2023 ANNUAL REPORT

POWERING A BRIGHTER TOMORROW

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

STOCK CODE : 902

As a power company, devoted to providing sufficient, reliable and eco-friendly energy to the community; as a listed company, devoted to creating long-term, stable and increasing returns for shareholders; and as a first class power producer, devoted to having excellency in operation, becoming a leading power enterprise in China and an advanced enterprise internationally.

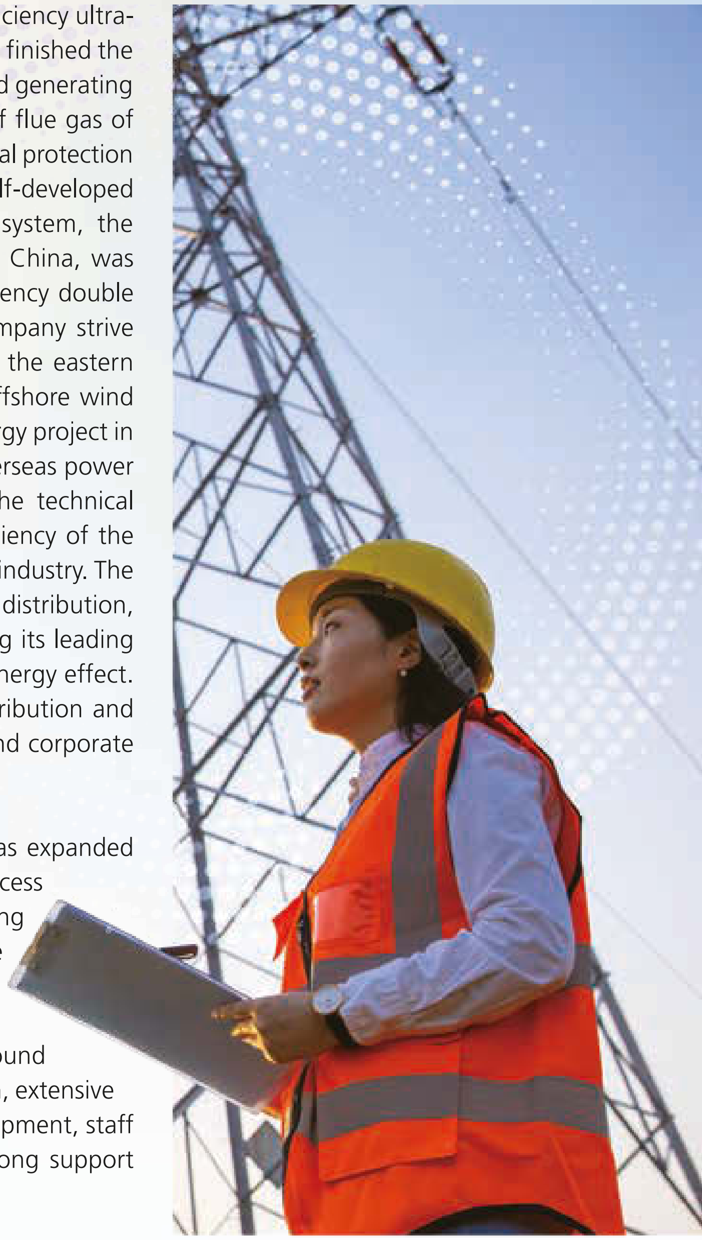
CONTENTS

COMPANY PROFILE

Huaneng Power International, Inc. (the "Company" or "Huaneng Power") and its subsidiaries are mainly engaged in developing, constructing, operating and managing 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. As at 31 December 2023, the Company has 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.

The Company was incorporated on 30 June 1994. It completed its initial global public offering of 1,250,000,000 overseas listed foreign shares ("foreign shares") in October 1994, which were listed on the New York Stock Exchange (Stock Code: HNP*) in the United States by issuing 31,250,000 American Depository Shares ("ADS"). In January 1998, the foreign shares of the Company were listed on The Stock Exchange of Hong Kong Limited (the "Hong Kong Stock Exchange") by way of introduction (Stock Code: 902). Subsequently, in March 1998, the Company successfully completed a global placing of 250,000,000 foreign shares along with a private placing of 400,000,000 domestic shares. In November 2001, the Company successfully completed the issue of 350,000,000 A Shares (Stock Code: 600011) in the People's Republic of China ("China", "PRC"), of which 250,000,000 domestic public shares were listed on the Shanghai Stock Exchange. In December 2010, the Company completed the nonpublic issuance of 1,500,000,000 A Shares and 500,000,000 H Shares. In November 2014, the Company completed the non-public issuance of 365,000,000 H Shares. In November 2015, the Company completed the non-public issuance of 780,000,000 H Shares. In October 2018, the Company completed the non- public issuance of 498 million A shares. Currently, the total share capital of the Company amounts to approximately 15.7 billion shares. The Company's direct and ultimate controlling shareholder are Huaneng International Power Development Corporation ("HIPDC") and China Huaneng Group Co., Ltd. ("Huaneng Group"), respectively.

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 and operate power plants. As a power generation enterprise, the Company has been insisting on innovations in technologies, structure, and management since its incorporation. On aspects regarding the advancement in power technologies and construction and management of power plants, the Company has been the pioneer and has created various milestones within the domestic power industry, which facilitated the great leap development of the power business and technological advancement of the power station equipment manufacturing industry in China, and also significantly contributed to the improvement of technical and management standards of the domestic power generation enterprises. The Company was the first to introduce a 600 MW supercritical generating unit into China and we also started operating the first domestically built single 1,000 MW ultra-supercritical coal-fired generating unit, and the first digitalized 1,000 MW ultra-supercritical coal-fired generating unit in China. The Company completed the construction of the first 1,000 MW generating unit in the world using sea water desulphurization facilities and 660 MW high-efficiency ultra-supercritical coal-fired unit with the highest parameters in China, finished the construction of the first double reheat ultra-supercritical coal-fired generating unit, and developed the technology for synergistic treatment of flue gas of coal-fired power plants, which was widely applied in environmental protection renovation and newly-constructed projects. The Company's self-developed safe and intelligent DCS/DEH integrated distributed control system, the first set of major technical equipment completely produced in China, was put into operation in a 1,000 MW ultra-supercritical high-efficiency double reheat generating unit, and has been widely applied. The Company strive to promote the construction of offshore wind power bases in the eastern coastal areas, and create advantages in the development of offshore wind power clusters. The Company also completed the first major energy project in the China-Pakistan Economic Corridor, creating China's best overseas power construction project in terms of safety, quality and speed. The technical and economic indicators as well as the overall manpower efficiency of the Company have been remaining at the forefront in China's power industry. The Company constantly optimizes the power structure and regional distribution, and accelerates development of new energy while consolidating its leading position in conventional energy, aiming to enhance industrial synergy effect. Furthermore, it has expanded the service range for power distribution and sales to achieve an overall improvement in operation, quality and corporate vigour.



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, 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.

The objectives of the Company are: as a power company, devoted to providing sufficient, reliable and eco-friendly energy to the community; as a listed company, devoted to creating long-term, stable and increasing returns for shareholders; and as a first-class power producer, devoted to having excellency in operation, becoming a leading power enterprise in China and an advanced enterprise in the international market.

* The ADS of the Company was delisted from New York Stock Exchange on 7 July 2022, Eastern Standard Time.

DISTRIBUTION OF POWER PLANTS OF THE COMPANY

CHINA NETWORK

Heilongjiang
4,340

Jilin
3,948

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

Wind-power

PV Power

Coal-fired

Combined Cycle

Hydro-power

Biomass power

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

MAJOR CORPORATE EVENTS IN 2023

- The Company announced the domestic on-grid electricity for the whole year of 2022. The domestic on-grid electricity sold by the Company for the whole year recorded 425,186 million kWh, representing a year-on-year decrease of 1.44%.

JAN

MAR

- The Company announced its annual operating results for 2022. According to the PRC GAAP, the net loss attributable to shareholders of the Company was approximately RMB7,387 million.
- The Company held a global investor telephone conference for its annual results for 2022 with more than 230 people (including domestic and foreign analysts from securities companies and fund managers) attending the conference.
- The Unit 2 (495 MW) of Hainan Yangpu Natural Gas Thermal Power Joint Production Project of the Company successfully passed the full-load trial operation for 168 hours and was officially put into commercial operation. This project is the first gas turbine power plant in China with a fully autonomous and controllable "domestic brain". It has contributed Huaneng's wisdom and strength to solving "bottleneck" technology problems and promoting the realization of the goal of "carbon neutrality and carbon emission peaking".
- The 500 MW wind power station project of Shandong Da'an of the Company was connected to the grid at full capacity, marking the Company's first large-capacity cross-regional new energy project being put into operation.

APR

- The Company announced the domestic on-grid electricity for the first quarter in 2023. The Company achieved domestic on-grid electricity sold of 107,009 million kWh in the first quarter, representing a year-on-year decrease of 0.66%.
- The Company announced its results for the first quarter of 2023. According to the PRC GAAP, the net profit attributable to shareholders of the Company was RMB2,250 million, representing a year-on-year increase of RMB3,207 million or 335.3%.
- The Company held a global investor telephone conference for its results for the first quarter of 2023 with more than 230 people (including domestic and foreign analysts from securities companies and fund managers) attending the conference.
- The 5MW (the largest capacity in the world) supercapacitor energy storage system has completed grid dispatching and joint commissioning at Fujian Luoyuan Power Plant of the Company with all technical indicators meeting the requirements, and has successfully entered the commercial operation stage, which indicated that the research and development, integration and application of the supercapacitor technology in China have ranked among the top in the world.

MAY

- The Unit 6 (650 MW) of Shanghai Shidongkou No. 1 Plant of the Company successfully passed the full-load trial operation for 168 consecutive hours, which demonstrated that the first equal-capacity coal-fired power substitution demonstration project in China has been fully completed and put into operation, providing valuable wisdom and experience for the replacement and transformation of coal-fired power plants and offering more reliable, clean and flexible power supply support for Shanghai during the peak summer season.
- The China Electric Power Construction Enterprise Association has announced the review results for 2023 China Electric Power Quality Engineering Projects. Eight projects of the Company including Phase II Expansion Project of Jiangxi Ruijin Power Plant (2*1,000 MW), Guangdong Dongguan Xiegang Gas-fired Combined Heat and Power Co-production Project (945 MW), Jiangsu Jiangyin Gas Turbine Heat and Power Co-production Project (880 MW), the "Closing down smaller generation units and replaced with bigger ones" Heat and Power Co-production Project of 2 x 350 MW Units of Shandong Jining Thermal Power Plant, Shandong Dezhou Dingzhuang Wind, Solar and Storage Integrated Power Generation Project, Shandong Peninsula South No. 4 Offshore Wind Power Project, 2,000 MW of Jilin Tongyu Grid-Parity Phase I and II Project (2,000MW) and 200 MW of C Area of Gansu Anbei Third Wind Farm passed the review and were awarded the 2023 China Electric Power Quality Engineering Project.

JUN

- The Company held the 2022 Annual General Meeting, and considered and approved eight proposals, including the report from the Board of Directors of the Company for 2022.
- The Company won the "Special Contribution Award for Corporate Governance" of the 18th "Golden Prize of Round Table" of Chinese Boards of Listed Companies.

