華人民共和國環境保護法》), the Law of the People's Republic of China on Prevention and Control of Environmental Pollution Caused by Solid Wastes (《中華人民共和國固體廢物污染環境防治法》), Atmospheric Pollution Prevention and Control Law of the People's Republic of China (《中華人民共和國大氣污染防治法》) and the Law of the People's Republic of China on Prevention and Control of Pollution from Environmental Noise (《中華人民共和國環境噪聲污染防治法》), and in accordance with the national policies on environmental protection and policy documents regarding ecological environment and energy conservation and emission reduction and the requirements of relevant authorities, the Company has put forward the plan to become a first-class enterprise for environmental protection based on the aim to build a world-class listed power generation company and in consideration of its actual situation. In addition, the ultralow emission transformation, water saving and wastewater treatment, and comprehensive utilization of solid waste are fully deployed. The Company attaches great importance to the discharge management of pollutants. All thermal power units are required to install desulphurization, denitration and dust removal devices and wastewater treatment and other environmental protection facilities. We strengthen the operation, maintenance and repair of environmental protection facilities, and strictly abide by the requirements of sewage permits, and the discharge of pollutants meets national standards and territorial requirements.

During the construction period, the Company attached great importance to ecological and environmental protection by carrying out green construction and carried out in-depth treatment of dust, noise, garbage and wastewater to minimize the negative impact on the environment. The constructors and all parties engaged in the construction established a green construction management system, and formulated management systems such as the overall planning of green construction project, the implementation plan and detailed rules of green construction project and the measures for green construction and energy saving and emission reduction, which were independently defined in the general design of the engineering construction organization with detailed regulations on green construction and environmental protection. The quantitative control targets for controlling emissions during the green construction process were clarified with specific pollution control measures. The Company's construction projects strictly implemented the requirements of "Three Simultaneity"<sup>11</sup> for environmental protection, in accordance with various environmental protection work and environmental protection measures recommended by the environmental impact assessment approval. In addition, we strengthened the stable operation of environmental protection facilities, ensured the emission of pollutants met the standards, and entrusted an environmental protection supervisor to supervise, inspect and guide the implementation. The Company requires that the storage, discharge, and disposal of waste comply with national laws and local policies. We also cooperate with qualified third parties to deal with waste and strengthen waste recycling to minimize waste emissions.

#### 5.3.4.1 Exhaust Gas Management

The exhaust gas discharged by Huaneng International is mainly carbon dioxide, sulphur dioxide, nitrogen oxides and dust generated from its subordinate power plants during the process of combustion in the coal-fired unit boiler. The Company's emissions of sulphur dioxide, nitrogen oxides and dust were 27,249.01 tons, 57,485.68 tons and 3,618.14 tons respectively, with emission performance values of 0.06 g/kWh, 0.13 g/kWh and 0.01 g/kWh respectively.

#### Management Objective

We completed the coal field enclosure retrofits in key areas such as the Yangtze River Delta and Fen-Wei Plain by the mid-term of the 14th Five-Year Plan and strictly enforced the local authority's requirements of fugitive emissions to ensure that there is no major environmental protection safety accident during the 14th Five-Year Plan period. In 2023, the Company completed the coal field enclosure retrofits in Haikou and Nantong and continued the coal field enclosure retrofits in key areas such as the Yangtze River Delta and Fen-Wei Plain with strict enforcement of the local authority's requirements of fugitive emissions.



<sup>11</sup> Facilities for pollution prevention should be designed, constructed, and implemented simultaneously with the construction project.

## Management Mechanism

The Company formulated the Regulations on Environmental Protection Management (《環境保護管理規定》), Measures for Evaluation and Accountability for Environmental Protection Work (《環境保護工作考核及責任追究辦法》), Operation Management Rules (《運行管理規定》), Overhaul Management Rules (《檢修管理辦法》), Technical Supervision Management Measures (《技術監督管理辦法》) and Management Measures for Capital Expenditure in Electricity Generation (《電力生產資本性支出項目管理辦法》) and others to ensure the progress on the work related to ecological environment protection and air pollution prevention and control projects.

The Company made full use of its internal information platform to grasp the situation of excessive emission, focused on the analysis of events with long duration, seriously excessive emissions and typical cases, and guided all units to learn from one another and take active measures to improve the Company's overall environmental protection management capability. In addition, giving consideration to the promotion of annual key tasks, major projects, air quality assurance tasks, etc., the Company launched environmental protection inspections irregularly to ensure active and effective rectification of the environmental protection risk.

## Management Measures

To enhance waste gas management, the Company has taken the following measures:

- 1 Enhancing the supervision and implementation of work tasks. The Company has enhanced the review management of environmental protection renovation projects, optimized review procedures, secured renovation investment, strengthened supervision and management of key processes such as bidding process, and inspected and supervised key work tasks to carry forward the pollution prevention and control tasks.
- 2 Ensuring effective clean production. The Company has continuously maintained the safe and reliable operation of environmental protection facilities, strengthened real-time monitoring of pollutant discharge, ensured discharge compliance, and controlled pollutant discharge in accordance with requirements set out in the pollutant discharge permit to secure a leading position in terms of pollutant discharge in the industry.
- 3 Successfully completed the air quality assurance tasks. The Company has ensured good air quality during key hours and weathers with serious pollution, ensured effective pollution prevention and control in key regions such as Beijing-Tianjin-Hebei and neighboring region, Yangtze River Delta and Fen-Wei Plain, and fully adopted measures such as load reduction of diesel trucks, non-peak-hour transportation and control of fugitive emissions to fulfil the Company's social responsibilities.



## Work Achievements

With careful maintenance of the desulphurization and denitration equipment and facilities of coal-fired units, the Company has maintained a stable standard emission, and completed the flue gas ultra-clean renovation of all the Company's domestic coal-fired units. The capacities of ultra-low emission units have reached 100%.

### ▶ The Organizational Standard for Denitrification Prepared Under the Leadership of Huaneng Nanjing Gas Turbine Power Plant Was Released and Implemented

Huaneng Jiangsu Nanjing Gas Turbine Power Plant took the lead in the formulation of the organizational standard for denitrification, the Operation Specifications for the Flue Gas Urea Direct Injection Denitrification System of the Gas Turbine Unit (《燃氣輪機機組煙氣尿素直噴脫硝系統運行操作規範》), which has been officially released and implemented. Aiming at the issues of core safety and quality control during the operation of the flue gas urea direct injection denitrification system of the gas turbine unit, the specification regulates the fundamental technical requirements and operating methods of operation management from dimensions of operation monitoring, system operation, equipment management, accident prevention and response and others, providing the energy industry with an important technical standard to support the operation and management of the flue gas urea direct injection denitrification system of the gas turbine unit.



Huaneng Nanjing Gas Turbine Power Plant

### ▶ China's First Equal-capacity Coal Power Replacement Project of Huaneng Shidongkou No.1 Power Plant Was Completed and Put into Operation

On May 25, 2023, China's first equal-capacity coal power replacement project was completed and put into operation at Huaneng Shidongkou No.1 Power Plant, and the project is equipped with globally advanced coal-field enclosure technology "Eurosilo". As China's first coal-field enclosure retrofit project with Eurosilo technology and the world's first Eurosilo built on soft soil, the project will play an important role as a demonstration of ecological environmental protection and urban green development.



Huaneng Shidongkou No.1 Power Plant

## Future Plan

First, the Company will continue to drive its pollution prevention and control efforts, focus on environmental protection transformation projects in key regions, including close-down of coal field, wastewater treatment, and ash field treatment for power plants, while expediting pollution prevention and control projects such as ultra-low emission renovation for clean energy heating units in the northern region.

Second, the Company will continuously promote clean production practices, enhance permit-based waste discharge management, ensure effective management and control for air quality in key hours and weathers with serious pollution, strengthen the inspection management for environmental protection supervision at different level and improve the prevention and emergency response for public opinion risk related to environmental protection.

Third, the Company will maintain vigorous environmental protection supervision and management, strictly comply with the requirements set out in the Environmental Protection and Pollution Control Accountability Measures (《生態環境保護及污染防治攻堅工作責任追究辦法》), strengthen supervision and site inspection to ensure effective supervision and management of the implementation of air pollution prevention and control tasks, etc.

Fourth, the Company will optimize environmental protection standard system, promote the research and development and application of technologies such as integrative removal of pollutants and comprehensive energy saving and environmental protection transformation, and summarize experience from demonstrative projects to provide guidance to other projects.

### 5.3.4.2 Management of Greenhouse Gas

In 2020, China made a solemn commitment to reach “carbon peaking” by 2030 and achieve “carbon neutrality” by 2060. During the 14th Five-Year Plan period, the Company will promote the green transformation and increase the use of clean energy. In specific, great efforts will be made to strengthen the transformation of environmental protection equipment of coal-fired units, and to reduce energy consumption and carbon emission through the optimization of management, structure and technology, etc., thereby succeeding in lowering the Company’s carbon emission intensity.

By staying up on relevant national policies regarding carbon emission and carbon trading, the Company actively participates in the construction of the national carbon market, and issues regulations on the administration of carbon trading, which specifies the carbon trading management institutions and responsibilities, along with the requirements of carbon trading preparation, transactions and contract performance and risk management, etc. As part of our efforts to “peak carbon dioxide emissions” and achieve “carbon neutrality”, we take part in carbon trading via the national carbon market in a steady and orderly manner, so as to fulfil our obligations concerning carbon emission in the second performance period for 2021-2022.

On March 15, 2023, the Ministry of Ecology and Environment issued the Notice of Implementation of Relevant Work on Distribution of National Carbon Emission Rights Trading Quota for 2021 and 2022 (《關於做好2021、2022年度全國碳排放權交易配額分配相關工作的通知》(國環規氣候(2023)1號)). According to the Quota Distribution Plan, the performance unit shall settle its quota payment for the second compliance cycle (2021-2022) by the end of 2023. In 2023, all of the Company’s thermal power units in operation fulfilled the carbon emission requirements, and the relevant carbon emission data for 2021-2022 was disclosed. The 2023 carbon emissions data will be subject to data verification and trading performance in the third performance period, and the related policy on the implementation program for the setting and allocation of the total amount of quota has not yet released. Therefore, the 2023 carbon emission data involve business confidential and temporarily would not be disclosed. The Company will disclose relevant data after completing performance tasks.

### Carbon Reduction Goals

The Company’s carbon reduction target is: through structural adjustment and energy saving and consumption reduction efforts, the Company will achieve carbon peaking as early as possible, and the Company’s full-caliber carbon emission intensity will gradually decline during the 14th Five-Year Plan period. The Company will implement in-depth renovation in energy conservation by unwaveringly accelerating green transformation, increasing the proportion of clean technologies and further exploring the energy-saving and carbon-reduction potential of the existing thermal power plants; In addition, the Company will actively explore the heating market, continuously enhance the performance in clean and low-carbon power generation. In 2023, the Company’s comprehensive carbon emission intensity reduced year on year.

## Carbon Asset Management

The Company carried out the following work:

- 1 The Company actively participated in the construction of the national carbon trade market, and delved into key management rules for the carbon market, including regulations on the administration of carbon trading, quota allocation plan, and accounting methods for carbon emission.
- 2 The Company issued regulations on the administration of carbon trading, specifying the management institutions and their responsibilities, along with various requirements of transactions and contract fulfillment and risk management. The Company promotes centralized and professional management of carbon trading. Professional institutions were therefore engaged to provide one-on-one professional services for the grassroots enterprises, and carbon trading-based business training was also held, so as to continuously improve management capability on the carbon trading, thus aligning its management model with the national carbon market.
- 3 The Company advocated refined management of carbon trading and dynamic calculation on quota surplus and deficit of grassroots enterprises, made the annual trading work arrangement, and carried out some transactions in advance to reduce the performance pressure arising from the carbon trading at the end of the performance period.
- 4 With the successive implementation of domestic policies on green power, green certificates and voluntary emission reduction as well as the gradual establishment of relevant trading market, the Company takes the advantage of large-scale operation and coordinates electricity, carbon and green certificate markets through a combination of electricity retail channels and user base to strive for the environmental benefits of new energy projects.

## Participation in National Carbon Emission Trading Market

According to the Notice of Implementation of Relevant Work on Distribution of National Carbon Emission Rights Trading Quota for 2021 and 2022 (《關於做好2021、2022年度全國碳排放權交易配額分配相關工作的通知》(國環規氣候〔2023〕1號)) issued by the Ministry of Ecology and Environment of the People's Republic of China, the carbon emission baseline will be lowered, and quota issuance will be significantly tightened. The Company coordinated the planning of annual performance trading in the second performance period, organized the preparation of the carbon trading scheme, and formulated the budget plan for trading funds to ensure the trading is carried out successfully, and all the departments under the Company completed the two-year performance tasks of carbon emissions on time.

## Huaneng Yangpu Thermoelectric Cogeneration Power Station Project Was Successfully Put into Operation

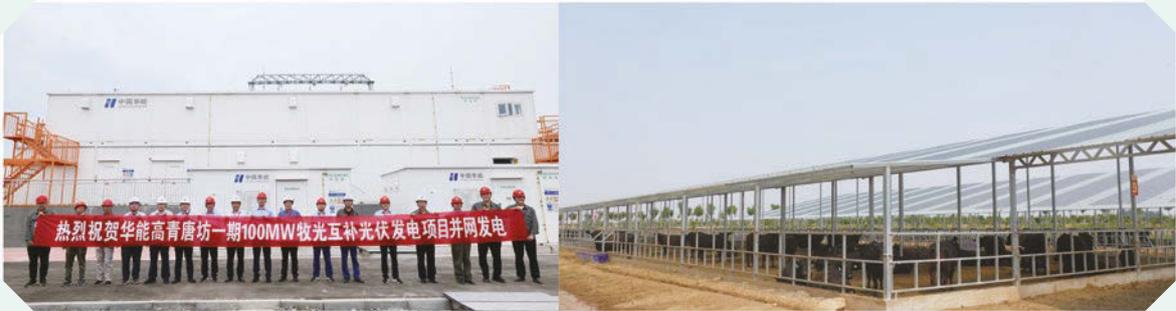
In July 2023, China's first set of 2,000 tons/year carbon dioxide capture equipment for fuel gas and flue gas was successfully put into operation at Huaneng Hainan Yangpu Thermoelectric Cogeneration Power Station. Currently, the R&D of carbon dioxide capture technology for fuel gas and flue gas is in its infancy. Compared with coal-fired power plants, the carbon dioxide concentration of flue gas produced by gas-fired power plants is lower and the separation process is more difficult, which makes it more difficult to reduce the cost. Therefore, Huaneng Clean Energy Research Institute has independently developed carbon dioxide capture technology for fuel gas and flue gas, which is embedded in the power plant's generation system as a whole to extract carbon dioxide of high concentrations from fuel gas and flue gas. The equipment proves the effectiveness of the new carbon capture solvent and process technologies, the dynamic operation mechanism of capturing and strategies. With the equipment, we achieved the synergistic control and operation of carbon capture equipment and gas-fired power plants for peak load regulation, which provides technical support for gas turbine units to achieve low-cost and low-carbon emission operation in future.



Huaneng Yangpu Thermoelectric Cogenerated Carbon Capturer

## The Largest Pastoral-photovoltaic Power Generation Complementary Project in Shandong – Huaneng Gaoqing Tangfang Phase-I 100 MW Capacity Was Connected to the Grid for Power Generation

Huaneng Shandong utilizes the regional rich pastoral resources to build a new mode of comprehensive utilization of new energy innovation, black cattle breeding and crop cultivation. In August 2023, Phase-I 100 MW capacity of Huaneng Gaoqing Tangfang 300 MW pastoral-photovoltaic power generation complementary project – the largest pastoral-photovoltaic power generation complementary project in Shandong as well as the first large-scale pastoral-photovoltaic power generation complementary project of Huaneng Group. The project adopts the mode of “under-shed farming and above-shed power generation”, with a total planned capacity of 300 MW, covering an area of about 4,500 mu. The first phase of the project is expected to provide about 117 million kWh electricity annually after connected to the grid, which can save 35,700 tons of standard coal and reduce carbon dioxide emissions by 92,900 tons per year compared with thermal power, thus obtaining economic benefits, social benefits and ecological and environmental benefits.



Phase-I 100 MW capacity of Huaneng Gaoqing Tangfang Pastoral-Photovoltaic Power Generation Complementary Project Is Connected to the Grid to Generate Power

### Future Plan

Firstly, we will strengthen our research and analysis of policies for carbon market, and revise the carbon emission management regulations in a timely manner according to the national policies regarding carbon market. We will further clarify major responsibilities of the management at all levels, build up an efficiently functioning management system and process system at all levels, and continue to strengthen the unified and professional management of carbon emissions.

Secondly, we will strengthen the management of supervision and assessment of carbon emission indicators, expand the scope of online monitoring on carbon emission of flue gas, and implement the routine management of carbon emission data. In addition, we will strengthen the analysis and comparison of carbon emission data, and quantify the comprehensive impacts of changes in carbon trading costs on energy conservation and emission reduction, blended coal fuel, market bidding, and the construction of new thermal power plants.

Thirdly, we will study the trading mechanism of carbon market and explore innovative trading management while ensuring risks are controllable to continuously reduce the costs of carbon trading and performance fulfillment and enhance our resistance to risks in the carbon market.

Fourthly, we will accelerate our progress in green and low-carbon transformation, facilitate the development of renewable energy, and continuously increase the proportion of electricity generated by non-fossil energy; We will improve the clean and efficient utilization of coal to continuously reduce carbon emissions from all sources.

Fifthly, due to successive implementation of policies for green certificate and voluntary emission reduction in 2023, the Company will continue to take advantage of large-scale operation and coordinate multiple markets for synergistic efficiency enhancement to strive for the environmental benefits of new energy projects.

Sixthly, we will coordinate the in-depth energy conservation and emission reduction and increase the investment in the “three improvements” to enhance unit’s adaptability to economical coals and wide-load. We will improve the indicators for energy conservation and carbon reduction and facilitate centralized clean and efficient heat supply.