JUL

- The Company announced the domestic on-grid electricity in the first half of 2023. The Company achieved domestic on-grid electricity sold of 211,148 million kWh in the first half of the year, representing a year-on-year increase of 7.43%.
- The Company announced its interim results for 2023. According to the PRC GAAP, the net profit attributable to shareholders of the Company was RMB6,308 million, representing a year-on-year increase of RMB9,317 million or 309.67%.
- The Company held a global investor telephone conference for its interim results for the year of 2023 with more than 340 people (including domestic and foreign analysts from securities companies, fund managers and individual investors) attending the conference.
- The first set of 2,000t/year CO_2 capture device for flue gas from combustion engines in China was put into operation in Hainan Yangpu Thermal Power Plant of the Company, which verified the new carbon capture solvent and process technology, dynamic capture operation mechanism and strategy, achieved the coordinated operation of the carbon capture device and the peak-shaving gas power plant, and provided technical support for the low-cost and low-carbon emission operation of gas turbine units in the future.

SEP

- The Company received an "A" grade rating for annual information disclosure of Shanghai Stock Exchange.

OCT

- The Company announced the domestic on-grid electricity for the first three quarters of 2023. The Company achieved domestic on-grid electricity sold of 337,380 million kWh for the first three quarters of the year, representing a year-on-year increase of 5.38%.
- The Company announced its results for the first three quarters of 2023. According to the PRC GAAP, the net profit attributable to shareholders of the Company was approximately RMB12,564 million, representing a year-on-year increase of RMB16,506 million or 418.69%.
- The Company held a global investor telephone conference for its results for the third quarter of 2023 with more than 210 people (including domestic and foreign analysts from securities companies, fund managers and individual investors) attending the conference.
- The Company participated in the "2023 High-quality Development Collective Roadshow of Listed Companies in Shanghai – ESG Special Event for Central Enterprises" hosted by the Shanghai Stock Exchange, and conducted on-site exchanges with investors.
- The Company was awarded the honor of "Best Practice Case of Corporate Governance in 2023" by the China Association for Public Companies.
- The results of the 37th International ARC Annual Report Awards organized by MerComm, an American independent organization, were announced, indicating that the Company's 2022 H-share annual report won three awards, namely the Traditional Annual Report Silver Award for Power Companies, the Traditional Annual Report Bronze Award for the Energy Category, and the Cover Design Silver Award for the Energy Category.

NOV

- The Company was awarded the honor of "Best Practice Case of the Board of Listed Companies in 2023" by the China Association for Public Companies.
- The Company was selected as the "Central Enterprises ESG • Vanguard 100 Index" because of its outstanding achievements in the ESG rating of listed companies controlled by central enterprises in 2023 by the State-owned Assets Supervision and Administration Commission.
- The Company's network security platform project won the first prize of China electric power science and technology progress in 2023.

DEC

- The Company held the 2023 first extraordinary general meeting, and considered and approved eight proposals, including the proposal regarding the continuing connected transactions between the Company and Huaneng Group for 2024.

- China Association of Construction Enterprise Management announced that the Phase II Expansion Project of Jiangxi Ruijin Power Plant (2*1,000 MW) of the Company won the national quality engineering gold award, and four projects, namely Guangdong Dongguan Xiegang Gas-fired Combined Heat and Power Co-production Project (945 MW), Henan Puyang 500 MW Wind Farm Project, Jiangsu Dafeng 400 MW Offshore Wind Power Project and Shandong Peninsula South No. 4 Offshore Wind Power Project, won the national quality engineering award simultaneously; the "application and research of the speed regulating feed water pump of the BEST generator in the second reheat million units" won the first prize of scientific and technological progress in engineering construction.

- The second-phase project of gas turbine flue gas waste heat utilization of Beijing Thermal Power Plant of the Company completed the performance test under various load conditions and was successfully handed over for production, marking the successful operation of the largest gas turbine flue gas high-efficiency waste heat utilization project in the world. This project has an important demonstration role in improving the utilization rate of primary energy, saving energy and reducing carbon, and has played a leading role of the Company in the field of green energy and clean energy heating in the capital.

- The first batch of demonstration projects of the national 10 GW offshore wind power base in eastern Guangdong – the Guangdong Shantou Lemen (II) 594 MW offshore wind farm project of the Company, was connected to the grid for operation, marking Huaneng's "zero" breakthrough in offshore wind power in Guangdong.

- The Company participated in the three year theme publicity activity of the Shanghai Stock Exchange to improve the quality of listed companies. Huang Lixin, the President of the Company, was interviewed by six mainstream financial media, including ShangHai Securities News, China Securities Journal, Securities Times, Securities Daily, China Business News and Economic Information Daily. As a representative of the power industry of central enterprises and state-owned enterprises, the Company has made positive and in-depth communication and exchanges with the media, fully demonstrating the excellent image of Huaneng.

- The Company won the "Best Investor Relations Management Listed Company" in the Crystal Ball Award for Listed Companies by the Securities Market Weekly in 2023.

- The Company was awarded the 5A Rating of "Performance Assessment of the Secretary of the Board of Listed Companies in 2023" and the honor of "Best Practice of the Board of Listed Companies in 2023" by the China Association for Public Companies.

- The Company won the "ESG Best Practice Case of Listed Companies in 2023" by the China Association for Public Companies, and was included in the Almanac of Chinese Listed Companies (2022).

- The Company's network security technology innovation and service support platform project won the first prize of electric power technology innovation in 2023.

- The Company won the "Best Listed Company" and the "Annual Special Award – 2023 Listed Company Awards of Excellence" in the 13th China Securities "Golden Bauhinia" selection activity.

FINANCIAL HIGHLIGHTS

(Amounts expressed in thousands of RMB, except per share data)

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (Note 3)

	YEAR ENDED 31 DECEMBER				
	2019	2020	2021 (Restated) (Note 2)	2022	**2023**
OPERATING REVENUE	174,009,401	169,446,338	205,079,497	246,724,789	**254,396,695**
Profit/(Loss) Before Income Tax Expense	3,119,460	4,773,736	(14,863,594)	(10,813,957)	**12,477,142**
Income Tax Expense	(2,011,255)	(2,163,173)	1,929,755	(158,658)	**(3,707,733)**
Profit/(Loss) After Income Tax Expense	1,108,205	2,610,563	(12,933,839)	(10,972,615)	**8,769,409**
Attributable To:					
– Equity Holders of the Company	766,345	2,377,851	(10,377,939)	(8,026,233)	**8,357,460**
– Non-Controlling Interests	341,860	232,712	(2,555,900)	(2,946,382)	**411,949**
Basic Earnings/(Losses) Per Share (RMB/Share)	0.01	0.04	(0.80)	(0.65)	**0.35**
Diluted Earnings/(Losses) Per Share (RMB/Share)	0.01	0.04	(0.80)	(0.65)	**0.35**

CONSOLIDATED STATEMENTS OF FINANCIAL POSITION (Note 4)

	AS AT 31 DECEMBER				
	2019	2020	2021 (Restated) (Note 2)	2022	**2023**
Total assets	428,250,063	449,904,658	501,049,410	512,221,773	**550,316,013**
Total liabilities	297,871,017	298,288,460	367,213,210	376,905,714	**370,961,535**
Net assets	130,379,046	151,616,198	133,836,200	135,316,059	**179,354,478**
Equity holders of the Company	108,803,735	129,845,923	113,327,155	115,664,522	**138,763,115**
Non-controlling interests	21,575,311	21,770,275	20,509,045	19,651,537	**40,591,363**

Notes:

1. The Company and its subsidiaries have adopted IFRS 16 *Leases* with the date of initial application of 1 January 2019. The standard is applied retrospectively with the cumulative effect of initial adoption as an adjustment to the opening balance of retained earnings at 1 January 2019, and the comparative information for prior years was not restated.

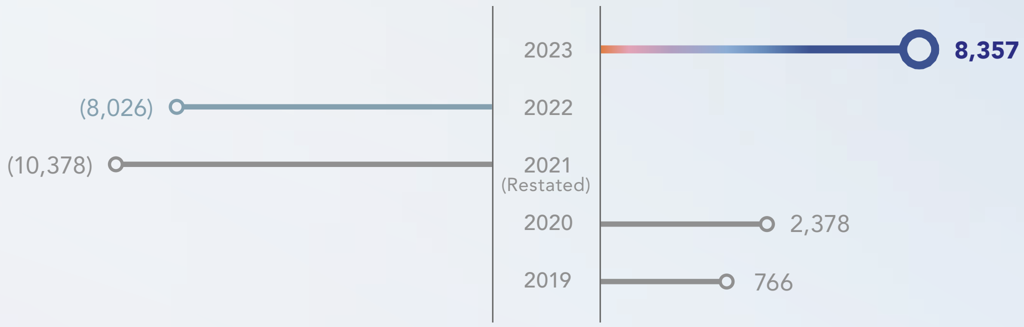
2. The Company and its subsidiaries have adopted Amendments to IAS 16, *Property, Plant and Equipment-Proceeds before Intended Use*, with the date of initial application of 1 January 2021. The standard is applied retrospectively with the cumulative effect of initial adoption as an adjustment to the opening balance of retained earnings at 1 January 2021, and the comparative information for the year ended 31 December 2021 was restated.

3. The results for the years ended 31 December 2019, 2020 and 2021 are derived from the historical financial statements of the Company. The results for the years ended 31 December 2022 and 2023 are set out on pages 132 to 134. All such information is extracted from the financial statements prepared under International Financial Reporting Standards ("IFRSs").

4. The consolidated statements of financial position as at 31 December 2019, 2020 and 2021 are derived from the historical financial statements of the Company. The consolidated statements of financial position as at 31 December 2022 and 2023 are set out on pages 135 to 137. All such information is extracted from the financial statements prepared under IFRSs.

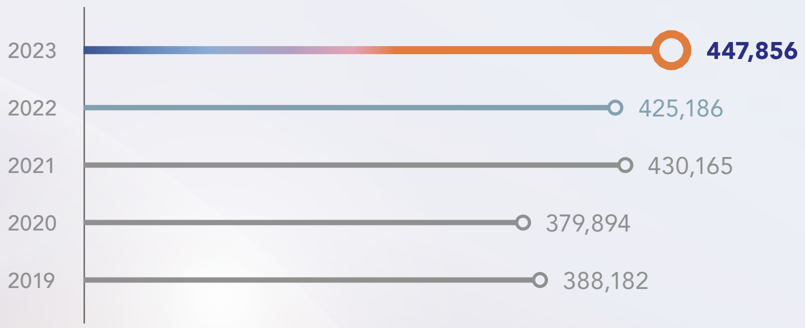
PROFIT/(LOSS) ATTRIBUTABLE TO EQUITY HOLDERS OF THE COMPANY UNDER IFRSs (RMB Million)

For the years ended 31 December



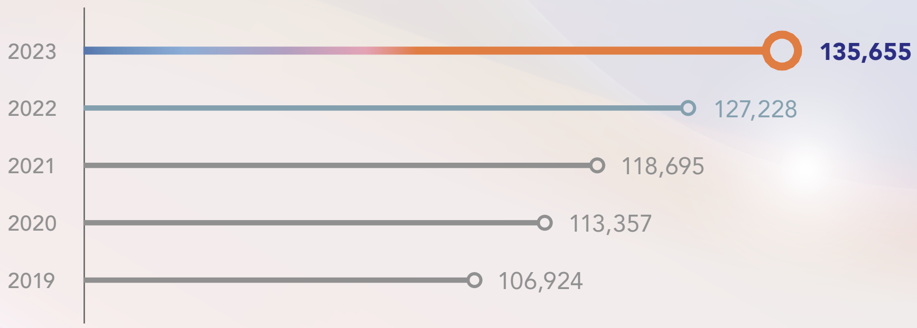
THE TOTAL ELECTRICITY SOLD BY POWER PLANTS OF THE COMPANY (Million KWH)

For the years ended 31 December



A CONTROLLED INSTALLED GENERATION CAPACITY (MW)

As at 31 December



LETTER TO SHAREHOLDERS

ENERGY FOR BRIGHTER TOMORROW

WANG KUI
Chairman

The development objectives of Huaneng Power are:

as a power company, devoted to providing sufficient, reliable and eco-friendly energy to the community; as a listed company, devoted to creating long-term, stable and increasing returns for shareholders; and as a first- class power producer, devoted to having excellency in operation, becoming a leading power enterprise in China and an advanced enterprise in the international market.