### 5.3.4.3 Wastewater Management

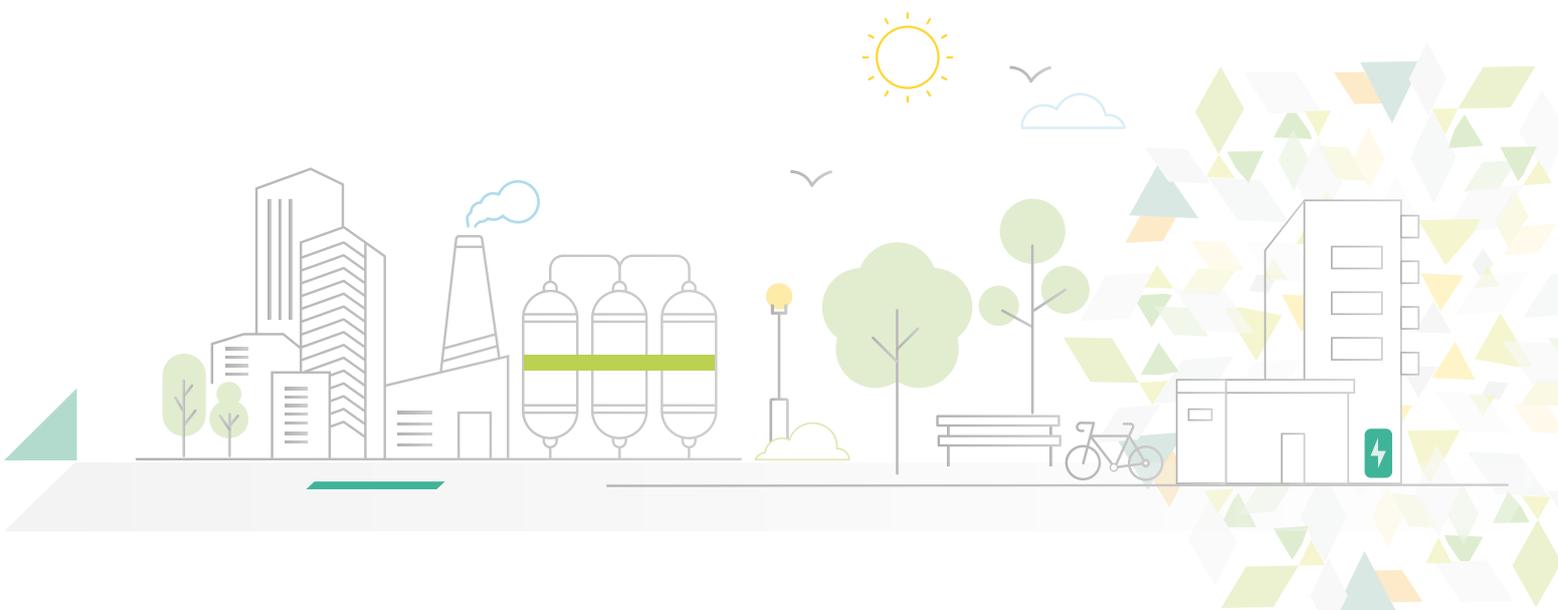
The Company, with coal-fired power generation as its main business, generates a certain amount of wastewater in the process of electricity production, including those from the concentration of steam turbine circulating cooling water, the wet desulphurization facilities, the auxiliary production facilities of the generator set, the coal field flush as well as sanitary sewage.

In 2023, the total water discharge of the Company amounted to 15,367.03 million tons, the discharge of open cooling circulation water totaled 15,342.09 million tons, and the total discharge of sewage (including industrial and desulphurization wastewater) from operation was 24.94 million tons. Some of the wastewater was allowed to be discharged when they reached a certain standard after treatment, e.g., wastewater from circulating water; some was reused after treatment and cannot be discharged, e.g., those from desulphurization facilities and coal field flush; and zero discharge is required for certain power plants which were not allowed to discharge any wastewater.

#### Management Measures

The Company adopted the following measures in the management of wastewater treatment and discharge:

- 1 The Company rigorously implemented the applicable water pollution prevention and control policies and sewage discharge licensing requirements. All thermal power plants of the Company obtained the corresponding sewage discharge licenses as scheduled.
- 2 Inspection and rectification were carried out against the sewage discharge licensing requirements. A comprehensive pollution prevention and control plan at the company level was formulated based on environmental protection requirements at various levels, and power plant water saving, and wastewater treatment transformation projects were launched in an orderly manner in accordance with the requirements of local governments and environmental assessment.
- 3 The Company performed on-site checks and inspections of environmental protection facilities, including wastewater treatment units.
- 4 The Company built a sound standard system for environmental protection, formulated guiding opinions on water saving and wastewater discharge transformation to ensure the compliance with environmental protection requirements through research and optimization.
- 5 The Company actively adopted the latest wastewater treatment technology and launched wastewater transformation demonstrative projects.



## Circulating Water Discharge System of Huaneng Jingmen Thermal Power Plant Passed Trial Operation

Jingmen circulating water discharge system powered by thermoelectric chemicals passed the trial operation. The system removes pollutants and desalinates the water discharged by the cooling tower through the “ultrafiltration – reverse osmosis” system, and the treated water are recycled and utilized as backup, which practically achieves “zero discharge” of plant’s wastewater and effectively improves the heat utilization in the process of safe production, thus overcoming the environmental problems of the circulating water discharge, saving water resources, and bringing economic benefits for the enterprise.



Water Discharge System of Huaneng Jingmen Thermal Power Plant

### Future Plan

The Company will continue to strengthen water pollution control and promote the enhanced in-depth treatment and comprehensive utilization of industrial wastewater and domestic sewage, as well as launch wastewater zero discharge transformation projects in an orderly manner in areas where specific environmental protection requirements apply.

With the gradual deepening of wastewater treatment work as well as the increased wastewater treatment technology research efforts by domestic tertiary institute, Xi’an Thermal Power Research Institute Co., Ltd. (“Xi’an Thermal”) and Huaneng Clean Energy Research Institute, etc., we will formulate a roadmap for developing practical, reliable and cost-effective wastewater treatment technology. We will gradually carry out thermal power plant water saving and wastewater comprehensive treatment transformation in key areas in order to eventually enable all of the Company’s subsidiary thermal power plants to comply with the updated pollutant discharge licensing requirements, with some reaching even higher standards.

### 5.3.4.4 Waste Management

The Company’s disposal of wastes strictly complies with laws and regulations such as the Law of the People’s Republic of China on Prevention and Control of Environment Pollution Caused by Solid Wastes (《中華人民共和國固體廢物污染環境防治法》) as well as the Company’s regulations including the Regulations on Environmental Protection Management (《環境保護管理規定》), the Measures for Evaluation and Accountability for Environmental Protection Work (《環境保護工作考核及責任追究辦法》), the Management Standards for Solid Waste(《固體廢棄物管理規範》), the Governance and Management Standards for Desulphurization By-products (《脫硫副產品治理管理規範》), the Governance and Management Standards for Fly Ash (《粉煤灰治理管理規範》), etc. The Company requires that the storage, discharge, and disposal of waste comply with national laws and local policies. We also cooperate with qualified third parties to deal with waste and strengthen waste recycling to minimize waste emissions.

### Management Objective

In accordance with the Law of the People’s Republic of China on Prevention and Control of Environment Pollution Caused by Solid Wastes (《中華人民共和國固體廢物污染環境防治法》) and the principles of “reduction, recycling, harmless” in the prevention and control of solid waste pollution, the Company actively promotes the compliant and comprehensive utilization of solid waste and insists on source management with whole-process responsibility system and traceable information management in place. The hazardous waste management plan is filed in accordance with regulations with such waste stored, transported and disposed of as required. The comprehensive ecological protection treatment and transformation for ash disposal area is expected to be completed by 2025. In 2023, Yangliuqing Power Plant, Qinbei Power Plant and others completed renovation projects of ecological protection facilities in ash disposal area.

## Non-Hazardous Waste

Huaneng International's production activities are mainly concentrated in the area of power production and the main solid waste generated during the Company's power generation process includes fly ash and cinder produced during the combustion process of the boiler, and gypsum produced during the limestone wet desulphurization in power plants. In 2023, the Company produced 47.4054 million tons of solid waste, including 37.8879 million tons of fly ash and cinder, and 9.5175 million tons of desulphurized gypsum. The comprehensive utilization rate of fly ash and cinder stood at 83.16% and the desulphurization gypsum disposal utilization rate was 77.01%.

Fly ash and cinder, desulphurization gypsum and other solid waste can be sold as raw materials in related industries, such as cement, concrete, aerated blocks and gypsum board. The Company has established an environmental protection supervision and management system in accordance with the requirements of national and local standards and policies on environmental protection to effectively control the canning, stacking and marketing of fly ash and cinder and desulphurization gypsum.

When loading fly ash and cinder and gypsum, the Company rigorously follows the operational norm for load control, separates the fly ash and cinder from gypsum and controls the load capacity during transportation and conducts thorough check and cleaning before vehicle entry to prevent "escaping, spilling over, dripping and leakage" of solid wastes. Most of the fly ash and cinder and gypsum collected from boilers will be directly transported to the processing plants for secondary use. The Company closely monitors where the by-products of power generation are being transported and how they are going to be used to prevent environmental pollution and public issues that have a negative impact on society.

Some fly ash and cinder in the power plants will be temporarily stored in the ash field, and the Company strengthens supervision and management of the ash field. In accordance with the requirements of local environmental protection authorities, construction and retrofitting of wind-proof and dust control facilities have been carried out to ensure that the storage of ash and gypsum is in line with local environmental protection standards.

In the construction project, the generation of waste is effectively reduced during construction period through relevant measures such as permanent and temporary combination of roads and office locations. The project waste is collected by classification, stored in a centralized way and cleaned up regularly, and corresponding units are entrusted to clear and transport it regularly. The gravel and earthwork construction waste from the project is used as the on-site roadbed backfill material to realize harmless treatment.



### ▶ Huaneng Yueyang Power Plant's First Sludge-blending Equipment Was Officially Put into Operation

In January 2023, Yueyang Power Plant's first sludge-blending equipment was officially put into operation as the first large-scale sludge blending project in Hunan Province. The project adopts the pre-drying carbonization treatment technology for municipal waste, and is equipped with two sets of integrated equipment with a sludge treatment capacity of 300 tons/day, which annually treats 170,000 tons of sludge for Yueyang.



Huaneng Sludge-blending Equipment of Yueyang Power Plant

### ▶ The Direct Sludge-blending Project of Huaneng Mianchi Thermal Power Plant Was Completed and Put into Operation

On 26 March 2023, the direct sludge-blending project of Mianchi Thermal Power Plant was completed and put into operation. The project adopts a new direct sludge-blending technology that can recycle and reduce municipal sludge on a large scale with low costs while causing no damage to the environment; The technology treats 36,000 tons of municipal sludge annually, thus helping to achieve the comprehensive utilization of municipal sludge.



Huaneng Mianchi Thermal Power Plant



## Hazardous Waste

The hazardous waste produced by thermal power units during the process of power generation includes solid waste such as inactivated denitration catalysts and ion exchange resin in water treatment, as well as liquid waste like waste oil produced during equipment operation. Inactivated denitration catalysts and ion-exchange resin can be reused multiple times after regeneration treatment. After multiple uses, the obsolete denitration catalysts, ion-exchange resin and other solid waste that cannot be recycled and reused, and other hazardous liquid waste such as waste oil, will be retrieved by qualified recycling agencies to implement harmless treatment. Power plants strictly manage the generation and disposal of hazardous waste, including detailed statistics on the amount of waste generated, disposed of, and the qualifications of disposal units, etc. In 2023, the Company's power plants were entrusted to professional agencies for recycling and harmless treatment of a total of 8,083.56 tons of scrapped denitrification catalysts, 708.10 tons of scrapped ion-exchange resins and other solid waste, and 1,272.03 tons of liquid waste such as waste oil. With the construction and development of China's new power system, thermal power units are shifting from structural power sources to functional power sources. The paid auxiliary services provided to the power grid, such as peak shaving and frequency regulation, are becoming increasingly frequent and abundant. Equipment wear and auxiliary material consumption are also increasing, and various types of waste will correspondingly increase.

## Future Plan

The Company will continue to strengthen waste recycling and strive to minimize waste emissions. In addition, the Company will well implement environmental protection transformation projects in key regions, including close-down of coal field and treatment of ash field for power plants, etc.

### 5.3.5 Other Environmental Impacts

Huaneng International always handles its operations with great care to minimize their impact on the environment, and performs strict management of noise, dust and the environmental impacts of engineering projects and others in accordance with the Law of the People's Republic of China on Prevention and Control of Pollution from Environmental Noise (《中華人民共和國環境噪聲污染防治法》), etc.

#### 5.3.5.1 Noise Management

During the initial stage of the construction of power plants subordinated to the Company, relevant departments of environmental protection determined the sensitive points of noise along the boundaries of the power plants and their relevant noise control level in accordance with the requirements in the environmental impact assessment approval. Each construction site formulated noise reduction measures in strict accordance with the requirements of the state's Emission Standard of Environment Noise for Boundary of Construction Site (《建築施工場界環境噪聲排放標準》) and performed regular inspection and recording of noise at the construction sites. Noise control during the construction period was mainly to control the noise source. Quiet construction machinery and transportation vehicles were used for each project, and the repair, maintenance and management of equipment, construction machinery and transportation vehicles were enhanced to avoid noise due to malfunctioning. Noise reduction and sound insulation measures have been adopted for major noise sources such as construction machinery and equipment, pipe flushing, sandblasting, and spraying operation, etc. The equipment with substantial noise generation on the construction site was placed on the side further away from the residential area, and these equipment was treated by noise reduction measures such as encasing or setting up noise reduction walls, etc. Steam pipe blowing operations were announced in advance. The noise control during the construction of each project met the national standards. For the environmental completion and acceptance of the power units in all power plants, the monitoring authorities will investigate the site based on the requirements in the environmental impact assessment approval, and only when the monitoring results are qualified will the acceptance concerning noise control pass. During the operation of power units, the power plants commissioned relevant monitoring authorities to investigate the noise control regularly in accordance with the requirements of the environmental protection authorities and published the monitoring reports through multiple ways. The power plants installed acoustic enclosures for major noise sources such as fans and other equipment in the plant and built noise walls for key areas such as the cooling water tower area. When excessive noise happens during events like power units renovation or equipment failures, the Company will implement noise control for equipment that generates excessive noise accordingly.

In 2023, the Company prepared the Design Guidelines for Managing Noise of Gas-Steam Combined Cycle Units (《燃氣-蒸汽聯合循環機組噪聲治理設計導則》) to standardize the noise management design of the Company's gas-steam combined cycle unit projects to align special measures for noise reduction with project conditions. By doing so, we can reduce project costs and enable construction projects to meet the requirements of environment assessment at one time.

### 5.3.5.2 Dust Impact

Unorganized emissions, such as coal field dust, ash field dust and unorganized emissions and others from non-road machinery are also environmental impacts caused by power plants. All power plants owned by the Company are required to obtain the environmental impact assessment approval by the relevant environmental protection departments during their initial stage of construction to avoid severe impact on the surrounding environment and natural resources during operations. The power plants strictly abide by national environmental emission standards during operations and discharge wastes according to the standards. When the requirements of surrounding environment change, the affected power plants actively respond to ensure that the surrounding environment and natural resources are protected. To enhance the management of unorganized emissions from coal yards, the Company has carried out segregated coal field retrofits for key areas and for other areas, the Company introduced wind and dust suppression nets, covers and sprays to effectively control coal dust pollution from coal fields and improve the surrounding environments. In terms of engineering construction, all participating units have carried out construction in strict accordance with the green construction plan and organizational measures, and suppressed the generation of dust by taking measures such as regular spraying and construction road pavement hardening.

### 5.3.5.3 Environmental Impact of Engineering Projects

The environmental impacts of the Company's projects are fully comprehended during feasibility study before the projects enter the approval or filing stage. Following national policies and requirements on environmental protection and the land use planning by the government, the Company avoid choosing location in or near the ecological red lines such as nature reserves or agricultural land to prevent the consequent ecological problems. After the site selection, the Company conducts a systematic survey of the surrounding environment during the feasibility study stage and prepares a detailed environmental management and monitoring plan based on actual condition and relevant regulations. In strict compliance with the environmental protection standards, the Company implements control measures against air pollution, water pollution and noise, actively initiates water and soil conservation design and analyses environmental impact, and accepts assessment on the impact to biodiversity.



The Company requires all infrastructure projects to accept the biodiversity impact assessment before construction, and elaborately design each process from the selection of construction machinery and materials to the verification of various raw materials and noise control. Prior to construction, the Company contemplates on the environmental protection measures for all stages of project construction and operation. During the construction, relevant regulations are strictly obeyed, and construction teams are informed of the national laws and regulations on biodiversity, relevant operating regulations on animal and vegetation protection, and knowledge on animal and vegetation conservation to improve their willingness to biodiversity conservation. Meanwhile, the Company restricts the passage of transportation and construction vehicles in sensitive areas to avoid damage to the surrounding ecological environment. The Company also adopts appropriate biological protection measures during the construction. If wildlife appears and affects the work progress, the Company will suspend the construction and consult relevant professionals for protection and guidance in a timely manner. Construction personnel are prohibited from poaching wildlife and digging local wild plants to avoid impact on biodiversity.

To restore the environment, measures such as land reclamation and vegetation restoration and others are taken after the completion of the construction. Pollutants, electromagnetic noise, other noise, etc. are monitored and treated strictly based on the requirements of relevant laws and regulations on environmental protection. When economic benefits permit, we strive to integrate power generation projects with environmental protection, promote the preliminary investigation and implementation of ecological projects, and make positive contributions to local environmental governance and improvement.





06

*SAFETY  
INITIATIVES*

Safe production relates to the well-being of people and the overall economic and social development. Huaneng International always adheres to bottom-line thinking and red-line awareness, and solidly implements safety management enhancement year action to improve the system and capability of safe production management, thus fundamentally eliminating potential dangers and preventing and resolving major safety risks to ensure the safety of our people and facilitate high-quality development of the Company.



# SAFETY INITIATIVES

3 GOOD HEALTH AND WELL-BEING



4 QUALITY EDUCATION



8 DECENT WORK AND ECONOMIC GROWTH



In accordance with the Production Safety Law of the People's Republic of China (《中華人民共和國安全生產法》) and other production safety laws and regulations, Huaneng International regards safety as its top priority and builds a solid foundation for production safety. Adhering to the production safety principles of “people-oriented, safety first, prevention first, comprehensive management” and upholding the safety conception of “safety is credibility, safety is efficiency, safety is competitiveness, and safety responsibility is of the utmost importance”, the Company pays attention to the inspection and remedy of safety hazards and insists on zero-tolerance policy for safety incidents. In addition, the Company aims to prevent fatal production accident, mishandling of operations with malicious intent, major equipment damage, serious and extraordinary equipment incidents, fire outbreaks, traffic accidents induced by human factors, environmental pollution disasters and other incidents that may adversely affect the Company's reputation. The Company places safety in the first place and attaches great importance to the personal safety and occupational health of our employees. We strengthen the red-line awareness to ensure production safety is properly conducted.