DEAR SHAREHOLDERS,

In 2023, in the face of the complex external situation and multiple challenges, the Company adhered to the work policy of seeking progress while maintaining stability and obtaining certain results while making progress, proactively responded, deployed scientifically and effectively fulfilled its responsibility of providing sufficient, reliable, and eco-friendly electric energy to the community. The overall safety production situation throughout the year was generally stable with outstanding highlights in quality and efficiency improvement. The Company accelerated the pace of transformation and upgrading, made new achievements in scientific and innovation and new improvements in brand image and the main tasks and objectives of the year were well completed. In 2023, the Company achieved consolidated operating revenue of RMB254.397 billion, representing a year-on-year increase of 3.11%, and net profit attributable to the equity holders of the Company of RMB8.357 billion, representing a year-on-year increase of RMB16.384 billion or 204.13%. In accordance with the dividend policy in the Articles of Association of the Company, the Board of Directors of the Company proposed 2023 dividend to be a cash dividend of RMB0.20 (inclusive of tax) per share for all shares held by shareholders, and the distribution plan would be submitted to the 2023 annual general meeting of the Company for consideration.

The Company firmly adhered to the concept of safe development, and the safety guarantee ability was further improved. The Company has always regarded energy security and guaranteed supply as a major social responsibility, scientifically coordinated key tasks such as power marketing, fuel procurement, inventory management and fund guarantee, effectively strengthened the energy supply capacity, ensured stable and reliable power and heat supply throughout the year, and successfully completed the tasks of guaranteed supply of energy and security services during important periods of major events. The Company adhered to the guidance of comprehensively improving the intrinsic safety level, continued to deepen the reform and development in the field of safety production, increased the safety management in the field of thermal power infrastructure, continuously consolidated the foundation of safety production, and effectively implemented the responsibility of safety management. The production infrastructure remained safe and stable throughout the year, and the thermal power infrastructure achieved zero casualties and zero accidents.

The Company adhered to taking the operation efficiency as the center, and achieved remarkable results in improving quality and efficiency. Based on the principle of maximizing the overall interests, the Company adhered to the overall planning of quantity and price, optimized the power marketing strategy in a timely manner, and strove to increase effective power generation. The Company proactively facilitated the entering into of medium and long-term thermal coal contracts, constantly optimized the supply structure of domestic and foreign trade, and strictly controlled the fuel procurement cost, and the coal procurement price dropped significantly year-on-year. The Company made great efforts to strengthen the management of overseas business, actively judged the power and fuel market situation in Singapore, and continuously optimized its operation strategy. Tuas Power achieved new breakthroughs in its operating performance. The overall benefit of the Company achieved a turnaround throughout the year, and the core operating indicators were all better than the annual target.

The Company made new breakthroughs in transformation and development, and took new steps in green development. The Company adheres to green, low-carbon, clean and efficient development, and makes great efforts to participate in the construction of a new type of power system. The approval, commencement and production scale of new energy throughout the year reached a record high, exceeding the annual target. The regional layout of offshore wind power has been further expanded, with the breakthrough of "zero" in production in Guangdong and "zero" in construction in Hainan. As of the end of 2023, the installed capacity of low-carbon clean energy increased to 31.24%.

The Company adhered to scientific and technological innovation as the first driving force, and achieved outstanding results in scientific and technological innovation. The Company's offshore wind power project passed the comprehensive performance evaluation conducted by the Ministry of Science and Technology; the high-temperature material project passed the acceptance and made more than ten technical breakthroughs; the gas turbine independent operation and maintenance project completed the main research and development tasks, and three independent technologies were included in the recommended catalogue of scientific and technological innovation achievements of central

enterprises. The Company set up a technical innovation consortium of liquid slag-discharging boilers burning high-alkali coal, built the largest 5 MW supercapacitor energy storage system in the world, successfully put into operation the world's largest-scale project of high-efficiency residual heat utilization of combustion turbine flue gas; launched the high value-added comprehensive utilization of ash slag and developed a new type of thermal insulation fiber material.

The Company continued to deepen internal governance and achieved new improvements in its brand image. The Company organically connected and promote the work of "creating first-class" and improving the quality of listed companies, focused on strengthening standardized operations, successfully completed the re-election of the Board of Directors and the Board of Supervisors and effectively built the Board of Directors and the Board of Supervisors with excellent governance structure, profound professional background, extensive experience in management, excellent leadership and high degree of diversification. The Company strengthened the investor relation management, deepened communication with regulatory institutions and investors, narrated the Company's brand story well and displayed a good image of the Company. The Company has received many honors in terms of information disclosure, investor relations, ESG practices, etc., and the brand value of the Company has continued to increase.

Looking forward to 2024, the Company will further strengthen its confidence and work tenaciously, comprehensively improve risk prevention and control levels, lean operation and management, green development efficiency and corporate governance capabilities, and pay more attention to operational excellence, value creation, and brand building, strive to create a new situation for the high-quality development of the Company and accelerate the pace of building a world-class listed power generation company.

Being a responsible enterprise, the Company insists on supporting the continued enhancement of our corporate competitive edges through a responsible approach, insists on duly performing our operational responsibilities to provide our shareholders with long-term, stable and increasing returns, continues to perform our safety responsibilities, to be people-oriented and be focused on safety development for the sake of developing itself into an enterprise with the highest safety standard, continues to perform our environmental responsibilities by paying heed to people's livelihood and concerning clean development to ensure utilization of resources in an efficient and energy-saving manner, thus turning the Company into a "green corporation", continues to perform our social responsibilities by creating mutual benefits and win-win scenarios that are conducive to the harmonious development of the Company and its stakeholders, so that the Company may serve as an excellent corporate citizen.

WANG KUI
Chairman

Beijing, the PRC
19 March 2024

MANAGEMENT'S DISCUSSION AND ANALYSIS

The principal activities of the Company are construction, operation and management of power plants within China. The Company is one of the largest listed power generation companies in China. As of 31 December 2023, the Company had a controlled installed capacity of 135,655 MW, of which approximately 31.24% was from clean energy sources (gas turbine, hydro, wind and photovoltaic power generation).

OPERATING AND FINANCIAL REVIEWS AND PROSPECTS

MANAGEMENT'S DISCUSSION AND ANALYSIS

(Prepared under IFRSs)

General

The principal activities of the Company are investment in, and construction, operation and management of, power plants within China. The Company is one of the largest listed power generation companies in China. As of 31 December 2023, the Company had a controlled installed capacity of 135,655 MW, of which approximately 31.24% was from clean energy sources (gas turbine, hydro, wind, photovoltaic and biomass power generation). The Company located its power plants in 26 provinces, autonomous region and municipalities within China; the Company also owns a wholly owned power enterprise located in Singapore, and invests in a power enterprise located in Pakistan.

For the year ended 31 December 2023, the operating revenue of the Company amounted to RMB254,397 million, representing an increase of 3.11% over the same period of last year. The Company's annual results turned around as a result of the year-on-year decline in unit fuel costs and year-on-year growth in electricity generation from its domestic operations, as well as a significant year-on-year increase in profit from the Company's Singapore operations, among other factors. The net profit attributable to equity holders of the Company was RMB8.357 billion, representing an increase of RMB16.384 billion or 204.13% as compared with the same period of last year; the earnings per share was RMB0.35.

A. OPERATING RESULTS

1. 2023 operating results

The electricity sold by the Company's domestic power plants for the year ended 31 December 2023 is as listed below (in 100 million kWh):

Type/Region	Electricity Sold 2023 1-12	Electricity Sold Year-on-Year Change
Coal-fired	**3,758.04**	3.27%
Combined Cycle	**277.06**	5.15%
Wind Power	**318.35**	16.14%
PV	**109.11**	81.67%
Hydro-power	**7.48**	-7.53%
Biomass power	**8.51**	18.29%
Heilongjiang Province	**133.04**	9.96%
Coal-fired	**103.36**	4.51%
Wind Power	**25.17**	36.32%
PV	**2.94**	-4.69%
Biomass power	**1.57**	185.69%
Jilin Province	**126.66**	11.77%
Coal-fired	**80.76**	3.65%
Wind Power	**40.10**	38.34%
Hydro-power	**0.51**	-47.34%
PV	**2.43**	-6.35%
Biomass power	**2.87**	0.04%

Type/Region	Electricity Sold 2023 1-12	Electricity Sold Year-on-Year Change
Liaoning Province	**169.74**	13.45%
Coal-fired	**146.27**	8.98%
Wind Power	**21.10**	58.98%
Hydro-power	**0.17**	-47.71%
PV	**2.21**	22.15%
Inner Mongolia	**7.75**	0.41%
Wind Power	**7.75**	0.41%
Hebei Province	**124.00**	10.84%
Coal-fired	**105.13**	5.49%
Wind Power	**6.11**	-6.46%
PV	**12.76**	124.28%
Gansu Province	**131.55**	-10.27%
Coal-fired	**105.90**	-12.99%
Wind Power	**25.65**	3.02%
Ningxia	**0.21**	-8.20%
PV	**0.21**	-8.20%
Beijing	**82.12**	-0.78%
Coal-fired	**5.15**	-36.83%
Combined Cycle	**76.97**	3.16%
Tianjin	**58.71**	9.19%
Coal-fired	**49.30**	11.71%
Combined Cycle	**9.20**	-3.24%
PV	**0.22**	57.03%
Shanxi Province	**92.23**	7.43%
Coal-fired	**54.56**	9.83%
Combined Cycle	**20.53**	-0.73%
Wind Power	**6.97**	11.27%
PV	**10.18**	10.23%
Shandong Province	**804.38**	-2.80%
Coal-fired	**761.12**	-4.04%
Wind Power	**23.84**	16.12%
PV	**15.35**	52.32%
Biomass power	**4.07**	7.75%
Henan Province	**231.91**	1.06%
Coal-fired	**189.42**	-1.52%
Combined Cycle	**1.53**	13.85%
Wind Power	**34.76**	-2.25%
PV	**6.20**	2,524.07%

MANAGEMENT'S DISCUSSION AND ANALYSIS

Type/Region	Electricity Sold 2023 1-12	Electricity Sold Year-on-Year Change
Jiangsu Province	427.61	4.31%
Coal-fired	317.88	6.84%
Combined Cycle	54.53	-12.28%
Wind Power	47.22	0.29%
PV	7.97	154.02%
Shanghai	202.39	8.83%
Coal-fired	187.98	9.18%
Combined Cycle	13.96	4.01%
PV	0.45	22.93%
Chongqing City	144.72	0.42%
Coal-fired	113.32	2.36%
Combined Cycle	26.55	-8.70%
Wind Power	4.82	11.03%
PV	0.03	-
Zhejiang Province	339.19	5.62%
Coal-fired	305.57	4.10%
Combined Cycle	8.24	-17.38%
Wind Power	22.54	46.50%
PV	2.85	26.02%
Hubei province	161.02	-8.49%
Coal-fired	141.83	-13.21%
Wind Power	7.32	0.09%
Hydro-power	2.81	45.09%
PV	9.05	176.74%
Hunan Province	100.83	-3.26%
Coal-fired	87.29	-6.54%
Wind Power	8.21	14.68%
Hydro-power	2.52	-6.01%
PV	2.82	181.91%
Jiangxi Province	293.66	0.99%
Coal-fired	274.04	-0.19%
Wind Power	9.57	-2.72%
PV	10.05	57.12%
Anhui Province	78.82	10.39%
Coal-fired	58.58	1.51%
Wind Power	11.07	5.44%
Hydro-power	0.74	-9.90%
PV	8.43	255.39%

Type/Region	Electricity Sold 2023 1-12	Electricity Sold Year-on-Year Change
Fujian Province	171.08	16.48%
Coal-fired	169.15	15.49%
PV	1.92	375.41%
Guangdong Province	296.24	5.82%
Coal-fired	255.64	6.08%
Combined Cycle	38.96	0.86%
Wind Power	0.07	–
PV	1.57	361.88%
Guangxi	10.16	62.65%
Combined Cycle	3.24	5.53%
Wind Power	6.80	113.62%
PV	0.13	129,667.00%
Yunnan Province	149.40	89.99%
Coal-fired	141.73	90.96%
Wind Power	6.40	48.03%
Hydro-power	–	-100.00%
PV	1.27	–
Guizhou Province	9.70	21.22%
Wind Power	1.96	14.57%
PV	7.74	23.03%
Hainan Province	131.43	33.05%
Coal-fired	104.06	10.33%
Combined Cycle	23.37	2,213.01%
Wind Power	0.92	-11.18%
Hydro-power	0.74	-42.25%
PV	2.35	104.79%
Total	4,478.56	5.33%

MANAGEMENT'S DISCUSSION AND ANALYSIS

The main reason for the increase in the Company's electricity sales volume: In 2023, the growth of electricity consumption in the whole society led to the year-on-year increase in the Company's electricity generation. Influenced by the reduction of hydropower generation nationwide, sustained high temperature and cold waves in a wide range, the Company's thermal power generation increased year on year for playing a key role in supporting and ensuring an adequate electricity supply to cater for peak demands in summer and winter months. The Company accelerated the development of green and low-carbon, and the installed capacity and power generation of wind power and PV increased rapidly year on year.

For the year ended 31 December 2023, the accumulated power generation of Tuas Power, the Company's wholly owned subsidiary in Singapore, accounted for a market share of 20.4%, representing a decrease of 1.9 percentage points from the same period of last year.

In respect of tariff, the Company's domestic average tariff (inclusive of taxes) for the year ended 31 December 2023 was RMB508.74 per MWh, decreased by 0.23% from last year. For the operation in Singapore, the average tariff for the year ended 31 December 2023 was RMB1,371.73 per MWh, representing an increase by 45.31% from the same period of last year.

In respect of fuel costs, due to the decrease in fuel purchase prices, the Company's fuel cost per unit of power sold by domestic coal-fired power plants for the year ended 31 December 2023 decreased by 12.38% to RMB326.43 per MWh from the same period of last year.

Influenced by the forgoing factors, for the year ended 31 December 2023, the Company and its subsidiaries recorded a consolidated operating revenue of RMB254.397 billion, representing an increase of 3.11% from RMB246.725 billion of last year, and the operating costs and expenses of RMB234.201 billion, representing a decrease of 5.43% from RMB247.657 billion of last year, and the net profit before income tax was RMB12.477 billion, representing a decrease of loss of RMB23.291 billion from the net loss before income tax of RMB10.814 billion of last year.

2. Comparative analysis of operating results

2.1 Operating revenue and tax and levies on operations

Operating revenue mainly consists of revenue from electricity sold. For the year ended 31 December 2023, the consolidated operating revenue of the Company and its subsidiaries amounted to RMB254.397 billion, representing an increase of 3.11% from RMB246.725 billion for the same period of last year. The operating revenue from domestic operations increased by RMB10.722 billion over the same period of last year, mainly due to the increase in domestic electricity consumption over the same period of last year, including an increase of RMB10.230 billion due to the increase of electricity sold and a decrease of RMB0.468 billion due to the decrease of tariff. The operating revenue from domestic operations of the Company generated from the newly acquired entities and newly operated generating units was RMB9.066 billion, and the operating revenue from domestic operations of the Company generated from the existing generating units increased by RMB1.656 billion. The operating revenue from the operations in Singapore decreased by RMB1.383 billion over the same period of last year, representing a decrease of 4.86%. The operating revenue from the operations of Pakistan decreased by RMB1.667 billion, representing a decrease of 29.10% over the same period of last year. The decrease in operating revenue from oversea operations was mainly due to the decrease of the volume of electricity sold.

Taxes and levies mainly include property tax, land use tax, environmental protection tax and value-added tax surcharges. Among them, the value-added tax surcharge is the education and urban construction taxes and fees paid in accordance with the relevant tax laws and regulations, based on the paid-in value-added tax and in accordance with the prescribed proportion. For the year ended 31 December 2023, the tax and levies on operations of the Company and its subsidiaries were RMB1.635 billion, representing an increase of RMB0.193 billion from RMB1.442 billion for the same period of last year, mainly due to the increase of the value-added tax surcharge based on the increasing value-added tax paid by domestic operations as a result of the increase of revenue and the decrease of fuel cost.

2.2 Operating expenses

For the year ended 31 December 2023, the total operating expenses of the Company and its subsidiaries was RMB234.201 billion, representing a decrease of 5.43% from the same period of last year. The operating expenses in domestic operations decreased by RMB7.274 billion, or 3.36%, from the same period of last year, of which the newly acquired entities and the new generating units accounted for RMB7.783 billion; the costs attributable to the existing entities decreased by RMB15.057 billion, which was primarily attributable to the decrease in the fuel cost led by the sharp decrease in domestic coal price over the same period of last year.

The operating expenses from the operations in Singapore decreased by RMB3.892 billion, or 14.79%, from the same period of last year, mainly due to the decrease of operating cost of purchasing electricity. The operating expenses from the operations in Pakistan decreased by RMB2.290 billion, mainly due to the decrease in fuel cost caused by the decrease in electricity sales of Pakistan business.

2.2.1 Fuel costs

Fuel costs accounted for the majority of the operating expenses for the Company and its subsidiaries. For the year ended 31 December 2023, fuel costs decreased by 8.17% to RMB156.569 billion from RMB170.507 billion for the year ended 31 December 2022. The fuel costs from domestic operations decreased by RMB14.201 billion, which was mainly attributable by the sharp decrease in domestic coal price. The fuel costs of the newly acquired entities and new generating units were RMB4.108 billion and the fuel costs of the existing generating units decreased by RMB18.309 billion from same period of last year. The fuel cost per unit of power sold by the Company's domestic power plants decreased by 12.38% to RMB326.43/MWh in 2023 from RMB372.56/MWh in 2022. Fuel costs in Singapore increased by RMB0.264 billion from the same period of last year, mainly due to the combined impact of decrease of natural gas prices and the rise in the SGD/RMB exchange rate.

2.2.2 Maintenance expenses

For the year ended 31 December 2023, the total maintenance expenses of the Company and its subsidiaries amounted to RMB4.457 billion, which was approximately the same as the last year with RMB4.485 billion.

2.2.3 Depreciation

For the year ended 31 December 2023, depreciation expenses of the Company and its subsidiaries increased by RMB1.112 billion to RMB25.492 billion from RMB24.380 billion for the year ended 31 December 2022. The depreciation expenses of domestic operations increased by RMB1.143 billion compared to the same period of last year, of which the depreciation costs incurred by the newly acquired entities and new generating units was RMB1.688 billion, the depreciation expense of existing units decreased by RMB545 million. Depreciation expenses of Singapore business were basically the same year on year.

MANAGEMENT'S DISCUSSION AND ANALYSIS

2.2.4 Labor

Labor costs consist of salaries to employees and contributions payable for employees' housing funds, medical insurance, pension and unemployment insurance, as well as training costs. For the year ended 31 December 2023, the labor costs of the Company and its subsidiaries increased by RMB1.614 billion to RMB17.762 billion from RMB16.148 billion for the year ended 31 December 2022, which was mainly due to the increase in discretionary bonuses paid with the growth of corporate efficiency and the year-on-year increase in total wages, as well as the increase in the payment base of social security and provident fund, the related expenses thus increased.

2.2.5 Other operating expenses (including electricity power purchase costs and service fees paid to HIPDC)

Other operating expenses include environmental protection expenses, insurance premiums, office expenses, amortization, Tuas Power's electricity power purchase costs, impairment losses, government subsidies and net gains or losses on disposal of properties, plant and equipment. For the year ended 31 December 2023, other operating expenses of the Company and its subsidiaries was RMB29.920 billion, representing a decrease of RMB2.217 billion from RMB32.137 billion for the year ended 31 December 2022. Other operating expenses from the Company's domestic operations increased by RMB4.363 billion, mainly due to the increase in safety production expense in accordance with national regulations and the increase in operating expenses due to the increase in installed capacity over the same period of last year. Other operating expenses of the operations in Singapore decreased by RMB4.301 billion over the same period of last year, mainly due to the decrease of electricity procurement costs of the retail electricity business. Other operating expenses of the operations in Pakistan decreased by RMB2.279 billion over the same period of last year, mainly due to the decrease of fuel costs led by the decrease in electricity sales.

2.3 Financial expenses

For the year ended 31 December 2023, the interest expense of the Company and its subsidiaries was RMB9.375 billion, representing a decrease of RMB0.451 billion from RMB9.826 billion for the year ended 31 December 2022, which was mainly due to the decrease in interest expenses amounting to RMB1.024 billion. The interest expense from the Company's domestic operations decreased by RMB1.251 billion, mainly due to the decrease in the cost of interest-bearing debt funds over the same period of last year. The interest expense from the newly acquired entities and new generating units was RMB633 million and those incurred by the domestic existing entities decreased by RMB1.884 billion. The interest expense of Singapore operations decreased by RMB18 million compared to the same period of last year. Interest expense of Pakistan operations increased by RMB245 million over the same period of last year.

2.4 Investment income

2.4.1 Share of profits less losses of associates and joint ventures

For the year ended 31 December 2023, the share of profits less losses of associates and joint ventures of the Company and its subsidiaries in 2023 was RMB854 million, representing a decrease of RMB188 million from RMB1,042 million for the year ended 31 December 2022, mainly due to the decrease in net profit of associates and joint ventures such as Times Shipping Co. Ltd.

2.4.2 Other investment gain

Other investment gain of the Company and its subsidiaries in 2023 was RMB1.930 billion, an increase of RMB1.925 billion over the previous year, mainly due to that the Company completely disposed of its 49% interests in its associate Huaneng Sichuan Energy Development Co. Ltd. ("Sichuan Energy Development") to Huaneng Lancang River Hydropower Inc. in September 2023, resulting in a gain of RMB1.961 billion recorded in other investment gain.