Typhoon, flooding, and other natural disasters are becoming more and more frequent in recent years, and they threaten the life safety and production safety of local enterprises and their employees. The Company has identified five key safety management tasks for this year: (1) continuously carried out inspections and evaluations of the production safety responsibility system, ensured the establishment of a list of responsibilities for each post, standards for the work in place, and accountability mechanisms, sorted out, summarized, and notified common problems to encourage enterprises to rectify jointly; (2) promoted a dual prevention mechanism and made earnest efforts in the implementation of Guidelines for Classified Production Safety Risk Control (《安全生產風險分級管控導則》); (3) vigorously strengthened safety management in infrastructure construction and promoted an intrinsic safety management system in this regard; (4) learned from the accidents and monitored the shortcomings in outsourcing safety management and the system implementation to enhance outsourcing safety management, strictly controlled outsourcing personnel's entry, and enhanced rectifications for violations to ensure construction safety; (5) arranged tasks for safety production and prepared for major floodings during flood seasons to get through the flood season safely. The Company is committed to strengthening the implementation of safety responsibility and outsourcing management to mitigate the impact of natural disasters on employees and production safety through the above key tasks.

In 2023, there was no significant violation identified in the Company related to providing a safe working environment and protecting the employees from occupational hazards. In 2023, the number and ratio of employee occupational death were 0. In 2022, the number and ratio of employee occupational death were 0. In 2021, there was 1 occupational death, and the ratio was 0.0017%.

## 6.1 Strengthening Intrinsic Safety System

According to the national laws and regulations on production safety, the Company, taking actualities of its subsidiaries into consideration, has established its own fourfold Intrinsic Safety System, which comprises intrinsic safety of personnel, process equipment, environment and management, including:

### Ensuring Intrinsic Safety of Personnel

Intrinsic safety of personnel includes management staff and all employees' safety awareness, safety conception and safety management knowledge and skills. Management staff are required to have safety management knowledge and skills and lead by example, while employees are required to ensure safe operation by carrying out adequate controls. The safety behaviors of employees should gradually change from passive to active, and we urge employees to act in accordance with rules and regulations and show good safety behavior everywhere.

### Ensuring Intrinsic Safety of Equipment

Intrinsic safety of equipment refers to that equipment, facilities, or process technologies possess inherent mechanisms for accident prevention. We adhere to high design and manufacturing standards and conduct systematic safety risk analysis for all stages, including the construction stages such as process adoption and equipment design, etc., as well as the routine inspection and maintenance during operation. We also proposed and implemented risk control measures and installed proper protection mechanisms for our processes and equipment to ensure the safe, stable and normal operation of equipment and systems within the prescribed operating period and maintain effective control throughout the time.

### Ensuring Intrinsic Safety of Environment

Environment includes spatial environment, physical and chemical environment, natural environment, etc. For the intrinsic safety of the spatial environment, we make sure that the production space, layout, various safety and sanitation facilities and passages comply with the state's relevant regulations and national standards. For the intrinsic safety of the physical and chemical environment, effective measures are taken to manage and control lighting, ventilation, temperature and humidity, noise, dust and toxic and harmful substances in compliance with national standards to ensure workers' health and safety. As for the intrinsic safety of the natural environment, we enhance the disaster resistance and prevention capabilities of process and equipment and implement emergency response and precautionary measures.

### Ensuring Intrinsic Safety of Management

Intrinsic safety of management requires, under the condition of abiding by the national laws and regulations, companies' formulation and implementation of higher standards on safety, norms, and regulations, as well as their development of a comprehensive management system. In respect of safety management, we are transitioning from post-incident based to identification-based in our safety management, and we are emphasizing more on process controls rather than remedial efforts when responding to safety incidents. We also seek to apply safety system engineering principles and conduct scientific analysis in formulating pre-emptive measures.

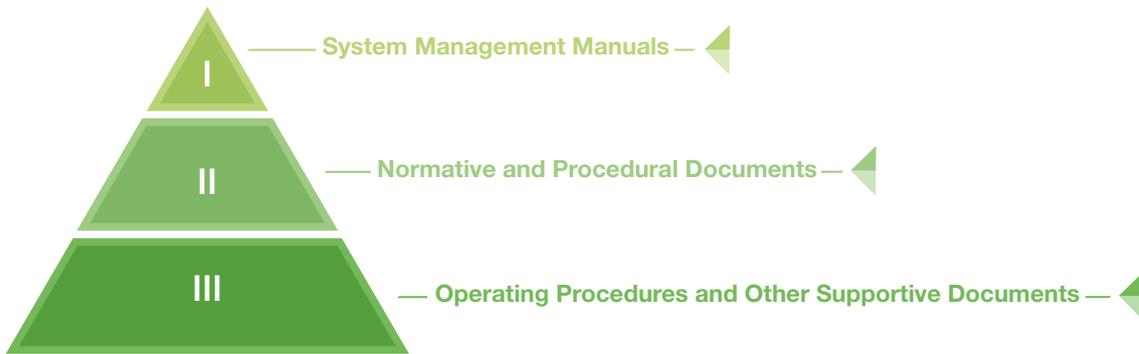


### The PDCA Management Model of Intrinsic Safety System

The Company's Intrinsic Safety System follows the PDCA management model, e.g., PLAN, DO, CHECK and ACTION, and this loop-closed system can enable continuous improvement. The management model consists of six key elements: leaders' commitments, policies concerning safety, health and environment, planning, implementation and operation, inspection and corrective measure, and management review.



The Company's documents concerning Intrinsic Safety System consist of system management manuals, normative and procedural documents, as well as operating procedures and other supportive documents. Some major documents include the Administrative Measures for Production Safety Supervision (《安全生產監督工作管理辦法》), the Regulations on Production Safety (《安全生產工作規定》), the Implementation Rules for Safety Performance Assessment (《安全績效考核實施細則》), and the Emergency Management Measures for Major Incidents (Accidents) (《重大突發事件(事故)應急管理辦法》), etc.



In 2023, the Company continued to develop its intrinsic safety system:

- 1 To implement the decisions and plans of the CPC Central Committee and the State Council, the Company re-emphasized, re-arranged and re-implemented the energy supply guarantee work proposed in the national “NPC & CPPCC”. Through the “Year for Enhanced Safety Management” action, the Company carried out in-depth inspection and evaluation, supervised all units to strengthen the safety governance of key areas and weak links, further implemented the safety accountability mechanism, and built a solid defense line to improve production safety level and get prepared for the summer electricity peak and flood control, thus promoting the construction of an intrinsic safety enterprise.
- 2 The Company continued to focus on the potential risk investigation and clearance in the key areas and important links. We increased the frequency and intensity of on-site safety inspections, and went to Luohuang Power Plant and others to participate in the production safety responsibility inspection, and urge handling and rectification of irregularities.
- 3 With in-depth analysis and evaluation of the production safety situation, the Company implemented the dual prevention mechanism combining classified risk control and potential risk investigation and clearance, to ensure that the production safety of each unit was operated in a stable and orderly manner.
- 4 For extreme weather events such as typhoons, rainstorms, mudslides and geological disasters, the Company further clarified responsibilities at all levels, consolidated the foundation for production safety management during the winter power peak period, refined the emergency response plan, and strengthened emergency drills to comprehensively upgrade the level of intrinsic safety and ensure that the production safety was controllable and under control.

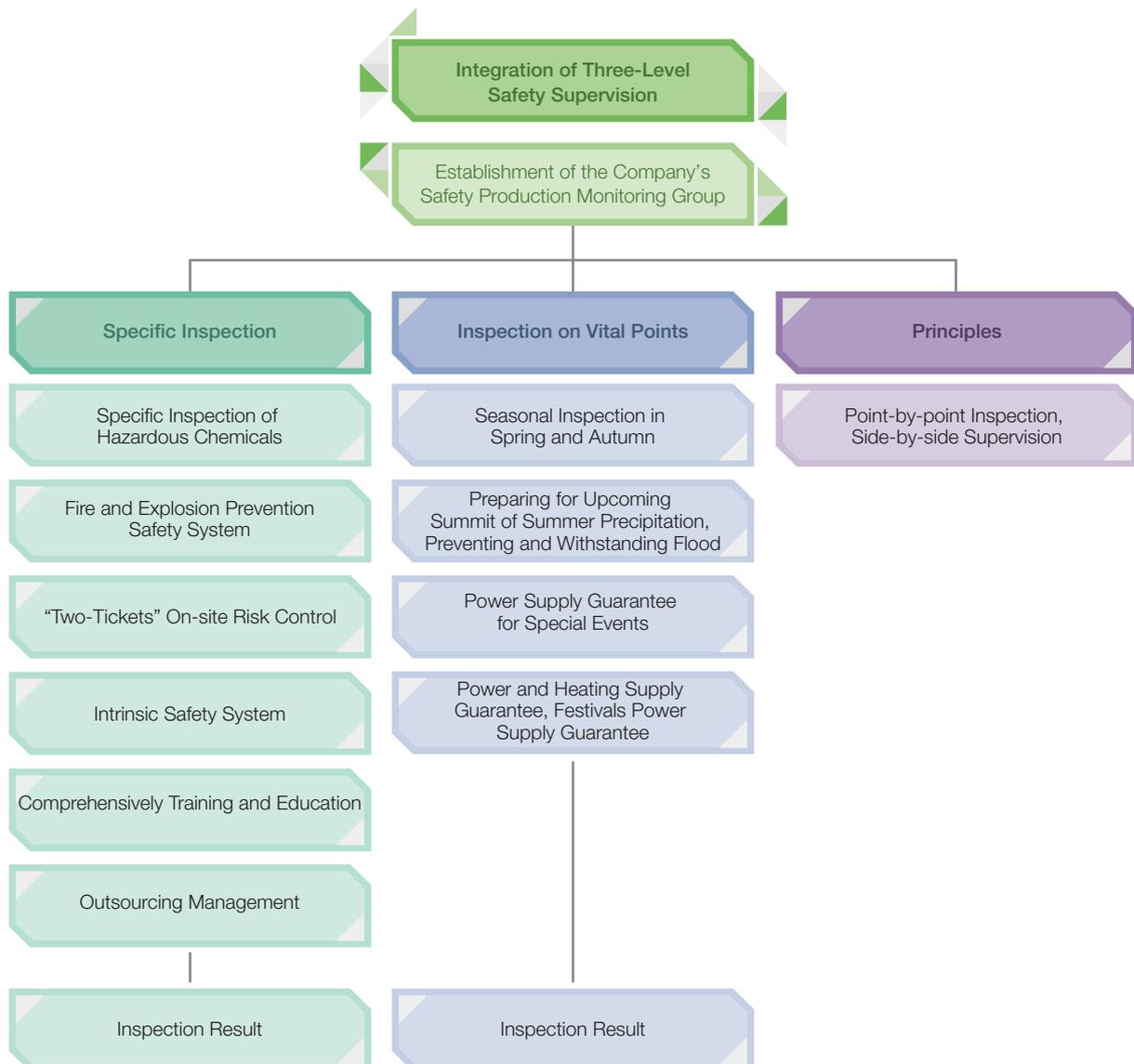
## 6.2 Intensifying Safety Supervision Function

The Company and all its affiliated units have established a robust safety management structure and a complete set of safety supervision mechanisms to fulfil safety supervision responsibility. As the management, construction and operation maintenance team and other business functions incorporate the production safety principle with their business line to better form a production safety protection system. The interaction of safety supervision and protection ensures the accomplishment of production safety targets.

## Establishing a Three-Tier Safety Supervision System

Huaneng International has set up a Committee of Safety, Occupational Health and Environmental Protection, whose main mission is to adhere to the policy of “safety first, prevention first, comprehensive management”, implement the national, industrial, and Huaneng Group’s guidance and arrangements on production safety, organize and guide the Company’s internal work on production safety, analyze and propose essential decisions and measures concerning production safety, and coordinate and solve critical issues in production safety. Under the leadership of the Committee of Safety, Occupational Health and Environmental Protection, the Company built a three-level safety supervision system of “headquarters – regional branches – grassroots business units” to ensure intrinsic safety is implemented for every stage of production and operation. The Company takes charge of system design, business strategy, on-site supervision and work assessment and other work. Regional branches are responsible for implementing the Company’s various safety management requirements, work plans and deployment decisions, and fulfilling the duty of organization and coordination as well as specifying the major responsibilities of their affiliated grassroots units. Grassroots business units are tasked with implementing the Standard on the Fulfillment of Production Safety Responsibilities (《各級人員安全生產責任到位標準》) and the safety responsibility of all levels and positions, establishing the responsibility consciousness of “the one who is responsible is the one who works, the one who inspects, the one who is in charge and the one who approves”.

The Company and all its affiliated units established a robust safety management structure and a complete set of safety supervision mechanisms to fulfil safety supervision responsibility. This management structure works together with the production safety protection mechanisms to ensure the accomplishment of production safety targets.



## 6.3 Implementing Safety Measures

Huaneng International thoroughly implements the proposition of Xi Jinping on safety production, addresses the importance of safety production, and orientates with comprehensively improving the intrinsic of safety level, continues to deepen the reform and development of safety production, promotes to assign production responsibility at all aspects, and strives for the goal of “zero accidents” and “zero deaths”. The Company has taken comprehensive and effective measures in system improvement, risk control reinforcement and emergency management through the responsibility system to promote the implementation of production safety, and solidly implemented special rectifications for production safety, contributing to the continuous enhancement of production safety.

### Overall Production Safety

In line with the deployment of the State Council Work Safety Committee to conduct the Year for Strengthening Safety Management action among Central Enterprises throughout the country, Huaneng International implemented various special rectification works and successfully accomplished the task of ensuring power supply during the crucial period. The Company also conducted flooding prevention and control to defend against the natural disasters. In 2023, there was no major or above accidents that occurred in the Company.

#### Carrying out Comprehensive Safety Inspections to Eliminate Hazards in Time



- 1 Strengthening process tracking and making decisions in real time. We hold daily morning meetings concerning production safety to analyze problems, keep abreast of the production safety conditions of the grassroots units, provide security instructions, and commence related work in time.
- 2 Enhancing organization management to ensure that responsibilities are individual-specific and the on-duty policy is strictly implemented. The leading groups at all levels take the lead in fighting the flood.
- 3 Strengthening the routine investigation and handling of potential hazards. We focus on the hazards identified to ensure thorough risk prevention and control with measures in place and hazards being properly managed.
- 4 Putting emphasis on “Personnel Safety”. We inspect the slopes around the production and living areas, as well as the prevention and avoidance of debris flow, to ensure that production and living facilities are away from hazardous areas.
- 5 Strengthening emergency management, performing emergency drills, improving emergency plans and ensuring sufficient material reserve for emergency.
- 6 Strengthening monitoring and early warning, taking emergency response measures promptly and scientifically. We cooperate with local governments by following the orders, actively participating in emergency rescue and evacuate personnel in time.

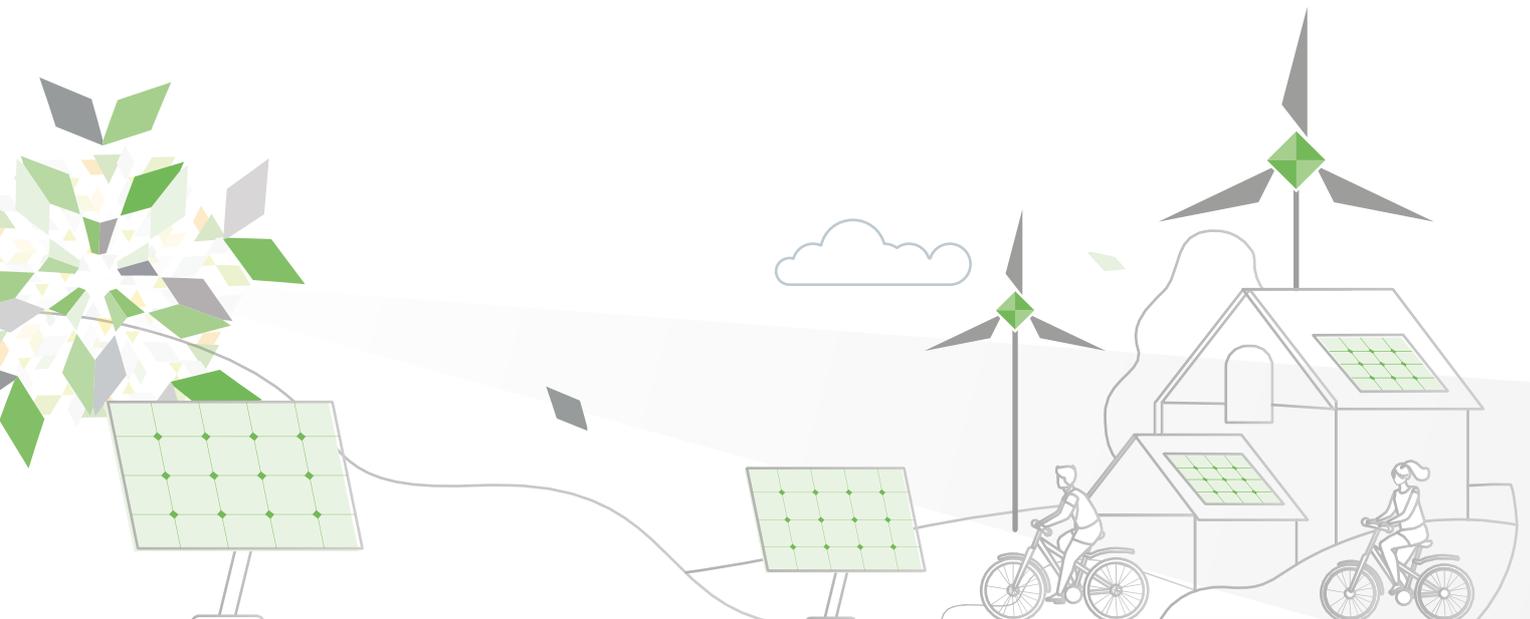
## Implementing Safety Responsibility Assessment to Strengthen the Responsibility

In line with the State Council Work Safety Committee's deployment, the Company put ongoing efforts in safety responsibility assessments, developed position responsibility list, performance indicators and accountability mechanisms, and summarized and reported common safety issues for enterprises to rectify jointly.



### Strengthening On-site Management and Control, and Improving Safety Risk Management and Control Ability

- 1** We urged each business unit to conduct on-site risk investigation and analysis to “identify potential dangers and quantify risks” from the perspectives of personal safety, equipment safety and environment safety based on the “Two Tickets” policy, putting together a risk identification database and standardizing the “Two Tickets” management process. We continued to promote the construction of the “dual prevention” mechanism combining graded risk control and potential risk inspection and clearance, systematizing and standardizing potential risk inspection and graded risk control. In addition, the abilities of grassroots business units in risk identification, analysis and control were further improved.
- 2** Based on the construction of the dual prevention mechanism, the Company strengthened potential risk inspection and clearance and on-site supervision while standardizing the “Two-ticket, Three-policy” management process for grassroots units. We took a zero-tolerance attitude towards non-compliance and applied stringent controls to key areas, key procedures, key event periods, key positions and key persons to enhance safety protection and prevent casualties. We focused on the investigation of fire risks in electricity systems, coal transportation, boiler fuel oil, lubricating oil, desulphurization, hydrogen, and other systems, as well as the management of liquid ammonia tanks, the four major pipelines and pressure vessels to prevent explosions and avoid severe accidents.
- 3** The Company continued the implementation of a series of special treatment projects and special inspections on dangerous chemicals, major hazards, fuel systems, outsourcing standardized acceptance, metal supervision, flood prevention and control, fire safety and fall prevention to prevent the occurrence of accidents. The Company promoted the construction of the production safety risk monitoring and warning system for hazardous chemicals, organized all business units to classify and grading their existing risk sources and connect to the government's production safety risk monitoring and warning system for hazardous chemicals in accordance with local governments' requirements and time limits.
- 4** The Company enhanced the safety management for natural gas pipelines and issued the Notice on Enhancing the Safety Management of Natural Gas Pipelines (《關於加強天然氣管道安全管理的通知》), conducted more patrols and inspections on equipment pipelines, strengthened the control to third party construction risk, established accountability for the safety management of natural gas pipelines, enhanced pipeline corrosion control and management and facilitated the implementation of internal and external inspection to ensure effective risk control for gas pipelines.



### Huaneng Fuzhou Power Plant Organized “Production Safety and Occupational Health Lecture for Enterprises”

The “Production Safety and Occupational Health Lecture for Enterprises” organized by Fujian Province Federation of Trade Unions, Fujian Province Emergency Management Department, and Fujian Province Health Commission was held at Huaneng Fuzhou Power Plant in Fujian Province. The lecture focused on the theme of “Comply with the Production Safety Law and Live up to One’s Responsibility as the First Responsible Person”, and included on-site survey, safety culture display, book gift distribution, video viewing, experience sharing and offline lecture, to promote the implementation of the new energy safety strategy of “Four Revolutions and One Cooperation”, enhance the awareness of production safety responsibility and improve the production emergency response capability. The lecture helped to build a strong line of defense for safety and made new contributions to the all-round promotion of high-quality development in Fujian Province.



Production Safety Publicity in Huaneng Fuzhou Power Plant

### Enhancing Safety Risk Awareness, and Improving Staff’s Emergency Response

Through Production Safety Promotion Year Action, Huaneng International strengthened the safety management in key areas and weak links, and further fulfilled safety responsibilities. We promoted the implementation of the “dual prevention” mechanism combining classified risk control and potential risk inspection and clearance in all respects, effectively containing production safety accidents and facilitating high-quality development of the Company.

The Company continued to promote scenario-based emergency drills expanding from traditional accident scene emergency simulation to enterprise-local government cooperation in disaster relief, crisis response, and aftermath recovery. From the comprehensive scenario-based drills, the Company identified issues, refined its emergency response processes, strengthened the construction of emergency management team and enhanced its emergency response capacity and efficiency.

## 6.4 Safeguarding Employees’ Health

The occupational health of our employees has always remained Huaneng International’s top concern. In compliance with the Labor Law of the People’s Republic of China (《中華人民共和國勞動法》), the Production Safety Law of the People’s Republic of China (《中華人民共和國安全生產法》), the Law of the People’s Republic of China on Prevention and Control of Occupational Diseases (《中華人民共和國職業病防治法》) and other laws and regulations, the affiliated units of the Company formulated the Occupational Disease and Hazard Management Standards (《職業病危害管理規範》) and the Occupational Health Supervision and Management Standards (《職工健康監護管理規範》) in accordance with the requirements of the Company’s intrinsic safety management system. We always put our employees’ health and safety first by raising awareness of work safety and preventing accidents. The Company strictly implemented regular safety hazard inspection, hazard notification, prevention and control and offered regular health checks for positions with exposure to occupational hazards and established a health monitoring file inventory for positions at different levels to ensure that occupational health and safety were under control. All grassroots business units set up occupational disease prevention organizations to implement occupational disease prevention responsibilities as well as identify and evaluate workplaces with occupational hazards against relevant standards to categorize the hazards. Employees are trained on occupational disease prevention, while clear warnings are put up in workplaces with potential occupational hazards where regular inspection is carried out. Regular occupational health examinations, e.g., chest X-ray and hearing test, were conducted for employees in relevant production positions such as fuel supply, boiler operation and overhaul, and an established occupational health management database was in place. To safeguard employees’ health, the Company has installed climbers or elevators for all new projects to reduce the possibility of typical occupational diseases, such as lumbar disc herniation in the wind power industry. Projects that had already been put into production are also required to install the equipment to reduce the employees’ climbing exercise intensity and reduce the inducing factor for diseases.

## 6.5 Raising Employees' Safety Awareness

Raising employees' safety awareness is the key to the Company's safety management. Developing and encouraging employees to participate in the Company's safety activities to become aware of the importance of safety and practice appropriate safety behaviors is the key guarantee to creating an intrinsically safe enterprise.

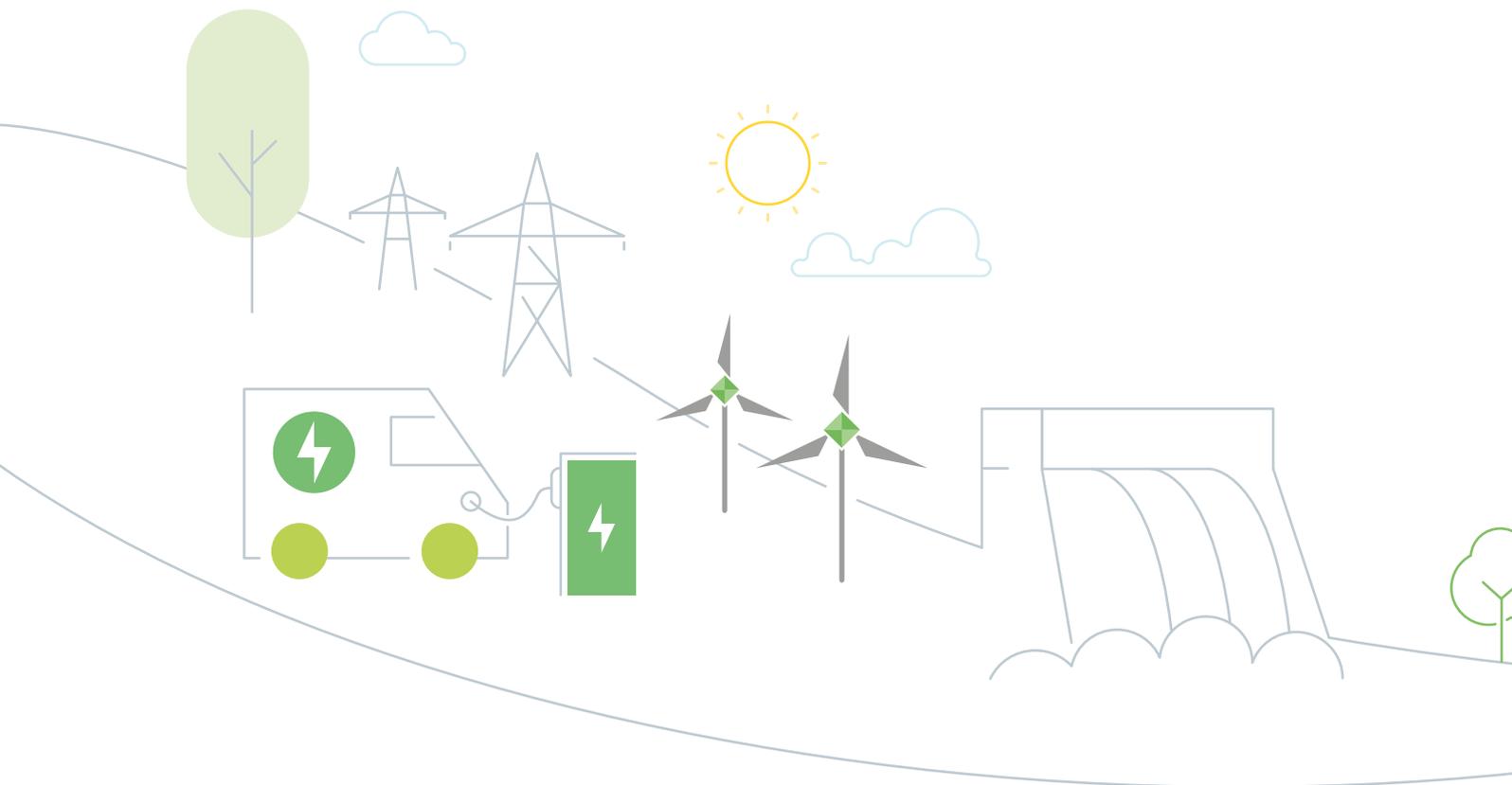
Huaneng International incorporated safety education and training into the Company's annual and medium-term and long-term plan. It established double-level and triple-level educational and training mechanisms and ensured the supply of required coaches, funds and logistics. The Company is responsible for preparing training plans according to the safety education outline, organizing safety education and training, and recording and archiving of safety training. All business units of the Company ensured that employees receive adequate training and adjust safety education plans and organize training for power plants, departments, and teams based on their production characteristics.

## 6.6 Consolidating Infrastructure Construction Safety

The Company is devoted to infrastructure safety management and promoted the execution of the intrinsic safety management system in this regard. The Company monitored the weaknesses in outsourcing safety management and the system implementation to improve outsourcing safety management. The Company strictly controlled the entry of outsourcing personnel and enhanced rectification measures for violations to ensure construction safety. The Company formulated the Regulations for the Safety Management of Power Engineering Construction 《電力工程建設安全管理規定》, specifying rules on how contractors should fulfill safety management when contracting power engineering construction and regulating the accomplishment of the safety management target.

### Strictly Managing Contractors' Qualifications

The Company ensures that only qualified contractors can participate in the construction of the Company's projects. The contractors' qualifications, performance records and bidding documents are strictly evaluated. Bidding is only open to contractors with appropriate qualifications, proven performance records and adequate capabilities for the project. Those with a history of major safety accidents are prohibited from bidding for the Company's projects.



### Strictly Managing Subcontracting

Any form of illegal subcontracting is strictly prohibited by the Company. The contractor must obtain the construction unit's consent for subcontracting and the subcontractor must have corresponding qualifications and work safety licenses. Contractors assume overall responsibilities for on-site construction safety. They shall strengthen on-site management and control by incorporating their subcontractors into their safety management system and implementing safety measures.

### Strictly Managing Safety Training and Education

The Company requires contractors to organize production safety training and education, establish a safety training system, specify the production safety training department and its principal, formulate an education and training plan for production safety, establish employee safety training filing records, regularly identify safety education and training needs, and assess the effectiveness of training to continuously improve employees' awareness of safety and self-protection.

### Deepening the Implementation of the Responsibility Subject

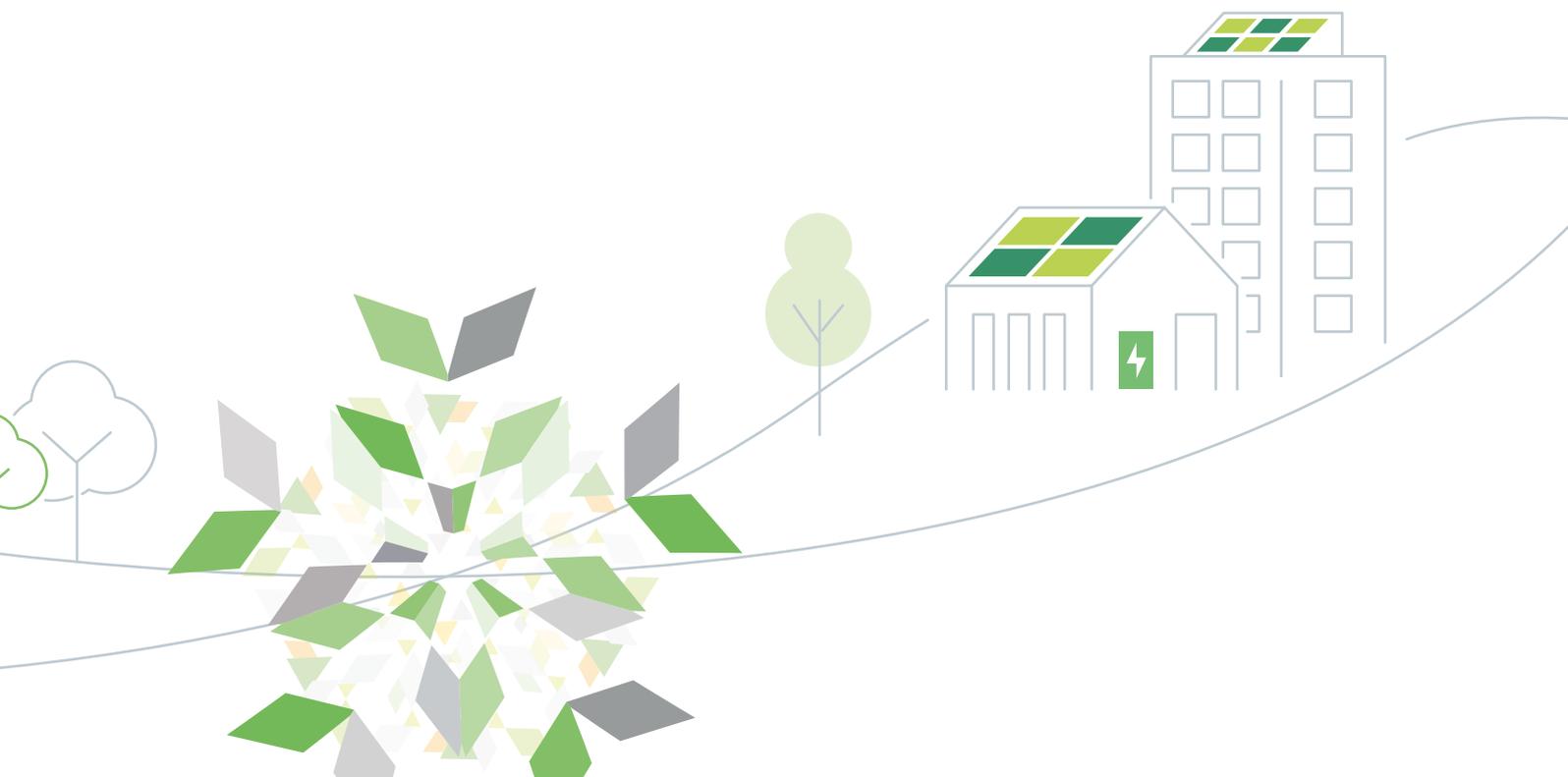
The Company has established a sound production safety responsibility system, specified the responsible personnel, scope of responsibility and assessment standards for each production safety position, as well as safety management responsibilities for engineering construction at all levels, and strengthened safety supervision and management, ensuring the effective operation of the safety supervision and assurance system.

### Enhancing On-site Safety Control

The Company vigorously improves safety through technology, develops and promotes the function of smart infrastructure security modules to assist on-site safety control, implements closed management of construction sites by strict access control, tightens management and control of employees' actions and working process, and reduces habitual violations. The Company also prepares and approves a technical scheme for operation safety and fulfills technical disclosure for construction safety and on-site safety supervision to control safety risks of contractors effectively.

### Enhancing Potential Risk Inspection and Mitigation

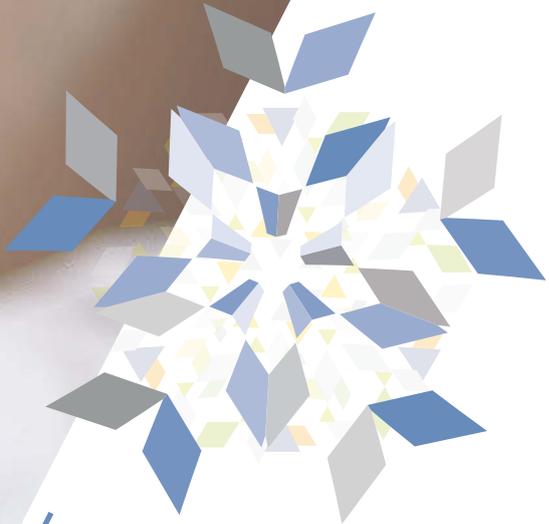
The Company organizes contractors to carry out large-scale on-site safety inspection on a regular basis to assess, record and file the potential safety risks identified. The Company is responsible for supervising contractors to formulate and implement rigorous mitigation plans as well as performing acceptance inspection of the potential hazards mitigation for closed-loop management of potential risk inspection and mitigation to consolidate and improve the infrastructure safety.



07

*EMPLOYEE  
DEVELOPMENT  
AND CARE*





Human resource is our primary resource. The sustainable development of talents is the driving force for the sustainable development of the Company. Human resource is essential to the success of the Company. Regarding employees as the foundation for the Company's long-lasting prosperity, Huaneng International is dedicated to building professional teams, prioritizing employees' rights and interests, recognizing employees' value, considering employees as valuable assets for the Company's long-term success and building a development platform to promote joint development of the Company and its employees. Further addressing talent team building of the Company's party committee is an urgent need to be comprehensively and strictly governed by the Party Committee, and deeply promote the development of the Party Committee.

# EMPLOYEE DEVELOPMENT AND CARE

4 QUALITY EDUCATION



5 GENDER EQUALITY



8 DECENT WORK AND ECONOMIC GROWTH



10 REDUCED INEQUALITIES



16 PEACE, JUSTICE AND STRONG INSTITUTIONS



## 7.1 Protecting Employees' Rights and Interests

We are devoted to the principle of “lawful employment and equal employment opportunity” and the goal of “maintaining long-term, stable and good relationships with the employees”. We create a friendly environment where everyone has a chance to contribute and achieve career development and self-worth. We are dedicated to improving employees’ sense of fulfillment and happiness while continuously enhancing unity within the Company.