2.5 Income tax expenses

For the year ended 31 December 2023, the Company and its subsidiaries recognized income tax expense of RMB3.708 billion, representing an increase of expense of RMB3.549 billion from RMB159 million for the year ended 31 December 2022. The income tax expenses from domestic operation increased by RMB3.075 billion, mainly due to the turning losses into profits of the Company's domestic business, as well as the reversal of deferred tax assets recognized for losses in previous years. The income tax expense for the operations in Singapore increased by RMB421 million, mainly due to the substantial profit growth of Singapore business over the same period of last year. The income tax expenses for the operations in Pakistan increased by RMB53 million over the same period of last year.

2.6 Net profit, net profit attributable to equity holders of the Company and non-controlling interests

For the year ended 31 December 2023, the Company and its subsidiaries achieved a net profit of RMB8.769 billion, representing an increase of profit of RMB19.742 billion, from a net loss of RMB10.973 billion for the year ended 31 December 2022.

The net profit attributable to equity holders of the Company was RMB8.357 billion, representing an increase of RMB16.384 billion over last year. For the influencing factors, such as decrease in unit fuel costs, increase in electricity sales of the Company's domestic business, as well as the substantial increase in profit realised from the Company's Singapore operation, the annual performance of the Company turned losses into profits. The net profit attributable to equity holders of the Company from the domestic operations was RMB4.537 billion, representing an increase of RMB14.344 billion over last year. The net profit attributable to equity holders of the Company from the operations in Singapore was RMB3.605 billion, representing an increase of RMB2.057 billion as compared to the same period last year, mainly due to the continuous strengthening of safety production management, maintaining safe and stable operation of units, dynamically adjusting market competition strategies, optimizing fuel supply structure and portfolio, and actively expanding the retail market of electricity, marginal contribution of electricity sales of Singapore business units increased as a result. The net profit attributable to equity holders of the Company from the operations in Pakistan was RMB215 million, representing a decrease of RMB18 million.

The Company's recorded profit from its non-controlling interests of RMB412 million for the year ended 31 December 2023, representing an increase of profit amounting to RMB3.358 billion as compared to the loss of RMB2.946 billion for the year ended 31 December 2022, mainly due to the increase in net profit of the Company's non-wholly owned subsidiaries.

MANAGEMENT'S DISCUSSION AND ANALYSIS

2.7 Comparison of financial position

2.7.1 Comparison of asset items

As of 31 December 2023, the total assets of the Company and its subsidiaries were RMB550.316 billion, increased by 7.44% from RMB512.222 billion as of 31 December 2022; total assets of the domestic operations increased by RMB40.356 billion to RMB508.144 billion, including a net increase of RMB32.805 billion in fixed assets, mainly due to the comprehensive impact of new capital infrastructure and technical renovation projects investment and provision of depreciation in the current year.

As of 31 December 2023, the total assets of the operations in Singapore were RMB28.782 billion, representing a decrease of RMB0.815 billion from the year end of 2022. Non-current assets increased by RMB0.419 billion to RMB24.553 billion compared with the year end of 2022. Current assets decreased by RMB1.234 billion to RMB4.229 billion compared with the year end of 2022. The total assets of the operations in Pakistan were RMB13.390 billion, representing a decrease of RMB1.447 billion compared with the year end of 2022. Non-current assets amounted to RMB7.359 billion, a decrease of RMB0.801 billion as compared with the end of last year. Current assets amounted to RMB6.031 billion, a decrease of RMB0.646 billion as compared with the end of last year.

2.7.2 Comparison of liability items

As at 31 December 2023, the total liabilities of the Company and its subsidiaries were RMB370.962 billion, representing a decrease of RMB5.944 billion from RMB376.906 billion as at 31 December 2022.

As at 31 December 2023, interest-bearing debts of the Company and its subsidiaries amounted to RMB294.630 billion. The interest-bearing debts consist of long-term loans (including those maturing within a year), long-term bonds (including those maturing within a year), short-term loans, short-term bonds and lease liabilities (including those maturing within a year).

As at 31 December 2023, the total liabilities of the operations in Singapore were RMB13.912 billion, representing a decrease of RMB3.294 billion from RMB17.206 billion as at 31 December 2022. As at 31 December 2023, the total liabilities of the operations in Pakistan were RMB9.774 billion, representing a decrease of RMB1.311 billion from RMB11.085 billion as of 31 December 2022.

2.7.3 Comparison of equity items

The total equity attributable to the equity holders of the Company increased by RMB23.099 billion as of 31 December 2023 as compared to 1 January 2023, mainly due to combined impact of the net increase in the scale of energy supply bonds (recorded as other equity instruments) of RMB17.000 billion, the net profit attributable to equity holders of the Company of RMB8.357 billion in the current year, a decrease of RMB2.374 billion arising from the declaration of interests for other equity instruments and an increase of RMB0.116 billion due to other reasons. Non-controlling interests increased by RMB20.940 billion as compared to 1 January 2023, mainly due to the issuance of equity-type REITs financing products to absorb RMB19.151 billion from non-controlling interests.

2.7.4 Major financial position ratios

	2023	2022
Current ratio	**0.55**	0.51
Quick ratio	**0.48**	0.43
Ratio of liability to equity	**2.67**	3.26
Multiples of interest earned	**2.22**	-0.08

Formula of the financial ratios:

$$\text{Current ratio} = \frac{\text{balance of current assets as of the year end}}{\text{balance of current liabilities as of the year end}}$$

$$\text{Quick ratio} = \frac{\text{(balance of current assets of the year end – net inventories as of the year end)}}{\text{balance of current liabilities as of the year end}}$$

$$\text{Ratio of liability to equity} = \frac{\text{balance of liabilities as of the year end}}{\text{balance of shareholders' equity (excluding non-controlling interests) as of the year end}}$$

$$\text{Multiples of interest earned} = \frac{\text{(profit before tax + interest expense)}}{\text{interest expense (including capitalized interest)}}$$

The current ratio and quick ratio as of 31 December 2023 increased, mainly due to the decrease of current liabilities compared to 1 January 2023. The decrease of current liabilities mainly due to the decline of short-term loans. The ratio of liabilities to equity as of 31 December 2023 decreased slightly, mainly due to the comprehensive impacts of the Company's operating gains, the issuance of the energy supply bonds (other equity instruments) for energy conservation and supply and the equity financing through the issuing of equity-type REITs financing products. The multiples of interest earned increased over last year, mainly due to the Company turned losses into profits as compared with last year.

MANAGEMENT'S DISCUSSION AND ANALYSIS

B. LIQUIDITY AND CASH RESOURCES

1. Liquidity

	2023 RMB billion	2022 RMB billion	Change %
Net cash generated in operating activities	**45.497**	32.520	39.90
Net cash used in investing activities	**-54.529**	-39.830	36.90
Net cash generated in financing activities	**8.720**	7.831	11.35
Currency exchange impact	**-0.054**	0.441	-112.24
Net increase in cash and cash equivalents	**-0.366**	0.962	-138.05
Cash and cash equivalents as at the beginning of the year	**16.517**	15.555	6.18
Cash and cash equivalents as at the end of the year	**16.151**	16.517	-2.22

For the year ended 31 December 2023, net cash generated in operating activities of the Company and its subsidiaries was RMB45.497 billion, representing an increase of 39.90% from last year, mainly due to the decrease in fuel procurement expenditure, the increase in electricity sales revenue, and decrease in renewable energy subsidies and VAT rebates received as compared to that of the same period of last year. The net cash generated in operating activities in Singapore was RMB5.757 billion. The net cash generated in operating activities in Pakistan was RMB2.957 billion. The net cash used in investing activities was RMB54.529 billion for the year ended 31 December 2023, representing an increase of 36.90% from last year, mainly due to the increase in infrastructure expenditure of new energy and other projects. The net cash generated in financing activities was RMB8.720 billion for the year ended 31 December 2023, representing a increase of 11.35% as compared with last year, mainly due to increase in net financing amount in the current period to support capital expenditure such as the Company's new energy development. As of 31 December 2023, the cash and cash equivalents of the Company and its subsidiaries denominated in RMB, Pakistan Rupee, Singapore dollar, U.S. dollar and other currencies were RMB13.569 billion, RMB1.667 billion, RMB0.842 billion, RMB34 million, and RMB39 million, respectively.

As of 31 December 2023, net current liabilities of the Company and its subsidiaries were approximately RMB73.255 billion. Based on the Company's proven financing record, readily available banking facilities and sound credibility, the Company believes it is able to duly repay outstanding debts, obtain long-term financing and secure funding necessary for its operations. The Company has also capitalized on its good credit record to make short-term loans at relatively lower interest rates, thus reducing its interest expenses.

2. Capital expenditure and fund resources

2.1 Capital expenditure on infrastructure construction and renovation projects

The actual capital expenditure of the Company and its subsidiaries in 2023 was RMB60.202 billion

Capital expenditures are sourced mainly from internal capital, cash flows from operating activities, and debt and equity financing. In the next few years, the Company will further accelerate development and construction of renewable energy infrastructure and promote structural adjustment, and therefore expects to have significant capital expenditures and renovation expenditures. The Company expects to finance the above capital expenditures through internal capital, cash flows from operating activities, and debt and equity financing.

The cash requirements, usage plans and cash resources for future basic construction and renovation of the Company are as following:

(Unit: RMB100 million)

Projects	Capital expenditure in 2023	Capital expenditure plan for 2024	Cash resources arrangements	Financing costs and note on use
Thermal power projects	51.99	61.65	Including internal capital and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Hydropower projects	0.12	0	Including internal capital and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Wind power projects	234.76	295.44	Including internal capital and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Coal mining projects	10.19	14.92	Including internal capital and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Photovoltaic power projects	255.45	353.81	Including internal capital and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Port	0	0	NA	NA
Technology renovation etc.	49.51	75.71	Including internal capital and bank loans	Within the floating range of benchmark lending interest rates of PBOC

2.2 Cash resources and anticipated financing costs

Good operating results and sound credit status provide the Company with strong financing capabilities. As of 31 December 2023, the unutilized banking facilities available to the Company and its subsidiaries amounted over RMB310.0 billion, which are granted by commercial banks such as Bank of China, China Construction Bank, Industrial and Commercial Bank of China and other commercial banks.

In 2023, the Company issued a total of 25 unsecured ultra-short-term bonds totalling RMB65.0 billion, with coupon rates ranging from 1.79% to 2.33%. The bonds are denominated in RMB and issued at par value.

In 2023, the Company and its subsidiaries did not issue any long-term bonds.

As of 31 December 2023, short-term loans of the Company and its subsidiaries were RMB57.233 billion (2022: RMB83.573 billion) with interest rates ranging from 1.06% to 3.55% per annum (2022: RMB1.24% to 18.01%).

As of 31 December 2023, short-term bonds payable by the Company and its subsidiaries were RMB6.110 billion (2022: RMB6.313 billion).

As of 31 December 2023, the Company and its subsidiaries' long-term loans (including long-term loans due within one year) totaled RMB183.424 billion (2022: RMB170.808 billion), including RMB loans of RMB172.014 billion (2022: RMB154.611 billion), USD loans of RMB9.758 billion equivalent (2022: RMB10.409 billion equivalent), EUR loans of RMB2 million equivalent (2022: RMB18 million equivalent), SGD loans of RMB1.554 billion equivalent (2022: RMB5.662 billion equivalent), JPY loans of RMB97 million equivalent (2022: RMB107 million equivalent). Among them, SGD loans are floating rate loans, and EUR loans and JPY loans are fixed interest rate loans. For the year ended 31 December 2023, the annual interest rate of long-term loans is 0.75% to 7.59% per annum (2022: 0.75% to 6.75%).