### Lawful Employment Equity

The Company adheres to two major principles, namely lawful employment and equal employment opportunity, strictly abides by the Labor Law of the People’s Republic of China (《中華人民共和國勞動法》), the Labor Contract Law of the People’s Republic of China (《中華人民共和國勞動合同法》) and the Provisions on the Prohibition of Use of Child Labor (《禁止使用童工規定》), as well as the Administrative Measures for the Recruitment of College Graduates (Trial) (《高校畢業生招聘管理辦法(試行)》), signs employment contracts with all staff and prohibits the employment of any minor under the age of 16. The Company provides equal career opportunity and protection to staff with different nationalities, races, genders, religious beliefs and cultural backgrounds. We offer equal terms to male and female employees, oppose forced labor and job discrimination and adopt an equal employment policy through the entire employment period of each employee. The Company has consistently and strictly implemented national laws and regulations on the minimum age limit and clarified the rights and obligations of both parties regarding labor and employment to avoid the risks of violation such as child labor and forced employment at the institutional and operational levels. As the risk of the Company employing child labor and forced labor is rather low, there is no need to establish remedial measures for identified violations.

As of the end of 2023, the Company had a total of 57,038 employees, of whom 84% had received college qualifications or above. In 2023, no labor dispute arising from breaches of laws and regulations occurred.

### Protection System of Employee Rights and Interests

Upholding our “people-oriented” principle, the Company regards employees as the primary resource and has established a comprehensive and robust system to protect employees’ fundamental rights and interests. We take employees’ concerns to heart, aim to improve employees’ loyalty, strive to be a caring employer.

**Basic Protection:** In strict accordance with the requirements of the Labor Law of the People’s Republic of China (《中華人民共和國勞動法》) and the Social Insurance Law of the People’s Republic of China (《中華人民共和國社會保險法》) concerning employees’ rights and obligations, the Company has set up several social insurances including basic pension, basic medical insurance, work-related injury insurance, unemployment insurance and childbirth insurance as well as housing provident funds, annuities and supplementary medical insurances to ensure that employees’ rights are protected in the event of retirement, medical treatment, work-related injuries, unemployment or childbirth. In 2023, the Company did not have any social insurance violations or defaults.

**Compensation System:** The Company, based on the employee's "position, performance, work efficiency and the principle of equality", has established an effective incentive mechanism under which employee's compensation is linked to the Company's operating result and the employee's individual performance. An employee's total compensation includes basic salary, bonus, and allowance, and is paid on time in full amount.

**Right for Leave and Vacation:** The Company and its subsidiaries have established sound leave systems in accordance with the state regulations and local policies. The leave system specifies that leaves shall include statutory holidays, paid annual leave, home leave, marriage leave, funeral leave, maternity leave, sick leave and personal leave. Either the standard working hour system, the flexible working hour system, and the aggregated working hour system may be adopted based on the Company's production condition and the employee's position to protect the employee's right to take leave.

## Democratic Management and Openness of Factory Affairs

The Company continuously deepens democratic management and makes factory affairs more transparent to standardize the operation of employees' assembly and clarify its functions. The Company organized and held the first plenary meeting of the second representative assembly of the labor union, at which we held the general election and completed the procedures related to the change of the legal personality of the trade union, in order to help with normal and orderly operation of the labor union. The Company also held the first meeting of the second employees' assembly to implement the Guiding Opinion on Further Strengthening the Construction of the Employees' Assembly System of Central Enterprises (《關於進一步加強中央企業職工代表大會制度建設的指導意見》) issued by the Party Committee of the State-owned Assets Supervision and Administration Commission. During the meeting, the Company issued the Implementation Measures for the Employees' Assembly of Huaneng Power International, Inc. (《華能國際電力股份有限公司職工代表大會實施辦法》) and six supporting policies to further deepen the standardization of the employees' assembly, according to which the work focus of the Company's labor union in 2023 had been formulated. The Company strengthened the construction of the democratic management system, implemented the employees' assembly system and the factory affairs openness system, standardized the management and performance of employee representative supervisors, so as to expand the participation of employee representatives in the Company governance in an orderly manner and improve the scientific level of democratic management. We also uploaded policies regarding the labor union to the Openness of Factory Affairs tab on our official website, thus protecting employees' rights to know, participate, express and supervise in order to promote joint development of the Company and our employees.

## 7.2 Improving Talent Growth Mechanism

With the key perspectives of the Party Community and the People, Xi Jinping comprehensively planned for deeply promote the development of the Party Community in the new era in the report to the 20th National Congress of the Communist Party of China, and proposed the mission of "develop a high-quality team for national revival". In the spirit of "human resource as the primary resources of the Company", Huaneng International vigorously promotes its talent-driven development strategy. With talent capacity building as the core and optimization of talent structure as the main task, we develop talent resources, optimize talent allocation, improve talent ability and quality, create an enabling environment for talent growth, and inspire talent innovation by seizing the three links of attracting, training and making good use of talents. By doing so, we build a loyal, honest and responsible team of talents with excellent quality and proficiency, which is well structured, professionally equipped, devoted to careers in Huaneng and in line with the Company's development and strategic needs.

### Training and Development

To strengthen the construction of a training organization system and further improve the three-level training system consisting of "headquarters – regional branches – grassroots business units", the Company has established nine group level training bases (training classrooms). All grassroots business units have training centers to actively carry out training related to technology, skills and management.

The Company strictly follows the Regulations on Team Leader Training (《班組長培訓規定》) and the Regulations on Production Worker Training (《生產人員培訓規定》) to facilitate training that meets the needs of the Company and employees at the regional branches and grassroots business units based on the actual situation. Focusing on the critical tasks of the year, the Company has developed the 2023 training plan, actively and steadily promoting training related to professions, skills and management. Based on the actual situation, each regional branch has formulated its training plan, comprehensively summarizing the training work of this year, studying and proposing training plans and ideas for the next year, to further improve the training work.

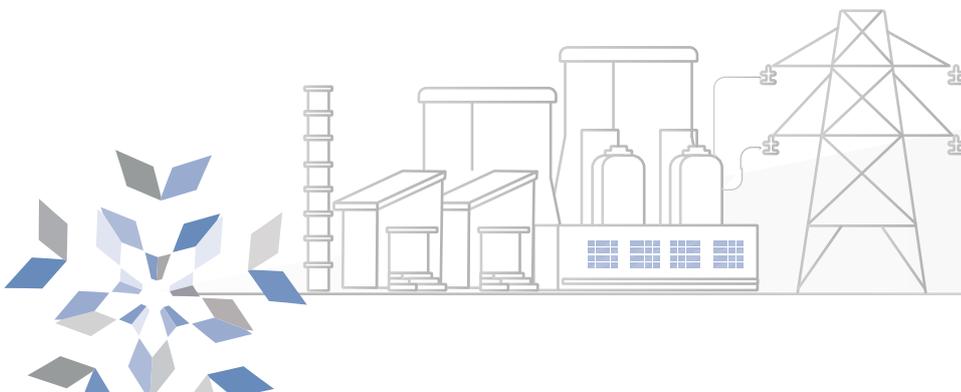
In 2023, the Company, regional branches and grassroots business units conscientiously implemented the annual training plans, coordinating and organizing on-board training for new recruits, business management training and production skill training. We carried out various skill contests, technical competitions and on-the-job exercises where 1 was selected for the “Central Enterprise Great National Craftsmen Support Program”, 1 employee was awarded the “Central Enterprise Technical Expert” title, 52 were awarded the “Huaneng Craftsmen” title, and 156 were awarded the “Huaneng Group Technical Expert” title. The Company also proactively arranged recognition of occupational skills and occupational skill appraisals, and deepened the reform of evaluation on skilled talents, so as to effectively enhance employees’ management ability as well as professional and production skills.

### ▶ The Innovation and Practice of Huaneng Shanghai Maintenance Company’s “Talent Sail Plan”

Huaneng Shanghai Maintenance Co., Ltd. took the “Launching, Sailing, Leading, and Piloting” sailing plan as the carrier, and the enterprise development strategy as the navigation guide, and focused on building a talent pool that fits the Company’s development vision. Through orderly promoting of the sailing plan and relying on the construction of employee career development channels, the management team became more professional and youthful. 2 were hired as the Group’s Chief Skills Expert, 1 was awarded the “Great National Craftsman”, 1 was awarded the “National Technical Expert”, and 2 were awarded the “Shanghai Skill Master”. In the high-level skills competition, 3 won the “first prize” and were awarded the “Huaneng Craftsman”, 3 won the “second and third prizes” and won the honorary title of technical expert of Huaneng Group, and 1 was awarded the “Shanghai Electric Power Craftsman”. The “Talent Sail Plan” conformed to the new development of the enterprise, created a new pattern of talent training, improved the new system of talent construction, and moved towards a new stage of talent strategy, which effectively stimulated the vitality and motivation of all employees.



Huaneng Shanghai Maintenance Company Held Ceremony for Young Employees Skill Competition and Talent Project Promotion



## Career Development

The Company focuses on employees' career development, continues to optimize the talent allocation and growth environment, provides diversified career development paths and further stimulates talents' enthusiasm and injected vitality into the Company.

The Company makes further efforts to refine its talent system and mechanism and optimize the recruitment procedure and evaluation mechanism for professional and technical positions. The Company promotes employees with outstanding skill sets and performance or those well-recognized by their peers. Through this approach, the Company has set a stage for talent to stand out and has built an excellent platform for talents to showcase their potential.

The Company continues to strengthen its core management team. Upholding Xi Jinping's Thoughts on Socialism with Chinese Characteristics for a New Era, and implementing CPC's roadmap in the New Era, we adhere to the basic principles of "evaluating candidates by their moral integrity and professional competence with priority given to the former and appointing those with good merits" to select and appoint cadres. Moreover, we persist in the correct orientation for the selection and appointment of people and concentrate on developing both the Company and Huaneng's business to select the cadres with the right political ideology, a strong sense of responsibility, an aspiration to do great things and great performance. We train the cadres in practice through job rotation and more extensive communication, thereby facilitating talent flow and optimizing human resource structure. We continuously improve management's performance to handle complex situations and build a talented team of high-quality and professional cadres, which meets the standards of qualified cadres in the new era who are loyal, honest and responsible.

The Company continuously strengthens talent development, deepens the cultivation of international talents, actively and steadily carries out training work, proactively carries out title management and talent evaluation work, and optimizes employee recruitment to improve core management and professional teams' comprehensive skills and management capability.

In 2023, the Company further strengthened the selection and training of young cadres, continuously improving the age structure and stimulating young employees' working enthusiasm. The Company formulated development plans for young talents and enhanced talent training with the consideration of the Youth League Committee's work, providing a platform for outstanding youth to practice and strengthen their ability to help the Company develop versatile talents.

In the future, the Company will deepen the reform of labor, personnel and distribution system, further improve the talent cultivation mechanism, optimize talent development environment, strengthen talent resource development and encourage staff to continuously improve themselves in their positions to achieve self-realization and joint development with the Company and staff.



## 7.3 Caring for the Mental and Physical Health of Employees

Employees are fundamental to the development of the Company. Huaneng International can only continuously and steadily supply energy for economic and social development based on the hard work and dedication of all employees. The Company always adheres to the “people-oriented” development concept and vigorously implements the talent-driven development strategy to enable staff and the enterprise to grow together, sharing the fruits of reform and development, thus filling employees’ work and life with happiness.

Adhering to the newly-revised Labor Union Law (《工會法》), Huaneng International was devoted to serving the employees. Considering the severe situation of frequent occurrence of major natural disasters and major safety accidents in the country this year, and the situation that employees suffer from serious diseases at younger ages and more frequently, the labor union organized relevant knowledge training on personal safety protection and emergency response for all employees. The training contains four modules, including CPR and AED use, hemostasis and bandaging, medical emergency treatment, disaster prevention and emergency knowledge training. In addition, the Company helped employees solve problems and difficulties in their work and life, so that employees can feel the care and warmth of the Party Committee of the Company and feel happier and more secure. In doing so, the unity, cohesion and synergy of the Company can be promoted.

In response to the action plan to promote entrepreneurship and innovation among women, the Company promotes the high-quality development of female employees, and encourages them to achieve success in their posts, safeguards the legal rights and special interests of female employees, builds a maternity-friendly working environment, and vigorously cultivates and selects the Company’s “March 8th Red-Banner Collectives” and “March 8 Red-Banner Holders”. This year, the Company conducted a primary survey on preparation of employees’ children for primary school, or junior high school, as well as for high school or college entrance exams, and sent gifts and blessings to them before the entrance exam.



The Company Sent Gifts and Blessings to Employees’ Children before College and High School Entrance Exams

The Company organizes colorful online and offline cultural and sports activities in various forms, and encourages employees to participate in the table tennis competition, calligraphy, painting and photography collection activities.



2023 Employee Table Tennis Campaign

The Company cares about overseas employees and provides convenience for their daily lives. The Company has signed a strategic cooperation agreement with Guozhong Health Group Co., Ltd., built a “mobile medical station”, and collaborated with Beijing Electric Power Hospital to provide medical insurance for overseas employees.



The Company Provides Medical Insurance for Overseas Employees

### Huaneng Chongqing Branch Organized the “Striving for a New Journey, Healthy Towards the Future” Employee Hiking Activity

In order to further promote the “Five Major Projects” and “Ten Actions” of the labor union of Huaneng Chongqing Branch, and further enrich the cultural and sports life of employees, in November 2023, the Chongqing Branch organized the “Striving for a New Journey, Healthy Towards the Future” employee hiking activity. This event is not only interesting but also beneficial for physical and mental health. It also promotes communication between employees, helping them to devote themselves to the new journey of high-quality development of the Company with a better mental state and healthier physique.



Huaneng Chongqing Branch's Hiking Activity



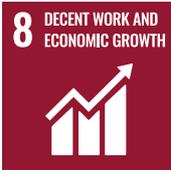
Huaneng International has always adhered to the harmonious development concept of “serving the nation, benefiting the society, seeking multiple wins and growing together”. We fully consider and effectively respond to the demands of stakeholders and actively devote ourselves to serving our operating areas. Furthermore, we cooperate with stakeholders to push forward economic and social development, share development fruits to give an impetus to build a harmonious and win-win society.



08

*WIN-WIN  
COOPERATION AND  
DEVELOPMENT*

# WIN-WIN COOPERATION AND DEVELOPMENT



## 8.1 Creating Value through In-depth Cooperation

Building trusted and cooperative relationships with suppliers is crucial to realizing the Company's strategy. Our policy is to remain open, fair and just in working with suppliers, and we emphasize effective communication to strive for suppliers' understanding and recognition of the Company's corporate values and culture. We hope to maintain long-term and mutually beneficial relationships with suppliers and jointly promote the stable and sustainable development of the industry.

Based on the supply category, the Company divides our suppliers into three categories: material, service and engineering. The Company's supplier management emphasizes the principle of "Classified management, stringent acceptance control, quantitative assessment and dynamic maintenance".

### Supplier Development

The Company's business units at all levels conduct supplier stocktaking and analysis each year to identify more high-quality suppliers for our supplier inventory. Meanwhile, the Company solicits eligible suppliers through various channels, such as procurement guides, mass media, product launches, product showcase (sales) events, industry associations, employee recommendations, public tenders and supplier liaisons.

### Supplier Acceptance

The Company's business units at all levels impose stringent controls on supplier acceptance. Only suppliers with a good reputation, advanced technologies, excellent product performance and strong ability to perform are accepted, and accepted suppliers are scrutinized for the legality of their business operations and the authenticity of their qualifications, among other things.

### Supplier Selection

We select suppliers in an open, fair and just manner, considering their environmental and social impact. Procurement activities are classified into two categories, namely tendering procurement and non-tendering procurement. Tendering procurement includes open tender and invitation to tender, while non-tendering procurement includes competitive negotiation, quotation and single-source procurement. For tender projects that are required to be conducted openly according to the law, the related work procedures are carried out in strict accordance with national laws and management systems of the Company, and all procurement activities are implemented publicly through the procurement management platform and e-commerce platform to achieve the goal of "all tenders should be recruited and all activities shall be disclosed publicly".

The Company requires all suppliers taking part in a tender to have the ISO 14001 environmental management systems certification and the ISO 9001 quality management systems certification. Suppliers included in the List of Enterprises with Serious Illegal and Dishonest Acts by the industry and commerce administration authorities in the National Enterprise Credit Information Publicity System, or the List of Dishonest Persons Subject to Enforcement by the Supreme People's Court on the website of "Credit China" or credit information sharing platforms at all levels are prohibited from participating in procurement activities. If the supplier has already participated in procurement activities, the tendering documents or response documents will be rendered invalid. Suppliers whose related relationships are prohibited by law and agents and suppliers sub-authorized are prohibited from participating in the procurement activities of the same project. The tendering documents or response documents of those who have participated in procurement activities will also be rendered invalid.

## Supplier Assessment

Supplier assessment is based on the "user assesses" principle. Based on Huaneng's procurement management platform, each of the Company's various business units conducts comprehensive and annual assessments on the project implementation of suppliers who have contractual relationships with the unit. Suppliers will receive assessment feedback through the e-commerce platform, which serves as an essential reference for future procurement.

## Supplier Monitoring

In response to the quality problems occurring in the provision of procurement services by suppliers as well as the problems in suppliers' integrity, delivery, and service during their participation in warehousing applications, procurement activities, and contract performance, the Company will, depending on the severity of the problems, take punitive measures such as downgrading, suspension of the award of contracts, and suspension of cooperation for a limited time.

## Coal Procurement

Medium and long-term coal procurement contracts are the "ballast" and "stabilizer" of energy security and supply. Strictly assign and fulfill coal procurement medium and long-term contracts, and forming "industry, operation and demand" stabilized and effective long-term mechanism, plays an important role in promoting healthy development of industry upstream and downstream, ensure the safe and reliable supply of coal, and maintain national energy security. As a large power-generating company, Huaneng International places much emphasis on fuel supplier management. The Company's Fuel Supplier Management Measures (《燃料供應商管理辦法》) clearly defines the supplier development and audit responsibilities at all levels, the principle of supplier access, the approval body and process for supplier approval, as well as the supplier evaluation, promotion and downgrading, and withdrawal mechanisms and others. It also specifies the classifications of suppliers and their corresponding management measures, and regulates the supply channels and procurement activities for fuel purchase. Regarding the monitoring and management of suppliers, the Company's business units assess suppliers each year in terms of coal supply stability, contract performance, contract fulfillment, production volume, procurement pricing and dispute resolution. At the same time, the Company's business units perform fuel supplier management inspections from time to time, examining whether the relevant supplier management system is sound; whether such system is effectively implemented and whether the acceptance approval is regulated; whether the supplier assessments are objective and accurate; and whether the exit mechanism is put in place.

In 2023, Huaneng International implemented the procurement mode of “long-term agreement + spot” in fuel procurement. Aiming at large coal mine operators, the Company negotiates directly with the suppliers to sign long-term agreements, and procurement is carried out in spot trading through open tender, tender follow-up and tender negotiation. To avoid causing substantial disturbance to the market during the process of fuel tender, Huaneng International adopts the strategy of “Achieving rapid development by small steps”, controls the procurement scale of each batch, selects representative coal types and flow directions each time, and creates a competitive procurement environment. In doing so, Huaneng International has precise control over coal procurement, which enables the Company to guide downturns in the market, seek resources of “dead end”, and reduce procurement prices.

The Company selects suppliers with great care and carries out the authorized approval procedures for shortlisted suppliers. The Company works with its strategic suppliers in a “plant-mine direct supply” mode. In our view, strategic suppliers possess higher capability to fulfill contracts, have more stringent product quality controls, are more compliant with laws and regulations and are more likely to take social and environmental responsibilities. Strategic suppliers are usually large coal mine operators and are subject to stringent environmental protection requirements imposed by the state concerning their planning, design, infrastructure, exploitation and mining area management. Only those coal mine operators that meet these requirements are allowed for construction and operation. With constantly intensified efforts in releasing quality production capacity in recent years, large coal mines’ coal production work has further improved in terms of quality, environmental protection standards, safety and labor protection. There is also a specific set of requirements formulated by the state for the recruitment of miners in large coal mines. By selecting state-owned large mine operators and large coal mine operators, we ensure that suppliers fulfill their social, environmental, and labor protection responsibilities and obligations.

Always taking the green development concept of “energy saving, emission reduction, clean and environmental protection” as the guide, Huaneng International regards environmental protection as a prerequisite for the survival and development of the Company with the basis on national conditions and energy reform trends. Correspondingly, the coal-fired structure is optimized ceaselessly during the development process to improve resource utilization efficiency. In the process of fuel procurement, strictly abiding by the Interim Measures for the Quality Management of Commodity Coal (《商品煤質量管理暫行辦法》) announced by the state, the Company prohibits the purchase of low-quality coal that fails to meet the national control standards while encouraging the use of high-quality resources of high-calorie, low-sulphur and low-ash, which has made outstanding contributions to the national targets of achieving the annual target of controlling energy consumption and carbon emissions and promoting energy saving and emission reduction.



## 8.2 Providing Sincere Services for Harmonious Development

Huaneng International is devoted to providing power grid companies and other downstream enterprise consumers with high-quality power products and services in sharing the Company's achievements with clients whilst ensuring a safe and stable power supply. The Company formulated Marketing Management Regulations (《市場營銷管理規定》), Electricity Market Trading Management Measures (《電力市場交易工作管理辦法》), Heat Supply Management Measures (《供熱管理辦法》) and other marketing-related systems to regulate customer service processes. In 2023, the scale of electricity transactions in the provincial and municipal electricity markets expanded. The Company made use of various channels through electricity sales companies to strengthen the development of power users. It had a variety of customer types, a relatively stable number and electricity consumption of large users signed for the whole year, and a rapid increase in the number and electricity consumption of small and medium-sized users. Adhering to the customer-oriented service concept, the Company established a customer service mechanism, and conducted promotion meetings, regular communication via telephone and regular return visits to understand customer needs and solve their problems with electricity. The Company also actively developed value-added services for customers, providing information consultation, quotation agency, electricity consumption monitoring, energy consumption diagnosis, energy saving renovation, operation and maintenance, financial service, etc., to continuously improve customer satisfaction and maintain harmonious customer relationships. When receiving customer complaints, the Company immediately transfers the complaints to regional branches and grassroots units and supervises them to handle the complaints in accordance with the management regulations and procedures.

**The Company adopted the following three approaches to improve customer service quality and customer satisfaction and gain greater access to the end customer market:**

- 1** Continuously improve the level of professional technology and electricity sales services, fully consider the differentiated needs of users, and provide users with accurate and high-quality services.
- 2** Establish the service concept and a customer service system, which reflects the warmth of our service and technical professionalism, thus drawing customer relationships closer and improving the adhesiveness of users.
- 3** Encourage the development of chargeable value-added services for individual needs, promote the rapid development of value-added services, and actively explore business models that combine carbon trading with electricity trading.



## 8.3 Undertaking Public Welfare Activities for Common Development

Huaneng International adheres to the development concept of “building a power station, driving regional economic growth, protecting the surrounding environment, benefiting the people and developing a harmonious community”, by promoting development of enterprises, wellness of people and protection of environment, and earnestly fulfilling our social responsibilities and giving an impetus to build a harmonious and win-win society. After the Company released the 2022 Sustainability Report (《2022年度可持續發展報告》) in August 2023, CPNN, Globalny, China Electric Power News, China.org.cn and other media published a press release titled “Huaneng International Releases 2022 Annual Sustainability Report with Outstanding Results in Technological Innovation and International Development”, which received wide attention in the industry.

### Assisting in Rural Revitalization

In 2023, guided by Xi Jinping Thoughts on Socialism with Chinese Characteristics for a New Era, the Company has thoroughly implemented the guiding principles of the 20th CPC National Congress, improved and optimized support measures, implementing support projects in a precise manner to effectively promote the implementation of the rural revitalization strategy of the state in accordance with the overall requirement of “developing rural areas into places with thriving businesses, pleasant living environments, social etiquette and civility, effective governance, and prosperity”. Based on the resources in targeted assistant areas, the Company has been playing the advantages of its main business, and invested in the construction of photovoltaic projects to improve the local energy and stimulate the collective revenue growth; In addition, the Company strengthened the support for characteristic industries and construction of public infrastructure to improve local economic vitality and promote sustainable rural development. The total investment in the assistance fund of the Company amounted to RMB14.63 million during the year. Besides, the Company made every effort to implement consumption assistance and promote the stable increase of income of the people in the assistant areas, and purchased agricultural products worth about RMB50 million in the targeted assistant areas.

#### ▶ Huaneng Shanxi Branch Launched the Volunteer Loving Activity – “Let Love No Longer Wait”

On the occasion of Lei Feng Day on March 5, the Youth League Committee of Shanxi Branch organized the “Sansefan” youth volunteers to go to Baiguansi Village in Zuoquan County, a designated rural revitalization support village of Shanxi Branch, to carry out the volunteer service activity of “approaching Lei Feng and striving to be Lei Feng”. They visited the old people’s home to learn about their current situation, and inquired about their physical and living conditions. The volunteers divided their work and helped the elderly peel corns, clean glasses and provided other volunteer services, which gained the heartfelt thanks of the elderly.



Huaneng Shanxi Branch Launched the Volunteer Loving Activity – “Let Love No Longer Wait”

#### ▶ Huaneng Hubei Branch Promoted to Form a Characteristic Industry that Provides a Stable Revenue Source

In response to the rural revitalization initiative, Huaneng Hubei Branch pushed forward the co-construction of “beautiful environment and happy life” in Danjiangkou City, donating RMB3.5 million to help Gaojiagou Village build a rooftop photovoltaic project. The project is designed to have a capacity of 638kWp, utilizing the roofs of 44 households in the Fujiapo migrant settlement, the berms, the roofs and the carport of the village to install 1,151 pieces of high-efficiency monocrystalline photovoltaic 555Wp modules. The project has been connected to the grid for power generation in December 2023, providing a way for stable revenue growth for the village and local farmers, and helping the migrant masses in Gaojiagou Village to form a characteristic industry that provides a stable and flexible revenue source.



Huaneng Hubei Branch Constructed Rooftop Photovoltaic in Gaojiagou Village

### Huaneng Guangdong Branch Carried Out Agricultural Socialization Service Innovation Pilot Project – to Promote the Quality and Efficiency of the Rice Industry in Shixing County

Huaneng Guangdong Branch, together with the Rice Research Institute of Guangdong Academy of Agricultural Sciences, the Institute of Agricultural Economics and Information and other professional institutions, signed a Strategic Cooperation Agreement for Rice Industry Promotion in Shixing County (《始興縣米業提升戰略合作協議》) with the Bureau of Agriculture and Rural Affairs of Shixing County, to promote the quality and efficiency of the rice industry in Shixing County through “unified varieties, unified seedling breeding, unified field management, unified brand, unified sales”. The work team successfully expanded the demonstration area for whole-process socialization of rice cultivation from 1,000 mu last year to 3,000 mu in Shensuo Town, Mashu Town and Chengjiang Town, which strongly boosted the quality and efficiency of the local rice industry.



Strategic Cooperation Project for Rice Industry Promotion in Shixing County

### Huaneng Anyuan Power Plant Helped Set Up “Harbor for Children’s Heart” Program

The Youth League Committee of Huaneng Anyuan Power Plant helped Yawu Village set up the “Harbor for Children’s Heart” program to give educational support, for which we organized young employees to donate books and school supplies, provide companionship and conduct home visits and school visits, theme activities, volunteer services, and other public welfare activities for left-behind children, to help them grow up healthy. As of December 2023, “Harbor for Children’s Heart” program had carried out 169 volunteer activities and 1,256 hours of educational support activities, benefiting 2,345 left-behind children.



“Harbor for Children’s Heart” Program of Anyuan Power Plant

### Huaneng Fujian Branch Carried out a Rural Revitalization and Demonstration Village Project

The road reconstruction, expansion and upgrading project of Baoxi Line in Banzai Village, Banzai Town, Pinghe County, Zhangzhou City, invested by Huaneng Fujian Branch, is a demonstration village project of rural revitalization. The project rehabilitated the road after landslide, expanded and upgraded the road bends and bridge deck along the road from the Xikeng Village to Gankeng Group, totaling 2.585 kilometers, after which, buses with more than 53 seats can drive on it smoothly. The project laid a solid foundation for the industrial income of Xikeng Village to exceed RMB1 million within three years.



Huaneng Fujian Branch Funded the Infrastructure Construction of Xikeng Village

09

*PROMOTING  
BRAND GLOBALLY*





Huaneng International successfully acquired 100% equity in Singapore Tuas Power Ltd. (“Tuas Power”) in 2008. Tuas Power is one of the three major power-generating companies in Singapore and one of Singapore’s major public utility and environmental service providers.

# PROMOTING BRAND GLOBALLY



## About Tuas Power

As of December 31, 2023, Tuas Power mainly owns assets such as Tuas Power Station, Tembusu Multi-Utilities Complex (TMUC), desalination plant, electricity retail company, and operates 7 generating units with a total installed capacity of 2.01 million kW. Among them, the Tuas Power Plant has an installed capacity of 1.876 million kW, and the Tembusu Multi-Utilities Complex (TMUC) has an installed capacity of 133,500 kW. Tuas Power's share of Singapore's electricity market in 2023 is approximately 20.4%.

Tuas Power Station has been providing safe, reliable and efficient electricity supply to Singapore since 1999. The Station currently has five units of gas-fired Combined Cycle Plants (CCP) in operation that contribute to the country's electricity demand at a highly-reliable performance of over 99%.

The Tembusu Multi-Utilities Complex serves the petrochemical industries in the Tembusu area of Jurong Island. TMUC comprises a Biomass Clean-Coal (BMCC) cogeneration plant, seawater desalination treatment plant and wastewater treatment plant, which provides different types of utilities – electricity, steam, high-quality industrial water and demineralized water for industrial customers. In respect of steam supply, TMUC provides a variety of pressure grades of steam to meet the differentiated needs of different customers while generating electricity. This process is completed by steam turbine generator sets. This cogeneration process helps to further improve the efficiency of the TMUC.

Going beyond providing energy service, Tuas Power enlarged its operations to cover multi-utility, environmental, oil terminals and storage and oil tank lease services – all of which utilized cutting-edge technologies and world-class practices to power today's industries. In 2017, Tuas Power and ST Marine formed a consortium to participate in and won the bid for Singapore Jurong Island Desalination Plant project, with a daily maximum production capacity of 30 million gallons (equivalent to about 137 thousand cubic meters) of drinking water.

Tuas Power emphasizes efficient and environmentally responsible energy solutions for modern business and industrial needs. Tuas Power insists on conducting operations in an environmentally responsible manner by maximizing plant efficiency, resource conservation, reducing waste and controlling emissions.

In 2023, Tuas Power had no reportable environment-related incidents. In the future, Tuas Power will continue to enhance environmental protection and safeguard measures.

## Energy Conservation

Tuas Power uses well-tested and calibrated thermodynamic models to perform off-line heat balance calculations to monitor the efficiency performance of each combined cycle unit. Tuas Power has also developed a trading assistance system called “Load Optimizer” that automatically calculates and optimizes the operation schedule of each unit, thereby improving energy utilization efficiency. In 2024, Tuas plans to exchange and share experience with Huaneng Group’s domestic power plants to help employees better monitor and analyze power plant performance.

The environmental, occupational health and safety management and planning systems of both Tuas Power Station and TMUC are certified to ISO 45001:2018 (Occupational Health and Safety Management System), ISO 14001 (Environmental Management System) and ISO 50001 (Energy Management System). While ensuring compliance with laws and regulations, these certifications help to identify key processes for improvement, and demonstrate the Company’s tireless efforts to practice energy conservation and compliance.

Jurong Island Desalination Plant (JIDP) commenced commercial operations on March 31, 2023 after rigorous testing and commissioning, marking another milestone in the Company’s history. The Operations and Maintenance (O&M) Team of TP Utilities Pte Ltd had put in a lot of effort to ensure the safe and reliable operation of the plant. With a focus on continuous improvement, the O&M Team has improved the operational control and maintenance systems with an emphasis on improving safety, and plans to pass ISO 45001:2018 and ISO 14001:2015 management system certification by 2024. These certifications demonstrate Tuas Power’s commitment to safe and environmentally friendly operations.



Tuas Power Station



Tembusu Multi-Utilities Complex

## Emissions Management

### Greenhouse Gas Management

In terms of greenhouse gas management, the carbon emission of the five units of CCP of Tuas Power Station is lower than that of the national average of all power plants in Singapore. Tuas Power Station has completed the CCP3 and CCP4 Unit F upgrade project in January 2023 and December 2023 respectively, which is expected to reduce carbon emissions by 16,800 tons per year. It is scheduled to be carried out the CCP1 and CCP2 Unit F upgrade project during overhaul in 2025 and 2026, which is expected to reduce carbon emissions by 17,100 tons per year. The usage of 20% carbon-neutral biomass (Palm Shells & Woodchips) is a mandatory requirement by the local authority to lower the carbon footprint of TMUC. By co-firing 80% coal with 20% carbon neutral biomass, TMUC has lowered the carbon emission and thus lowered the carbon tax. To remain competitive, TMUC gradually increased the proportion of wood chips in its fuel mix. An increased usage of wood chips provided greater flexibility for fuel mix ratio to maintain a higher percentage of carbon-neutral biomass fuel and reduce fuel costs. In addition, mitigation measures that reduce energy losses from power plants or increase the power generation efficiency of power plants can also help reduce greenhouse gas emissions. In accordance with the measurement and reporting requirements for greenhouse gas emissions from Singapore’s National Environment Agency, Tuas Power and TMUC submitted their plans and supporting documents for the measurement of greenhouse gas emissions to the Singapore authorities and received approvals in December 2018. In 2023, Tuas Power and TMUC submitted their annual emission reports based on these approved documents and paid the relevant carbon taxes accordingly.

### Other Exhaust Gas Management

In terms of other exhaust gas management, Tuas Power Plant operated five units of natural-gas-fired CCP generators to achieve zero emission of sulphur dioxide. TMUC reduces NO<sub>x</sub> and SO<sub>2</sub> emissions by using advanced Circulating Fluidized Bed (CFB) boilers and purchasing low-sulphur low-ash coal. The low furnace temperature of the CFB boilers and the use of low-sulphur low-ash coal have ensured a low NO<sub>x</sub> and low SO<sub>2</sub> emission, utilization of high-efficiency bag filters at the CFB boilers has ensured the emission is within the compliance limit, which made TMUC able to meet the stringent air emission limits set by the Air Impurities Regulation of the Singapore Environmental Protection and Management Act (《環境保護和管理法案》).

### Ash Recycling

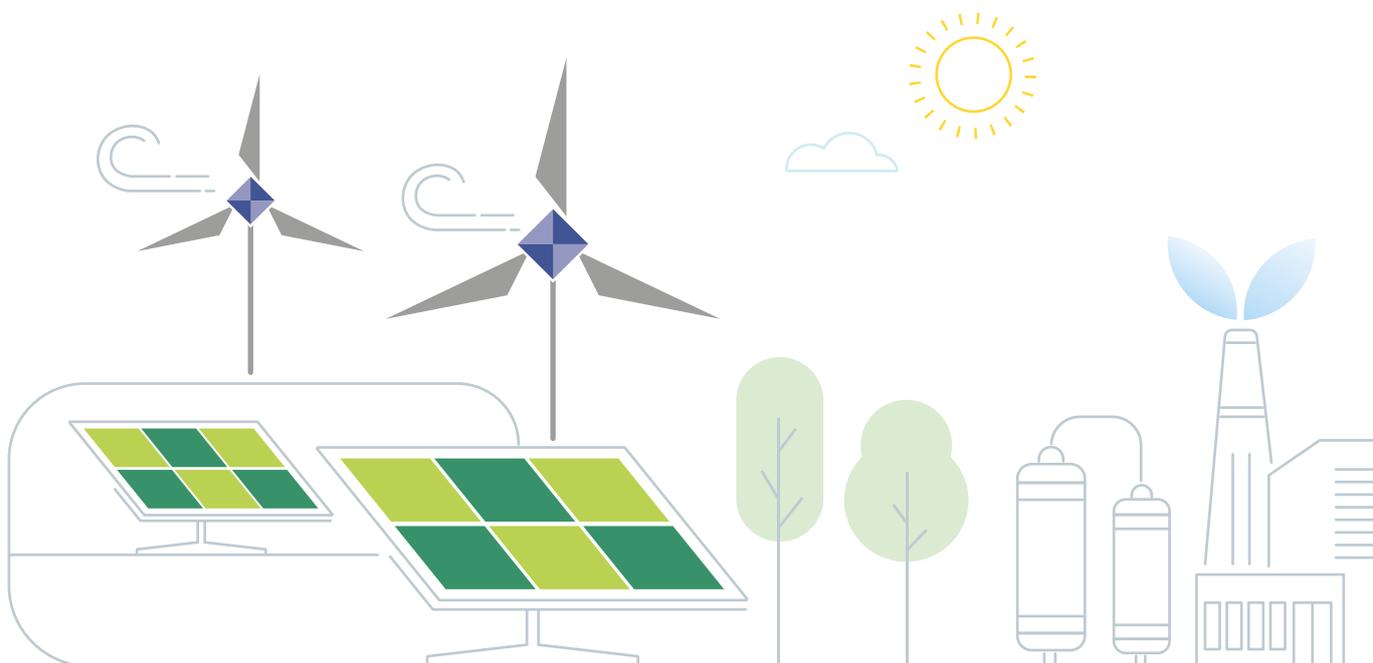
In ash recycling, TMUC has achieved 100% comprehensive utilization of ash (fly ash and bed ash) by working together with local building materials companies.