The Company and its subsidiaries will closely monitor any change in the exchange rate and interest rate markets and cautiously assess the currency rate and interest rate risks.

MANAGEMENT'S DISCUSSION AND ANALYSIS

Combined with the overall development trend of the current power generation industry and the growth of the Company, the Company will continue to strive to not only meet cash requirements of daily operations, constructions and acquisitions, but also establish an optimal capital structure to minimize the cost of capital and manage financial risks through effective financial management activities, thus maintaining sustainable and stable returns to the shareholders.

2.3 Other financing requirements

Pursuant to the Company's goal to create long-term, stable and growth reports for shareholders, the Company implements a positive, balanced and stable dividend policy. According to the profit distribution proposal of the board of directors of the Company for 2023 (to be approved by the general meeting of shareholders), it is expected that the Company will pay a dividend of RMB0.20 per ordinary share (inclusive of tax) and a total cash dividend of RMB3.140 billion.

2.4 Maturity profile of interest-bearing debts

(RMB100 million)

Maturity Profile	2024	2025	2026	2027	2028
Principal amount planned for repayment	973.34	425.55	355.57	138.50	170.25
Interest amount planned for repayment	78.58	57.92	46.33	36.98	32.65
Total	1,051.92	483.47	401.90	175.48	202.90

Note: The amount of principle to be paid in 2024 is relatively large because this includes expected repayment of short-term loans and short-term bonds.

C. LONG-TERM DEVELOPMENT STRATEGY AND PLANNING

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 environmental friendly, worldclass 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.

D. TREND ANALYSIS

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 point 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 uncertainly 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.

MANAGEMENT'S DISCUSSION AND ANALYSIS

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.

E. PERFORMANCE OF SIGNIFICANT INVESTMENTS AND THEIR PROSPECTS

As at 31 December 2023, the carrying amount of the Company's investments in associates and joint ventures amounted to RMB22.712 billion. Among them, the Company's investment in Shenzhen Energy is significant.

The Company acquired 25% equity interest in Shenzhen Energy Group for RMB2.39 billion on 22 April 2003. In 2011, Shenzhen Energy Group divided into a remainder company of the same name and a new company Shenzhen Energy Management Company ("SE Management"), and the Company holds 25% equity interests in each of the two successors. The Company acquired 200 million shares from Shenzhen Energy Corporation ("Shenzhen Energy"), a subsidiary of Shenzhen Energy Group in December 2007. Shenzhen Energy allotted shares with its capital surplus in 2011. In February 2013, Shenzhen Energy merged SE Management through the combination of directional seasoned offering and cash payment to shareholders of SE management, Shenzhen State-owned Assets Administration Commission and the Company. After the merger, the Company held 661 million shares of Shenzhen Energy, representing 25.02% of its equity interests. In 2023, Shenzhen Energy distributed cash dividend amounting to RMB1.40 (tax inclusive) of every 10 shares to its shareholders, and the Company held 1,190 million shares of Shenzhen Energy by 31 December 2023. These investments brought a net profit to the Company of RMB281 million for the year ended 31 December 2023 under IFRSs. This investment is expected to provide steady returns to the Company.

F. EMPLOYEE BENEFITS

As of 31 December 2023, the Company and its subsidiaries had a total of 57,038 employees within and outside the PRC. The Company and its subsidiaries provide employees with competitive remuneration and linked such remuneration to operating results to provide incentives for the employees. Currently, the Company and its subsidiaries do not have any stock or option based incentive plan.

The Company and its subsidiaries provide employees with training programs in management, technology, skills and other areas in accordance with the requirements of the Company's development and position responsibilities, taking into account the characteristics of individual employees, and endeavor to improve the overall quality of the employees.

G. GUARANTEE FOR LOANS AND RESTRICTED ASSETS

As at 31 December 2022, long-term loans of approximately RMB15 million were guaranteed by China Huaneng Group Co., Ltd. ("Huaneng Group") and were repaid in total as 31 December 2023.

As at 31 December 2022, the Company provided guarantees for long-term loans of approximately RMB3,109 million of the Company's wholly owned subsidiary Tuas Power which were repaid in total as at 31 December 2023. As at 31 December 2023, the Company provided guarantees for long-term loans of approximately RMB917 million of the Company's domestic subsidiaries (31 December 2022: RMB237 million).

As at 31 December 2023, long-term loans of approximately RMB97 million (31 December 2022: RMB107 million) were guaranteed by Enshi Finance Bureau of Hubei Province.

As at 31 December 2023, long-term loans of approximately RMB92 million (31 December 2022: approximately RMB106 million) were guaranteed by Tangyin County Modern Agricultural Investment Co., Ltd.

As at 31 December 2023, long-term loans of approximately RMB199 million (approximately US$28 million) (31 December 2022: RMB199 million (approximately US$29 million)) were guaranteed by Huaneng Shandong Power Generation Co., Ltd. ("Shandong Power").

As at 31 December 2023, long-term loans of approximately RMB6,277 million (31 December 2022: RMB6,766 million) were guaranteed by Shandong Power, China Export & Credit Insurance Corporation and Jining Chengtou Holding Group Co., Ltd. ("Jining Chengtou") at the liability ratios of 17.5%, 65.0% and 17.5% respectively (31 December 2022: Shandong Power, China Export & Credit Insurance Corporation and Jining Chengtou at the liability ratios of 17.5%, 65.0% and 17.5% respectively).

As at 31 December 2023, long-term loans of approximately RMB1,135 million (31 December 2022: RMB1,116 million) were guaranteed by Shandong Power and Jining Chengtou at the liability ratios of 50.0% and 50.0% respectively (31 December 2022: Shandong Power and Jining Chengtou at the liability ratios of 50.0% and 50.0% respectively).

As of 31 December 2023, the details of secured loans of the Company and its subsidiaries were as follows:

As at 31 December 2023, short-term loans of RMB423 million (31 December 2022: RMB361 million) represented the notes receivable that were discounted with recourse. As these notes receivable had not yet matured, the proceeds received were recorded as short-term loans.

As at 31 December 2023, short-term loans of RMB223 million (31 December 2022: RMB772 million) were secured by certain equipment with a net book value amounting to approximately RMB474 million (31 December 2022: RMB1,519 million).

As at 31 December 2023, long-term loans of RMB4,675 million (31 December 2022: RMB4,633 million) were secured by certain property, plant and equipment with a net book value amounting to approximately RMB6,543 million (31 December 2022: RMB6,984 million).

MANAGEMENT'S DISCUSSION AND ANALYSIS

As at 31 December 2023, long-term loans of approximately RMB4,218 million were secured by future revenue from the electricity or heat business (31 December 2022: RMB4,838 million). As at 31 December 2022, long-term loans of approximately RMB461 million were secured by equity interests of the Company and its subsidiaries and were repaid in total as at 31 December 2023. As at 31 December 2022, long-term loans of approximately RMB50 million were secured by carbon emission quota and were repaid in total as at 31 December 2023.

As of 31 December 2023, the restricted bank deposits of the Company and its subsidiaries were RMB699 million (31 December 2022: RMB658 million).

H. ACCOUNTING STANDARDS HAVING MATERIAL IMPACT ON THE COMPANY'S FINANCIAL STATEMENTS

For the accounting standards that have a material impact on the Company's financial statements, please refer to the Note 2 to the financial statements prepared in accordance with IFRSs.

I. RISK FACTORS

1. Risks relating to the electricity industry and market

(1) In 2024, due to the continuous rebound of the domestic economy, it is expected that the electricity consumption of the whole society will record a year-on-year increase of approximately 6%, the new energy will maintain rapid development, the installed capacity is expected to surpass coal-fired power for the first time, and the role of coal-fired power enterprises in ensuring guaranteed supply and supporting adjustment is more prominent. In extreme weather and demand peak, there may be the risk of power supply shortage in certain areas in individual periods.

(2) The spot market of electricity has been fully rolled out in many provinces and cities, the electricity price mechanism of coal-fired power capacity has been formally implemented, and the market competition has become more intense. Coal-fired power units with low reliability and high coal consumption for power generation are not competitive in the market, and the capacity electricity fees cannot be fully obtained, so there is a risk of income decline.

(3) The trading volume of electricity generated from new energy continued to increase, guaranteed purchase volume of electricity continued to decline and the electricity price of new energy participating in market-oriented transactions will further decline, so the electricity price of new energy transactions in spot market areas will decline even more, and there will be a risk of income decline.

The Company will be committed to strengthening its policy research effort, actively adapt to need of the development of the electricity market as guided by the carbon peak and carbon neutrality goal, accelerate the technological upgrading, transformation and development of coal-fired power units, continue to promote the standard operation of the market, adjust pricing strategies in a timely manner, and make every endeavor to prevent and control risks relating to operations.

2. Risks relating to fuel procurement market

(1) With the recovery of the national macro-economy, the electricity consumption of the whole society will continue to increase. In the peak power consumption period including summer peak, winter peak and extreme weather, there may be intermittent supply shortage in certain areas, thermal power will continue to be relied upon to ensure that energy demands are met, and coal supply is still under great pressure in certain areas.

(2) There is limited room for further growth of domestic coal output. Due to the tax policy on imported coal, the effect of using international market resources to stabilize domestic coal prices will be weakened, and the overall coal price is still relatively high and fluctuates frequently, and the operating pressure of the Company's coal-fired power business is still relatively high.

(3) The proportion of imported coal procurement in coastal areas was relatively large, and the coal supply was greatly affected by the international market, so there was double pressure to ensure supply and control prices.

The Company will closely monitor the changes of the coal market, implement the national policy requirements, give full play to the "cornerstone" role of long-term contracts, and grasp the international coal market situation, and optimise imported coals. The Company will continue to optimise the supply structure, improve the peak supply capacity of units, enhance the adaptability with the new power market. The Company tries to strengthen inventory management, leveraging role of coal storage in off-season or favorable price, and coal consumption in peak season or high price, taking multiple measures to control coal procurement costs.

3. Risks relating to carbon markets

In the second performance period, the quota distribution was greatly tightened, and the cost of carbon emission performance increased. In the third performance period, with the expansion of participants in the carbon market and the possible further tightening of quota distribution, the carbon transaction price will continue to be pushed up, and power generation enterprises will be at the risk of increasing the cost of carbon performance.

The Company will pay close attention to the changes of national carbon market policies, accelerate the upgrading and transformation of energy conservation and emission reduction, strengthen the development of the Chinese Certified Emission Reduction ("CCER") project, coordinate and optimise the carbon trading strategies, and strive to complete the carbon emission performance at a lower cost.

4. Environmental protection risk

Based on the current status and the needs of ecological civilization construction, the State is constantly improving and deepening environmental protection policies in key regions including but not limited to Beijing-Tianjin-Hebei, Yangtze River Economic Belt, Pearl River Delta, etc., which may lead to new and more stringent requirements with respect to issues such as water body protection and flue and dust treatment etc. and may increase the environmental protection expenditure of relevant grass-roots enterprises.