### Wastewater Management

In the case of water treatment, the TMUC project has established wastewater treatment facilities to treat the wastewater produced internally and the wastewater generated by the petrochemical industry in compliance with relevant regulations. To fully utilize the well-designed water cycle, customers are incentivized to return clean condensate for TMUC's steam production. High-temperature return condensate from the customers is used to pre-heat deaerator feed water to improve efficiency. Boiler blowdown water is recycled back to the Water Treatment Plant as an alternative source of raw water. Partially treated water from the wastewater treatment plant is being reused for plant washing in TMUC Site 2.

### Green Plan

Adhering to the development principle of “green, clean, benefit, steady”, and focusing on green development, the Company promotes the development of new energy projects at home and abroad, continues to advance the development of new businesses such as transnational power imports and international green certificates, and builds high-quality model projects. Tuas Power has embarked on various initiatives in support of Singapore's carbon emission reduction to address the challenges posed by climate change and meet carbon reduction goals. Our initiatives include exploring and participating in importing renewable energy, providing carbon-reduction solutions for customers, constructing in-plant photovoltaics and registering for international green certificates. In 2023, the Company actively promoted the construction of in-plant photovoltaic projects at Tuas Power Station, TMUC and Jurong Island Desalination Plant, of which, TMUC has completed the international green certificate registration certification, obtained 73,810 green certificates in the second half of 2022, and completed the first green certificate sale.



In addition, the Company actively played the role of Tuas Power as a platform to promote green investors from China and Singapore to hold a share in domestic new energy projects, and successfully got the first participation project to start construction, continuously improving the standardization and professional operation level of China-Singapore power investment projects in China. At present, the 100 MW photovoltaic project in Qionghai, Hainan Province, in which the Company holds a share, started construction on August 31, and completed the injection arrangement in 2023. The project is expected to achieve the first grid connection in 2024.

### Customer Information Protection

In handling customer information, Tuas Power formed an agreement with contractors and suppliers to protect customer information. Its own employees are subject to the related compliance trainings and the same requirements as the contractors and suppliers and comply with the Company's governance policies that protect customer information.

### Community Joint Building

Tuas Power actively cooperated with Statutory Boards of the Singapore Government, charity organizations and non-profit organizations to give back to the society through volunteer activities, funding public welfare and welfare organizations, etc., and has established a good corporate culture and responsible corporate image. In 2023, Tuas Power provided funds of estimated 36 thousand Singapore dollars to charitable, voluntary and welfare organizations such as Metta Welfare Association, PCS Living Blood Centre, Food From The Heart (FFTH), Garden City Fund, Power and Gas Industry Unions, Singapore Children's Society, Focus on the Family Singapore, Gardens by the Bay, The Straits Times Campus Subsidy Fund to help groups and families in need, and support horticultural research and conservation to protect Singapore's green environment.

### Digital Intelligence

Based on digital software such as power plant load optimizer, Tuas Power conducted unified blueprint design, step-by-step implementation and promotion of the smart operation platform. Under the guidance of "consolidating the data foundation, building key modules and establishing the unified platform", Tuas Power promoted the development of an information system following these three steps, and drove the lean management of overseas enterprises with digital technology to effectively improve their overall economic efficiency and risk resistance capacity, which had strong reference significance.





# 10

## *FUTURE PLANNING*

We have mission and responsibility, and believe only truth is practicable and diligence is sustainable. We forge ahead and make sound development for a far-reaching success. The electric power industry is closely related to national development and people's lives. Although it has existed for over a century, it is still vibrant. As a responsible enterprise, we will continuously explore our potentials and improve quality and efficiency. Facing the current co-existing situations of both risks and opportunities, Huaneng International, is orientated with Xi Jinping's thoughts on Socialism with Chinese Characteristics for a New Era, thoroughly implements the guiding principles of the 20th CPC National Congress, implements the Company's development strategy whilst adhering to steady progress, promoting transformation and upgrading, and actively carrying out reforms and innovations, making more contributions to both national development and rejuvenation.

# FUTURE PLANNING

By 2025, Huaneng International will complete the foundation of an electricity-centered and innovation-oriented modern energy industry system with multi-energy synergy and global layout. With all major indicators reaching the advanced level of peer energy enterprises worldwide, Huaneng International will become one of the world-class listed power generation companies.

We comprehensively take advantages of company's technology and marketing, proactively participates in the construction of new type of power and energy systems that are characterized by clean and low-carbon, safe and sufficient, economically efficient, synergized supply and demand, flexible and intelligent, building a "new engine" for the Company's high-quality development to promote green, low-carbon and circular development, we promote the development of an integration of sources, networks, loads and storage and the multi-energy complementary smart energy system. Targeting "carbon peak" and "carbon neutrality", we promote green and low-carbon energy transformation, effectively reduce carbon emissions. We adopt alternatives of renewable energy, vigorously develop the new energy sources, increase efforts to plan and build a new energy supply based on large-scale wind and solar power bases and supported by clean, efficient, advanced and energy-saving coal power in the vicinity, transform the development of coal power, optimize the development of gas power and other clean energy power generation, actively lay out pumped storage, and build the integration of source, network, load and storage, as well as the development pattern of multi-energy complementarity, so that by 2025, the Company's low-carbon clean energy installed capacity will account for about 45% of the total energy supply.

We strengthen and improve the comprehensive energy services, actively adapt to the transformation of China's energy supply structure and continue to develop strategy-focused emerging industries through digitalization. To carry out diversified supply and energy service transformation centered on core industries, we actively develop energy storage, and participate in the demonstration of integrated green hydrogen industry of "production, storage, transportation and utilization".

Bearing the principle of "clean, benefit, steady" in mind, we insist on the integration into the new "dual circulation" development pattern, strengthening the international cooperation with Tuas Power. We build the Company's overseas innovation and development platform, strengthen efficient operation of overseas assets, optimize the asset portfolio, and improve the risk resistance and profitability of the Company's overseas assets.

We support high-quality development with scientific and technological innovation, adhere to the strategy of serving the country, adapt to the urgent need of the Company's development, stick to the digital intelligent development, further enhance the independent innovation ability and the implementation of demonstrative project of science and technology, and strengthen the basic and forward-looking technology research.

The Company adheres to the orientation of promoting profitability, improving efficiency and creating value, works hard to ensure the safety of production, energy conservation and efficiency improvement, and the protection of the ecological environment, strengthens and optimizes major industries and enhances industrial coordination. With our focus on the "one benefits and five rates"<sup>12</sup>, we strive to improve quality and efficiency as well as deal with difficulties, enhance the Company's operational vitality, improve the operational efficiency and other indicators until reaching the international advanced level.



<sup>12</sup> Refers to total profit, asset liability ratio, operating cash ratio, return on equity, R&D investment intensity, and overall labor productivity

# 11 APPENDIX

## 11.1 About this Report

This report is the seventh “Environmental, Social and Governance Report” (《環境·社會及管治報告》) released by Huaneng International. This report focuses on the Company’s efforts and contributions to the environment, society and governance, as well as our outlook for the future. We hope that through the publication of this report, we can strengthen communication and liaison with our stakeholders.

The Board of Directors and all the Directors hereby warrant that the contents of this report do not contain any false representations, misleading statements or material omissions and take joint and several liabilities for the authenticity, accuracy and completeness of the contents.

### The Scope of the Subject of this Report

Huaneng International and its domestic and overseas affiliated branches and its wholly owned and controlled companies. Unless otherwise stated, the data disclosed in this report are about Huaneng International and its affiliated domestic subsidiaries and its wholly-owned and controlled companies.

No major adjustments have been made to the disclosure scope hereof compared with that of the Company’s previous ESG reports, and the statistical approaches adopted remains consistent.

### Reporting Period

The Company’s “Environmental, Social and Governance Report” (《環境·社會及管治報告》) is an annual report for the period from 1 January 2023 to 31 December 2023, and some of the statements and data are traced back to the previous year.

### Reference Remarks

In order to facilitate the presentation and be easy to read, “Huaneng Power International, Inc.” in this report is referred to as “Huaneng International”, “the Company” or “we”. “China Huaneng Group Co., Ltd.” in this report is referred to as “Huaneng Group” and “Group Company”.

### Content Compiling

The contents of this report are prepared in the light of the HKEx’s “Environmental, Social and Governance Reporting Guide” (《環境·社會及管治報告指引》), and the Global Reporting Initiative (GRI) Sustainability Reporting Standards (GRI Standards) (《可持續發展報告標準》). The chapters of this report reflect the efforts and contributions made by the Company to achieve the 17 Sustainable Development Goals (SDGs) of the United Nations. Currency used in this report is expressed in RMB unless otherwise specified.

### Access to this Report

You can download the Chinese and English version of this report on Huaneng International’s website at <http://www.hpi.com.cn>. This report is published in both Chinese and English. In case of any discrepancies among the different versions, the Chinese version shall prevail. If you have any questions or suggestions, please call 010-63226999.

## 11.2 Statement of the Board of Directors

The Board of Directors assumes the overall responsibility for the Company's ESG management and disclosure and holds annual board meetings to discuss important ESG-related issues.

The strategy committee is in charge of supervising the Company's comprehensive risk management. The Company has incorporated safe production, environmental protection and other ESG material topics into the comprehensive risk management assessment process. The strategy committee meets regularly every year to discuss assessment over the comprehensive risk management. In 2023, the strategy committee deliberated on and approved the 2023 Comprehensive Risk Management Report (《公司2023年度全面風險管理報告》), which comprehensively summarised safe production, environmental protection and other ESG-related risks, and formulated detailed responses, with changes in material risks closely tracked and monitored.

At the 2023 annual board meeting, the Board emphasised the review of the assessment of ESG material topics, the establishment of environmental targets, and the targets completion progress. The Company identified 18 ESG reporting topics, including 6 material topics, e.g., Compliance with laws and regulations, Emissions Control, Energy Use, Anti-Corruption, Clean and Sustainable Energy, Production safety and Occupational Health. The Company sets five environmental performance targets in emission reduction, carbon reduction, waste reduction, energy saving and water conservation, covering Emissions Management, Energy Consumption Management, and Water Resources Management.

2023 ESG Report provides detailed disclosure of the progress and key performance indicators in relation to the above work and ESG topics. The report was reviewed and approved by the Board of Directors in March 2024.



## 11.3 Contents Index of the Environmental, Social and Governance (ESG) Reporting Guide by the Hong Kong Stock Exchange

Environmental, Social and Governance Reporting Guide	Page Number	Report Content
<b>Statement of the Board of Directors</b>		
<ul style="list-style-type: none"> <li>A disclosure of the Board's oversight of ESG issues</li> <li>A disclosure of 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)</li> <li>A disclosure that how the board reviews progress made against ESG-related goals and targets with an explanation of how they relate to the issuer's businesses.</li> </ul>	108	11.2 Statement of the Board of Directors
<b>Reporting Principles</b>		
Materiality: (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.	17-19	2.8 Communication with Stakeholder and Identification of Material Issues
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.	12-16 107	2.7 Table of Key Performance Indicators 11.1 About this Report
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.	107	11.1 About this Report
<b>Reporting Scope</b>		
A narrative explaining the reporting scope 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.	107	11.1 About this Report

Environmental, Social and Governance Reporting Guide		Page Number	Report Content
<b>Subject Area A: Environment</b>			
<b>Aspect A1: Emissions</b>			
A1	General Disclosure	57-67	5.3.4 Emissions Management
A1.1	The type of emissions and respective emission data	12-16	2.7 Table of Key Performance Indicators
		57-67	5.3.4 Emissions Management
A1.2	Direct (Scope 1) and energy indirect (Scope 2) greenhouse gas emissions (in tons) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	12-16	2.7 Table of Key Performance Indicators
		57-67	5.3.4 Emissions Management
A1.3	Total hazardous waste produced (in tons) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	12-16	2.7 Table of Key Performance Indicators
		57-67	5.3.4 Emissions Management
A1.4	Total non-hazardous waste produced (in tons) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	12-16	2.7 Table of Key Performance Indicators
		57-67	5.3.4 Emissions Management
A1.5	Description of emission target(s) set and steps taken to achieve them.	57-67	5.3.4 Emissions Management
		98-103	9 Promoting Brand Globally
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.	57-67	5.3.4 Emissions Management
		98-103	9 Promoting Brand Globally

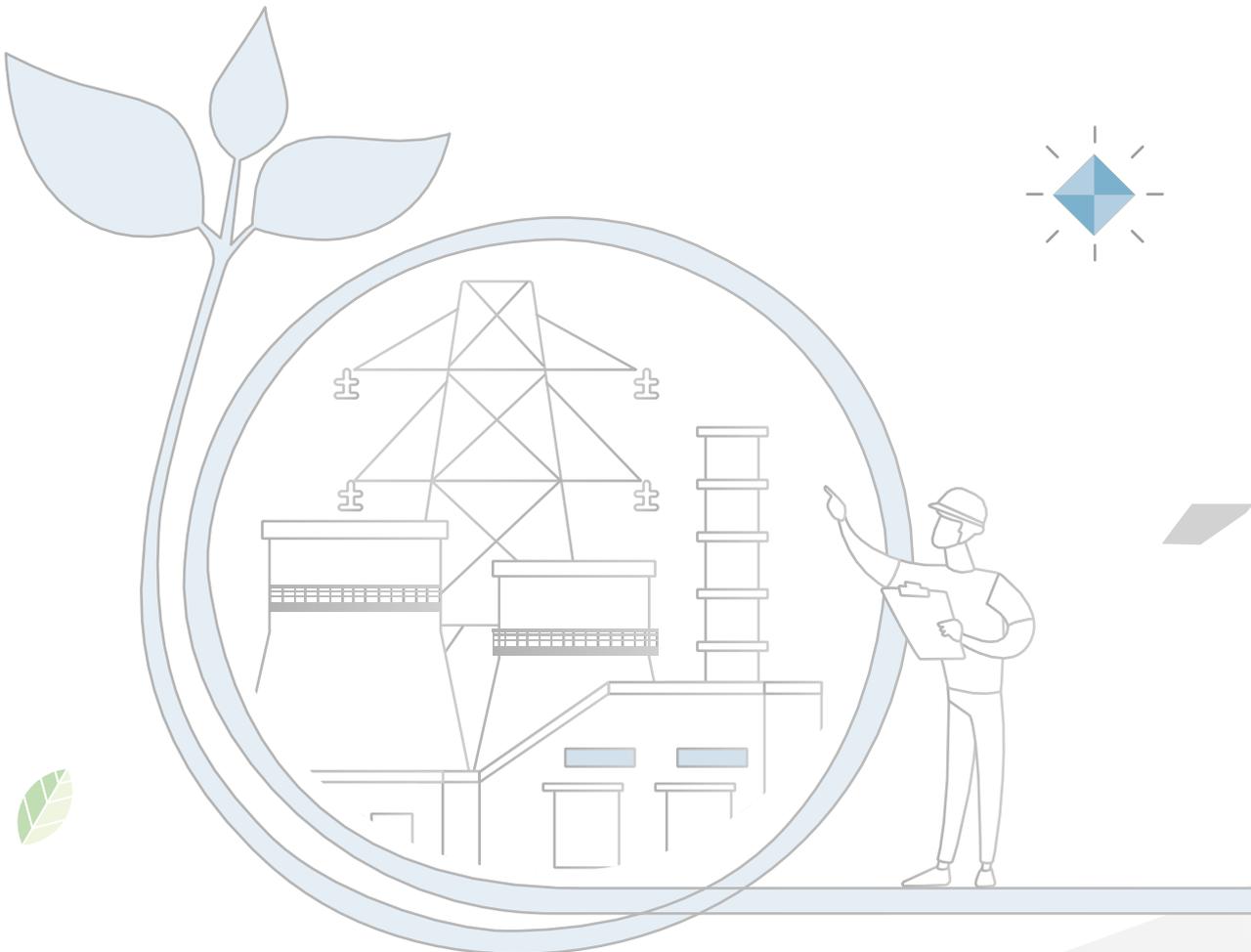
Environmental, Social and Governance Reporting Guide		Page Number	Report Content
<b>Aspect A2: Use of Resources</b>			
A2	General Disclosure	51-54 54-56	5.3.2 Energy Consumption Management 5.3.3 Water Resources Management
A2.1	Direct and/or indirect energy consumption by type (e.g. electricity, gas or oil) in total (kWh in '000s) and intensity (e.g. per unit of production volume, per facility).	12-16 51-54	2.7 Table of Key Performance Indicators 5.3.2 Energy Consumption Management
A2.2	Water consumption in total and intensity (e.g. per unit of production volume, per facility).	12-16 54-56	2.7 Table of Key Performance Indicators 5.3.3 Water Resources Management
A2.3	Description of energy use efficiency target(s) set and steps taken to achieve them.	51-54 98-103	5.3.2 Energy Consumption Management 9 Promoting Brand Globally
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.	54-56	5.3.3 Water Resources Management
A2.5	Total packaging material used for finished products (in tons) and, if applicable, with reference to per unit produced.	–	Not applicable due to product nature
<b>Aspect A3: The Environment and Natural Resources</b>			
A3	General Disclosure	40-69	5 Transformation Development Driven by Innovation
A3.1	Description of the significant impacts of activities on the environment and natural resources and the actions taken to manage them.	40-69	5 Transformation Development Driven by Innovation
<b>Aspect A4: Climate Change</b>			
A4	General Disclosure	60-62	5.3.4.2 Management of Greenhouse Gas
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.	60-62	5.3.4.2 Management of Greenhouse Gas

Environmental, Social and Governance Reporting Guide		Page Number	Report Content
<b>Subject Area B: Social</b>			
<b>Employment and Labour Practices</b>			
<b>Aspect B1: Employment</b>			
B1	General Disclosure	84-85	7.1 Protecting Employees' Rights and Interests
B1.1	Total workforce by gender, employment type (for example, full- or part-time), age group and geographical region.	12-16	2.7 Table of Key Performance Indicators
B1.2	Employee turnover rate by gender, age group and geographical region.	12-16	2.7 Table of Key Performance Indicators
<b>Aspect B2: Health and Safety</b>			
B2	General Disclosure	70-81	6 Safety Initiatives
B2.1	Number and rate of work-related fatalities occurred in each of the past three years including the reporting year.	12-16	2.7 Table of Key Performance Indicators
		70-81	6 Safety Initiatives
B2.2	Lost days due to work injury	12-16	2.7 Table of Key Performance Indicators
B2.3	Description of occupational health and safety measures adopted and how they are implemented and monitored.	77-79	6.3 Implementing Safety Measures
		79	6.4 Safeguarding Employees' Health
		88-89	7.3 Caring for the Mental and Physical Health of Employees

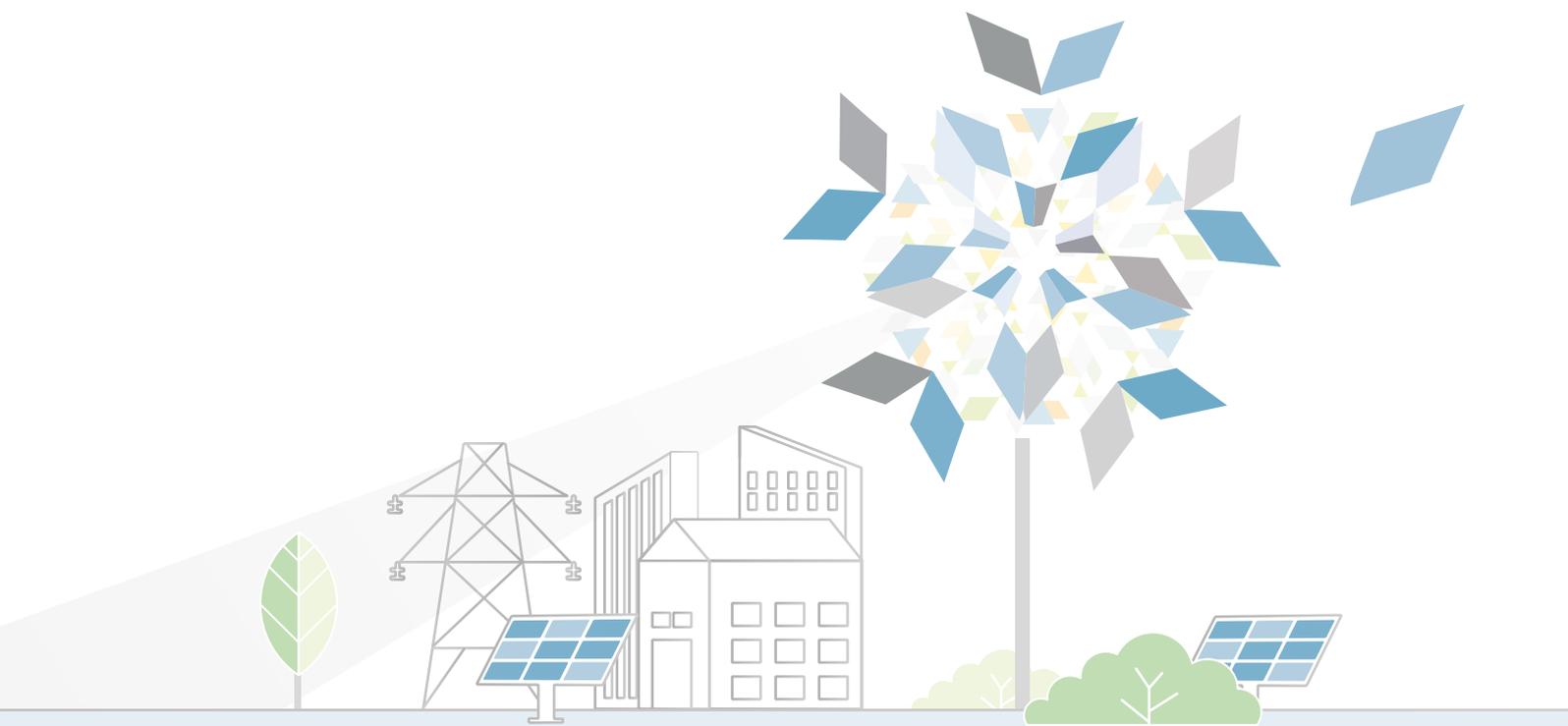


Environmental, Social and Governance Reporting Guide		Page Number	Report Content
<b>Aspect B3: Development and Training</b>			
B3	General Disclosure	80	6.5 Raising Employees' Safety Awareness
		85-87	7.2 Improving Talent Growth Mechanism
B3.1	The percentage of employees trained by gender and employee category (e.g. senior management, middle management).	12-16	2.7 Table of Key Performance Indicators
B3.2	The average training hours completed per employee by gender and employee category.	12-16	2.7 Table of Key Performance Indicators
<b>Aspect B4: Labour Standards</b>			
B4	General Disclosure	84-85	7.1 Protecting Employees' Rights and Interests
B4.1	Description of measures to review employment practices to avoid child and forced labour.	84-85	7.1 Protecting Employees' Rights and Interests
B4.2	Description of steps taken to eliminate such practices when discovered.	84-85	7.1 Protecting Employees' Rights and Interests
<b>Operating Practices</b>			
<b>Aspect B5: Supply Chain Management</b>			
B5	General Disclosure	92-94	8.1 Creating Value through In-depth Cooperation
B5.1	Number of suppliers by geographical region	12-16	2.7 Table of Key Performance Indicators
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.	92-94	8.1 Creating Value through In-depth Cooperation
B5.3	Description of practices used to identify environmental and social risks along the supply chain, and how they are implemented and monitored.	92-94	8.1 Creating Value through In-depth Cooperation
B5.4	Description of practices used to promote environmentally preferable products and services when selecting suppliers, and how they are implemented and monitored.	92-94	8.1 Creating Value through In-depth Cooperation

Environmental, Social and Governance Reporting Guide		Page Number	Report Content
<b>Aspect B6: Product Responsibility</b>			
B6	General Disclosure	28-31	4.1 Improving Capability of Guaranteeing Energy Supply
B6.1	Percentage of total products sold or shipped subject to recalls for safety and health reasons.	-	Not applicable due to product nature
B6.2	Number of products and service related complaints received and how they are dealt with.	95 12-16	8.2 Providing Sincere Services for Harmonious Development 2.7 Table of Key Performance Indicators
B6.3	Description of practices relating to observing and protecting intellectual property rights.	38-39	4.2.3 Protection of Intellectual Property Rights
B6.4	Description of quality assurance process and recall procedures.	-	Not applicable due to product nature
B6.5	Description of consumer data protection and privacy policies, and how they are implemented and monitored.	-	Not applicable due to product nature



Environmental, Social and Governance Reporting Guide		Page Number	Report Content
<b>Aspect B7: Anti-corruption</b>			
B7	General Disclosure	34-37	4.2.2 Anti-corruption
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.	34-37	4.2.2 Anti-corruption
B7.2	Description of preventive measures and whistle-blowing procedures, and how they are implemented and monitored.	34-37	4.2.2 Anti-corruption
B7.3	Description of anti-corruption training provided to directors and staff.	11-12	2.6 Company's ESG Responsibility Management
		34-37	4.2.2 Anti-corruption
<b>Community</b>			
<b>Aspect B8: Community Investment</b>			
B8	General Disclosure	96-97	8.3 Undertaking Public Welfare Activities for Common Development
		98-103	9 Promoting Brand Globally
B8.1	Focus areas of contribution (e.g. education, environmental concerns, labour needs, health, culture, sport).	96-97	8.3 Undertaking Public Welfare Activities for Common Development
		98-103	9 Promoting Brand Globally
B8.2	Resources contributed (e.g. money or time) to the focus area.	96-97	8.3 Undertaking Public Welfare Activities for Common Development



## 11.4 Contents Index of GRI Sustainability Reporting Standards (GRI Standards) of Global Reporting Initiative

GRI Standards Indicator	GRI Standards Description	Pages	References and Remarks
<b>GRI 1: Foundation 2021</b>			
<b>GRI 2: General Disclosures 2021</b>			
2-1	Organizational details	6-7	2.1 Company Profile
2-2	Entities included in the organization's sustainability reporting	107	11.1 About this Report
2-3	Reporting period, frequency and contact point	107	11.1 About this Report
2-4	Restatements of information		No previous reports have been rewritten
2-5	External assurance		No external assurance temporarily
2-6	Activities, value chain and other business relationships	92-94	8.1 Creating Value through In-depth Cooperation
2-7	Employees	84-85	7.1 Protecting Employees' Rights and Interests
2-8	Workers who are not employees	84-85	7.1 Protecting Employees' Rights and Interests
2-9	Governance structure and composition	7-8	2.2 Corporate Governance
2-22	Statement on sustainable development strategy	2-3	1 Chairman's Statement
2-23	Policy commitments	32-39	4.2 Legal and Compliant Operation
		84-85	7.1 Protecting Employees' Rights and Interests
2-24	Embedding policy commitments	92-94	8.1 Creating Value through In-depth Cooperation
		32-39	4.2 Legal and Compliant Operation
		84-85	7.1 Protecting Employees' Rights and Interests
		92-94	8.1 Creating Value through In-depth Cooperation

GRI Standards Indicator	GRI Standards Description	Pages	References and Remarks
2-25	Processes to remediate negative impacts	11-12	2.6 Company's ESG Responsibility Management
2-26	Mechanisms for seeking advice and raising concerns	17	2.8.1 Information about and Communication with Stakeholder
		122	11.5 Readers' Feedback
2-27	Compliance with laws and regulations	7-8	2.2 Corporate Governance
2-28	Membership associations	17	2.8.1 Information about and Communication with Stakeholder
2-29	Approach to stakeholder engagement	17	2.8.1 Information about and Communication with Stakeholder
2-30	Collective bargaining agreements	84-85	7.1 Protecting Employees' Rights and Interests
<b>GRI 3: Material Topics 2021</b>			
3-1	Process to determine material topics	18-19	2.8.2 Process for Identification of Material Issues
3-2	List of material topics	18-19	2.8.2 Process for Identification of Material Issues
<b>GRI 200 Economic</b>			
<b>Economic Performance</b>			
<b>GRI 3: Material Topics 2021</b>			
3-3	Management of material topics	4-21	2 About Us
<b>GRI 201: Economic Performance 2016</b>			
201-1	Direct economic value generated and distributed	12-16 96-97	2.7 Table of Key Performance Indicators 8.3 Undertaking Public Welfare Activities for Common Development

GRI Standards Indicator	GRI Standards Description	Pages	References and Remarks
<b>Anti-Corruption (Material Issue: Management by Law and Anti-Corruption)</b>			
<b>GRI 3: Material Topics 2021</b>			
3-3	Management of material topics	34-37	4.2.2 Anti-corruption
<b>GRI 205: Anti-Corruption 2016</b>			
205-1	Operations assessed for risks related to corruption	34-37	4.2.2 Anti-corruption
205-2	Communication and training about anti-corruption policies and procedures	34-37	4.2.2 Anti-corruption
205-3	Confirmed incidents of corruption and actions taken	34-37	4.2.2 Anti-corruption
<b>GRI 300 Environmental</b>			
<b>Energy (Material Issues: Energy Use, Clean and Sustainable Energy)</b>			
<b>GRI 3: Material Topics 2021</b>			
3-3	Management of material topics	42-47	5.1 Deepening the Energy Revolution
		48-50	5.2 Inspiring Independent Innovation
<b>GRI 302: Energy 2016</b>			
302-1	Energy consumption within the organisation	51-54	5.3.2 Energy Consumption Management
302-3	Energy intensity	51-54	5.3.2 Energy Consumption Management
		28-31	4.1 Improving Capabilities of Guaranteeing Energy Supply
<b>Water Resources and Sewage</b>			
<b>GRI 3: Material Topics 2021</b>			
3-3	Management of material topics	54-56	5.3.3 Water Resources Management
<b>GRI 303: Water Resources and Sewage 2018</b>			
303-1	Interactions with water as a shared resource	54-56	5.3.3 Water Resources Management
303-2	Management of water discharge-related impacts	54-56	5.3.3 Water Resources Management
303-3	Water withdrawal	54-56	5.3.3 Water Resources Management

GRI Standards Indicator	GRI Standards Description	Pages	References and Remarks
303-4	Water discharge	54-56	5.3.3 Water Resources Management
303-5	Water consumption	54-56	5.3.3 Water Resources Management
<b>Emissions (Material Issues: Tackling climate change and Emission Control)</b>			
<b>GRI 3: Material Topics 2021</b>			
3-3	Management of material topics	57-67	5.3.4 Emissions Management
<b>GRI 305: Emissions 2016</b>			
305-1	Direct (Scope 1) (GHG) emissions	60-62	5.3.4.2 Management of Greenhouse Gases
305-2	Energy indirect (Scope 2) GHG emissions	60-62	5.3.4.2 Management of Greenhouse Gases
305-4	GHG emissions intensity	60-62	5.3.4.2 Management of Greenhouse Gases
305-7	Nitrogen oxides (NOx), sulphur oxides (SOx), and other significant air emissions	57-60	5.3.4.1 Exhaust Gas Management
<b>Effluents and Waste</b>			
<b>GRI 3: Material Topics 2021</b>			
3-3	Management of material topics	63-64 64-67	5.3.4.3 Wastewater Management 5.3.4.4 Waste Management
<b>GRI 306: Effluents and Waste 2016</b>			
306-1	Water discharge by quality and destination	63-64	5.3.4.3 Wastewater Management
306-2	Waste by type and disposal method	64-67	5.3.4.4 Waste Management

GRI Standards Indicator	GRI Standards Description	Pages	References and Remarks
<b>Supplier Environmental Assessment</b>			
<b>GRI 3: Material Topics 2021</b>			
3-3	Management of material topics	92-94	8.1 Creating Value through In-depth Cooperation
<b>GRI 308: Supplier Environmental Assessment 2016</b>			
308-2	Negative environmental impacts in the supply chain and actions taken	92-94	8.1 Creating Value through In-depth Cooperation
<b>GRI 400 Social</b>			
<b>Occupational Health and Safety (Material Issue: Safe Production and Occupational Health)</b>			
<b>GRI 403: Occupational Health and Safety 2018</b>			
403-2	Hazard identification, risk assessment and incident investigation	79-81	6.4 Safeguarding Employees' Health 6.5 Raising Employees' Safety Awareness 6.6 Consolidating Infrastructure Construction Safety
403-7	Prevention and mitigation of occupational health and safety impacts directly related to business relationship	79-81	6.4 Safeguarding Employees' Health 6.5 Raising Employees' Safety Awareness 6.6 Consolidating Infrastructure Construction Safety
403-9	Occupational injury	12-16	2.7 Table of Key Performance Indicators
<b>Training and Education (Material Issue: Staff Training and Development)</b>			
<b>GRI 3: Material Topics 2021</b>			
3-3	Management of material topics	85-87	7.2 Improving Talent Growth Mechanism
<b>GRI 404: Training and Education 2016</b>			
404-2	Programs for upgrading employee skills and transition assistance programs	85-87	7.2 Improving Talent Growth Mechanism

GRI Standards Indicator	GRI Standards Description	Pages		References and Remarks
<b>Child Labour</b>				
<b>GRI 3: Material Topics 2021</b>				
3-3	Management of material topics	84-85	7.1	Protecting Employees' Rights and Interests
<b>GRI 408: Child Labour 2016</b>				
408-1	Operations and suppliers at significant risk for incidents of child labour	84-85	7.1	Protecting Employees' Rights and Interests
<b>Forced or Compulsory Labour</b>				
<b>GRI 3: Material Topics 2021</b>				
3-3	Management of material topics	84-85	7.1	Protecting Employees' Rights and Interests
<b>GRI 409: Forced or Compulsory Labour 2016</b>				
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labour	84-85	7.1	Protecting Employees' Rights and Interests
<b>Supplier Social Assessment</b>				
<b>GRI 3: Material Topics 2021</b>				
3-3	Management of material topics	92-94	8.1	Creating Value through In-depth Cooperation
<b>GRI 414: Supplier Environmental Assessment 2016</b>				
414-2	Negative social impacts in the supply chain and actions taken	92-94	8.1	Creating Value through In-depth Cooperation

## 11.5 Readers' Feedback

### Dear readers:

Hello! Thank you for reading this report. We particularly wish to listen to your comments and suggestions, and your comments and suggestions are the driving force behind our continuous improvement of our report.

Please help to complete the relevant questions raised in the feedback form and mail it to the headquarters of the Company (headquarters address: Huaneng Building, Fuxingmennei Street 6, Xicheng District, Beijing).

1. Your overall assessment of the Company's "Environmental, Social and Governance Report" is:  
 good       fair       poor
2. Do you think this report reflects the Company's significant impacts on the environmental, social and governance?  
 good       fair       poor
3. What do you think of the information, and the accuracy and completeness of the indicator data disclosed in this report?  
 good       fair       poor
4. What do you think of the Company in serving its customers and protecting the interests of its stakeholders?  
 good       fair       poor
5. Which part of the report do you concern the most?  

---
6. Is there any content that you are looking for but not found in this report? If yes, please write down what you are concerned about.  

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If you wish, you are welcome to provide personal information to facilitate further communication with you:

Name:

Organisation:

Postal Code:

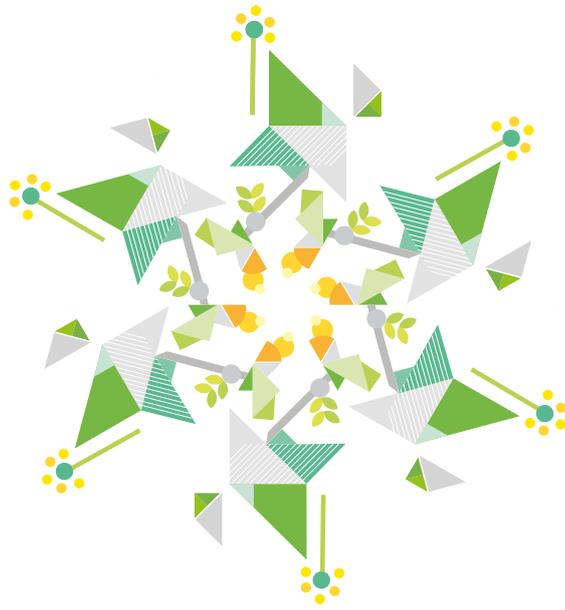
Fax:

Occupation:

Contact Address:

Tel:

E-mail:



 華能國際電力股份有限公司  
Huaneng Power International, Inc.