The Company strictly implements the national environmental protection policy. All of the coal-fired power plants of the Company completed ultralow emission transformation and achieved operation with ultralow emission, which afforded good adaptability to the fluctuations of internal and external factors such as weather conditions, fuel quality and electric heat load and passed the inspection procedure conducted by the local environmental protection authorities. Meanwhile, the Company actively follows up the concerns of environmental protection authorities, scientifically selects advanced and applicable technical solutions in a cautious manner, and makes positive efforts to upgrade its water-saving and wastewater treatment systems, build closed facilities for coal yards, and improve the recycling and utilisation of coal ash and slag in order to ensure that various environmental risks are addressed and effectively resolved in a timely manner.

5. Power construction risks

In terms of power construction, the Company may face risks such as extreme weather, lack of material and equipment supply, rise in labour cost, multiple "four certificates and one document" processing steps, a long period of time for obtaining land for construction, and difficulties in coordinating grid connection.

The Company will deal with risks and challenges in advance, proactively take various measures, strengthen the organization and coordination, mobilize the initiative of all parties of the construction, and overcome difficulties to ensure that the projects are carried out as scheduled and in an orderly manner.

MANAGEMENT'S DISCUSSION AND ANALYSIS

6. Capital market risks

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 the prudent monetary policy to be precise and powerful, comprehensively use a variety of monetary policy tools to maintain a reasonable and abundant liquidity, and keep the growth rate of money supply and social financing scale basically matching the nominal economic growth rate, so as to provide stronger support for the real economy. China will continue to increase support for key areas and weak links of the national economy such as green development and scientific and technological innovation.

In 2024, the Company will focus on the improvement of operating results, further broaden financing channels and guarantee the security of energy supply and the capital demand for green and low-carbon transformation. The Company will also pay close attention to the changes in domestic and overseas capital market, make good and full use of green financing policies to reduce interest rates fluctuation risks, make efforts to control financing costs, optimize debt maturity structure, prevent capital risks and realize cost reduction and efficiency improvement. Please refer to Note 3 to the financial statements prepared under the IFRS for further details on exposure to fluctuations in exchange rates and any related hedges of the Group.

CORPORATE GOVERNANCE REPORT

The Company has been consistently stressing the importance of corporate governance. The Company has established and improved a sound corporate governance structure consisting of the shareholders' general meeting, the Board, the Supervisory Committee, and the 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.

During the reporting period, the Company had complied with the relevant requirements contained in Appendix C1 to the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited (the "Hong Kong Listing Rules").

In 2023, in accordance with the requirements under the Environmental, Social and Governance Reporting Guidelines of the Hong Kong Stock Exchange, the Company has completed the preparation and disclosure of the Environmental, Social and Governance Report in due time, which will be published on the website of the Company (www.hpi.com.cn: Investor Relationship-ESG Report) and the website of Hong Kong Stock Exchange (www.hkexnews.hk) together with the annual report as scheduled. If you wish to request a printed copy of the "2023 Environmental, Social and Governance Report" of the Company, you can contact the Company by sending email to zqb@hpi.com.cn.

(A) CORPORATE GOVERNANCE PRACTICES

In recent years, the Company adopted the following measures to strengthen corporate governance and to enhance the Company's operation quality:

(I) Enhancing and improving 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.

After years of exploration and practice, 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, the Rules of Procedures for the Board of Directors, Rules of Procedures for the Supervisory Committee, Working Rules for the General Manager, working

CORPORATE GOVERNANCE REPORT

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 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, and revised basic management systems such as the Regulations on Decision-Making of Matters in Relation to the "Three Majors and One Large", the Rules on Information Disclosure Management, the Rules on Insider Information Management and the Rules on Related Party Transactions Management providing an important guarantee for further improving the system construction and continuously consolidate the foundation of the standard operation of the Company.

In 2023, the Company completed the election of and built a new session of the Board of Directors and the Supervisory Committee with excellent governance structure, consisting of members with extensive management experience, strong professional background, outstanding leadership and significant diversity, which has laid a solid foundation for the continuous improvement of the corporate governance level and the efficiency of the corporate governance.

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.

The Company attached great importance to its risk management and internal control, established and continuously improved the risk control and internal control system to ensure its effectiveness. The Company designed and completed the Internal Control Manual by comprehensively sorting out internal and external risks and various business processes, which comprehensively expounds the Company's principles and policies, clarifies the working procedures and post responsibilities of various positions of the Company, and regulates the standard procedures of various business processes of the Company, so as to realize the process-oriented systems. The Company evaluates the effectiveness of the internal control system annually and regularly revises and improves the internal control system to realize the dynamic maintenance of the internal control system. At the same time, the internal control management department, the internal audit department and the external auditor report the internal control work of the Company to the Audit Committee under the Board of Directors on a regular basis, ensuring the continuous and effective operation of the internal control system. The Company successfully passed the audit on internal control by the external auditor for 18 consecutive years.

The Company has completed the preparation and disclosure of ESG report with high quality for 8 consecutive years. The Company was awarded the "ESG Best Practice Case of Listed Companies in 2023" by China Association for Public Companies, included in the Almanac of the Chinese Listed Company (2022) and successfully included in the Central Enterprises ESG • Vanguard 100 Index by the SASAC.

The Company strictly complies with relevant regulatory requirements of the place in which the Company's shares are listed, proactively fulfills the disclosure obligations, and strives to ensure the truthfulness, accuracy and completeness of the information disclosure. During the reporting period, the Company completed 313 domestic and overseas announcement disclosure, remained zero error in information disclosure, and won the "A" grade rating granted by the Shanghai Stock Exchange. The Company's 2022 H-share annual report won the Traditional Annual Report Silver Award for Power Companies, the Traditional Annual Report Bronze Award for Energy and the Cover Design Silver Award for Energy of the ARC Annual Report Awards. The Company continued to strengthen the management of investor relations, responded to market concerns in a timely manner through various forms such as performance promotion conferences, investment forums and strategy meetings, collective roadshows of listed companies organized by regulatory authorities, E-interactive platform of Shanghai Stock Exchange and daily communication, and always maintained the concept of quick response, careful interpretation and frank communication to accurately convey the investment value of the Company. The Company won the "Best Investor Relations Management Listed Company" in the Crystal Ball Award for Listed Companies by the Securities Market Weekly in 2023.

In 2023, the Company won the awards of the "Best Listed Company" award and the "Annual Special Award: 2023 Listed Company Awards of Excellence" of the 13th China Securities Golden Bauhinia and was included in the "Best Practice Case of Corporate Governance in 2023" and the "Best Practice Case of the Board of Listed Companies in 2023" by China Association for Public Companies. The Company also won the "Special Contribution Award for Corporate Governance" of the 18th "Golden Prize of Round Table" of the Board of Directors of Listed Companies in China, as well as "Outstanding Promoter in Asset Securitization Business" and "Outstanding Promoter in Real Estate Held ABS Business" in the bond market of the Shanghai Stock Exchange for the year 2023. Such honors further consolidated the Company's popularity and reputation in the capital market.

The Board takes joint responsibility for the corporate governance of the Company. During the reporting period, the Board has included the following in its scope of powers and duties:

- Formulating and reviewing the Company's corporate governance policy and general rules, and making such amendments as it deems necessary to such policy and rules in order to maintain the effectiveness thereof;
- Reviewing and monitoring the training and sustained professional development of the Company's Directors and senior management;
- Reviewing and monitoring the Company's policy and general rules for complying with laws and regulations
- Formulating, reviewing and monitoring the codes of conduct and compliance handbook applicable to the Company's directors and employees; and
- Reviewing the Company's compliance with the Code and the disclosures made in the Corporate Governance Report.

(II) Enhancing and improving the information disclosure system

The Company has been stressing the importance of public information disclosure. The Company has established the Information Disclosure Committee comprised of the Board Secretary, the chief accountant and managers of various departments, which is responsible for reviewing the Company's regular reports. The Company has implemented the system of holding regular information disclosure meetings, chaired by the Board Secretary and attended by relevant business departments, at which the important matters related to the operation of the Company is reported and discussed, thereby warranting the Company's performance of the relevant information disclosure obligations in a timely manner. The Company attached great importance on the information disclosure, and has successively formulated and implemented the relevant information disclosure system. The current systems in place include the Rules on Information Disclosure Management, the Rules on Related Party Transactions Management, the Rules on Insider Information Management, the Rules on Investor Relations Management, the Rules on the Work of the Information Disclosure Committee

CORPORATE GOVERNANCE REPORT

and the Rules on the Annual Report Information Disclosure Significant Errors Accountability, etc. In 2023, the Company continued to pay attention to the external new regulatory rules and the progress of the integration of relevant rules, sorted out and evaluated relevant systems in a timely and comprehensive manner, and made amendments to the Rules on Information Disclosure Management and the Rules on Insider Information Management correspondingly, which provided effective basis and guidance for the Company to carry out daily business in compliance with requirements. The above measures and system ensure the regulated operation of the Company, strengthen the truthfulness, accuracy, completeness and the timely disclosure of information, and at the same time enhance the quality as well as transparency of information disclosure.

The Company made great efforts to maintain investor relations, responded to investor concerns in a timely manner, and actively maintained the market image. Relevant departments of the Company compiled answers (and subsequent updates) to questions regarding the hot topics of market concerns, the Company's production, operation and operating results in a timely manner, which shall become the basis of external communication of the Company after being approved by the Company's management and the authorized representatives of the Information Disclosure Committee. Also, the Company conducts specialized trainings for the staff of the Company who are responsible for information disclosure on an irregular basis in order to continuously enhance their expertise.

(III) Regulating financial management system

The credibility of a listed company, to a large extent, relates to the quality of the preparation of financial statements and a regulated operation of financial activities. In 2023, the Company continued to carry out various detailed work on the preparation of financial reports and standardized financial operation under the principle of acting with honesty and integrity and treating shareholders in a fair manner. The details include:

1. In order to strictly implement the accounting regulations, accounting standards and accounting systems, strengthen financial accounting and accounting supervision, and truthfully and fairly reflect the financial position, operating results and cash flow, the Company has formulated a set of complete accounting and financial reports preparation rules and regulations and made amendments and improvements on a regular basis to ensure the implementation of new accounting standards and relevant regulatory requirements in a timely and effective manner. The Company revised the Measures on Accounting, the Administrative Measures for Financial Write-off of Asset Losses, Regulations on Management of the Asset Impairment Test, Regulations on Management of Joint Examination of Final Accounts and the Provisions on Cost Management, etc. in the last two years. The Company's Board, Supervisory Committee and the Audit Committee have examined the Company's financial reports on a regular basis and the Company has fulfilled the requirements of making the Chairman, the President and the Chief Accountant responsible for the truthfulness, authenticity and completeness of the financial reports.

2. In terms of fund management, the Company has formulated a number of management measures including the Measures on Financial Management, the Measures on Capital Management, the Measures on the Management of Funds Receipts and Expenses, the Measures on Use and Management of Funds in Large Sums by the Company Headquarters, the Rules on the Management of Bills of Exchange, the Measures on Management of Fund Raising, the Measures on the Management of Financial Derivative Business, the Administrative Measures on Financing Guarantee and the Measure on the Management of Regulating Fund Transfers with Related Parties. The Company's Articles of Association also set out provisions relating to loans, guarantees and investment. In the annual reports of the Company over the previous years, the Company has engaged registered accountants to conduct an examination on the

use of funds by the controlling shareholder and other related parties and issue individual statements according to the requirements of the China Securities Regulatory Commission ("CSRC") and the Shanghai Stock Exchange ("SSE"), and there has not been any violation of rules relating to the use of funds. Moreover, the Company also conducted quarterly checking and clearing with related parties in relation to the operational fund transfers in order to ensure the safety of funds.

(IV) Risk Management and Internal Control

The Board of Directors attaches great importance to management of enterprise risk and internal control, thus the Company has established a system of risk monitoring and internal control, and has been keeping optimizing it to ensure its effectiveness, with a hope to create value for the Company, promote the realization of business development goals, and protect the interests of shareholders and the Company's assets.

1. Risk Management

To enhance its anti-risk ability and promote the sustainable development, the Company has applied the basic risk control procedures in every aspect of management and operation. Meanwhile, a comprehensive risk management system is established and the Company has cultivated a good risk management culture and carried out the risk control throughout the Company.

The Company headquarters and all management units have set up a risk management function with a clear definition of their respective responsibilities, and has established a smooth risk reporting and early warning mechanism, so that risk management is carried out throughout the daily work.

The Company conducts comprehensive risk management. The basic processes include initial risk information collection, risk identification and assessment, risk mitigation and supervision and improvement of risk management. The Company regularly prepares comprehensive risk management reports. 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 the examination and approval of the annual report on the overall risk management, the assessment of the risk management and the assessment of its effectiveness and the risk assessment report for significant decisions. The Audit Committee under the Board of Directors will identify and evaluate the fraud risk of senior management and the Board of Directors, and will form an independent fraud risk assessment report.

In 2023, the Strategy Committee of the Board of Directors held a meeting to consider and approve the Company's Overall Risk Management Report for the Year 2023. During the reporting period, the Company has fully complied with the Corporate Governance Code of Appendix C1 to the Hong Kong Listing Rules, including but not limited to the provisions in relation to risk management and internal control.

In 2023, with the joint efforts of the whole Company on risk identification, risk assessment, risk prevention and control and implementation of relevant measures, the risk management get more standardized in daily work with continuous improvement, and the Company has generally achieved positive results in the prevention and control over major risks and other risks, and minimized the impact of risk on business development.

2. Internal Control

The overall objective of the Company's internal control work is to promote the implementation of corporate strategies, in particular, to provide reasonable assurance for the compliance of the Company's operation and management with applicable laws and regulations, the security of the Company's assets and the authenticity and completeness of the Company's financial reports and relevant information, so as to promote the overall improvement in efficiency and effectiveness of operations.

CORPORATE GOVERNANCE REPORT

The Company fully sorted out the potential internal and external risks and various business processes and compiled the Internal Control Handbook. In the sixth edition of the Internal Control Handbook, the Company sets out detailed provisions for 25 business processes (including income, procurement of materials, fuel management, fund management) and 19 soft elements (including organizations structure, human resources management, anti-embezzlement, risk management) from five perspectives (control environment, risk evaluation, control process, information and communication, monitoring), which comprehensively expounds the Company's principles and policies, clarifies the working procedures and post responsibilities of various positions of the Company, and regulates the standard procedures of various business processes of the Company, so as to realize the process-oriented systems.. The Company has also compiled the Internal Control Assessment Handbook to help implement the three-level management system for internal control assessments as well as internal control assessment mode which integrates routine assessments with focused surveillance, with a view to standardising the procedures and assessment method of internal control assessments and regulating the procedures and standards for deficiency definition, striving to standardize and regulate its internal control assessments. Each year, the Company evaluates the effectiveness of the above systems and makes regular modifications and improvements to them as part of the dynamic maintenance of the internal control system.

For the risks identified, the Company provides for control measures in the Internal Control Handbook and defines key control points through which the responsibility of internal control is allocated to each working position, so that all the staff members of the Company become a part of the internal control construction force. The Company adopts a routine assessment system, where internal control assessors are designated to all the departments and subordinate entities to conduct monthly internal control assessments. The three-level of quality supervision has been established at the company, regional branches and the grassroots units, which are three levels of the Company, through the internal control management system to track the implementation of control in real time. For the internal control evaluators, the Company implements the system of "holding positions with certificates", and takes the training and passing of examinations as a necessary condition for reviewing the qualifications of internal control evaluators, effectively promoting the improvement of the professional quality of internal control personnel. During the year, the Company has successfully completed the 12-month routine internal control assessments, thereby effectively safeguarding and promoting the sustained and healthy development of the Company's businesses and ensuring the sound and stable operation of the internal control system. Taking into account the new requirements on and changes in its business and management as well as its advanced experience and common issues accumulated over the years, each year the Company organizes all-around multi-level internal control trainings to deliver a full-range propaganda on the philosophy and knowledge for internal control, which helps build up the internal control environment within the Company.

The internal control management department, the internal audit department and the external auditors made regular report separately on their internal control work to the Audit Committee of the Board of Directors, which ensures the sustained and effective operation of the internal control system. During the year, the Company comprehensively revised the Management Measures for Assessment of Internal Control Targets, implemented the system of "one-vote veto" in the whole process of internal control implementation, and intensified the assessment of repeated and inadequate rectification issues in internal control work, maximizing the guiding role of target assessment. The Company conducted internal control target assessment according to the revised measures, and fulfilled assessment results in a timely manner, which effectively guided units at all levels to pay attention to the quality of internal control work, and earnestly realized the in-depth goal of promoting management through internal control.

Based on a comprehensive assessment, the Board of Directors consider that, as of 31 December 2023, the Company has maintained effective internal control over financial reporting in all material respects in accordance with the Fundamental Regulatory

Guidelines on Enterprise Internal Control and its supporting guidance as well as other regulatory requirements on internal control, and the Company has not found any material defect in non-financial reporting about internal control.

(B) SECURITIES TRANSACTIONS BY DIRECTORS

As a A+H share listed company, the Company has strictly complied with the relevant binding provisions on securities transactions by directors imposed by the regulatory authorities of Hong Kong and China Mainland and we insist on the principle of complying with the strictest provision, which is, implementing the strictest provision among the places of listing. We have adopted a set of standards not less exacting than the Model Code for Securities Transactions by Directors of Listed Issuers set out in Appendix C3 to the Hong Kong Listing Rules as the model code for securities dealings by Directors of the Company, based on which, the Company implemented the Management Rules in respect of the Shares of the Company held by the Directors, Supervisors and Senior Management of Huaneng Power International, Inc., which required the transfer of the Company's shares be strictly in accordance with the stipulations under relevant regulations, prohibits those who are in possession of securities transaction insider information using insider information in securities trading and sets out detailed rules for those who are in possession of insider information. Having made specific enquiries with all Directors, supervisors and senior management of the Company, none of the Directors, supervisors or senior management of the Company held shares of the Company and the Company did not enter into any contract of significance subsisting at the balance sheet date or at any time during the year in which any of the Directors, supervisors or entities connected with them is or was materially interested, either directly or indirectly.

(C) SHAREHOLDERS' GENERAL MEETING

Over the years, apart from committing itself to the operation and expansion of its businesses in order to attain appropriate returns for shareholders, the Company also provides details on the Company's operations management and relevant information to shareholders in a timely and accurate manner through a variety of channels and methods, including: convening and holding general meetings in strict compliance with the Articles of Association, the Hong Kong Listing Rules and relevant regulations stipulated by the Securities and Futures Commission (the "SFC") in Hong Kong, and timely announcing relevant information to shareholders on an irregular basis according to the requirements of the Hong Kong Listing Rules.

During the year, the Company held a total of two general meetings, considering and approving 13 ordinary resolutions and 3 special resolutions, and a professional lawyer was invited to each general meeting as a witness to ensure all shareholders were treated equally and exercised their rights adequately. In 2023, the matters considered at the general meetings of the Company mainly included work reports of the Board and the Supervisory Committee of the Company for the year 2022, final financial report, and appointment of the auditor for the year, etc.

For details about the resolutions passed at general meetings during 2023, please refer to the announcements on such resolutions published by the Company on the website of the Hong Kong Stock Exchange.

CORPORATE GOVERNANCE REPORT

During the year of 2023, the Company placed particular emphasis on shareholders' relations, maintaining communication with shareholders through various channels to facilitate mutual understanding between the Company and its shareholders. In particular, the Company has established a division and assigned designated staff to receive visitors, making its contact numbers publicly available and to answer telephone enquiries at any time. In addition, the Company's website was set up to present the latest updates and past results of the Company as well as the management body of the Company, so as to facilitate shareholders' and investors' comprehensive understanding of the Company.

For details about the Company's communication with shareholders and investors for the year 2023, please refer to the "Investor Relations" section of this annual report.

In order to safeguard the legitimate interests of the Company and its shareholders, to specify the duties, responsibilities and permission right of the shareholders' general meetings, to ensure the proper, efficient and smooth operation of the shareholders' general meeting and to ensure the shareholders' general meeting exercises its functions and powers according to law, the Company formulated the Rules of Procedures for the General Meetings of Huaneng Power International, Inc., such Rules apply to the general meetings of the Company and shall be binding on the Company, all shareholders, authorised proxies of the shareholders, directors, supervisors and other relevant personnel present at the meeting.

- Proposals at the general meeting shall be usually put forward by the board of directors. Where more than one-half of the independent directors request the Board of Directors to convene an extraordinary general meeting, they shall be responsible for putting forward the proposals to be examined at the meeting. The shareholders individually or jointly holding more than 3% (including 3%) of the total shares with voting rights of the Company are entitled to put forward provisional proposals at the general meeting in accordance with the relevant procedure specified in the applicable laws. Where the Supervisory Committee proposes to convene an extraordinary general meeting, it shall be responsible for putting forward proposals. Where shareholders individually or jointly holding more than 10% (including 10%) of the Company's shares with voting rights propose to convene an extraordinary general meeting, the proposing shareholders shall be responsible for putting forward the proposals.

- Shareholders individually or jointly holding more than 3% (including 3%) of the Company's shares with voting rights are entitled to put forward proposals at the general meeting. The Board of Directors shall examine and approve such shareholders' proposals according to the following principles:

(1) Relevance. The Board of Directors shall conduct examination of a proposal. If the proposal is directly relevant to the Company and falls into the jurisdiction of general meeting as required by laws, regulations and the Articles of Association, it shall be submitted to the general meeting for discussion. Otherwise no such submission shall be submitted to general meeting.

(2) Procedures. The Board of Directors may decide on the procedural issues relating to the proposal. Where a proposal needs to be divided into different proposals or merged with other proposals to be voted on, consent of the person putting forward the original proposal is required. If the person putting forward the original proposal does not agree with any changes, the chairman of the general meeting may request the general meeting to decide on the procedural issues and conduct discussion according to the procedures decided by the general meeting.

- Where the shareholders individually or jointly holding more than 10% (including 10%) of the Company's shares with voting rights propose to convene an extraordinary general meeting or class shareholders' meeting, they may sign one or more written request(s) in identical form and contents to propose to the Board of Directors to convene an extraordinary general meeting or class shareholders' meeting and specify the topics for discussion at the meeting, and submit proposals complying with the requirements of The Rules of Procedure for the General Meeting of Huaneng Power International Co., Ltd. to the Board of Directors at the same time.

- The proposals put forward at the general meeting shall meet the following conditions:

(1) The content of the proposals shall be in compliance with requirements stipulated by laws, regulations and the Articles of Association and shall fall within the business scope of the Company and within the jurisdiction of general meeting;

(2) The theme of the proposal shall be clear and specific;

(3) The proposal shall be submitted to the Board of Directors in writing.

- For any questions concerning the general meetings, please contact:

Address: Capital Market Department
Huaneng Power International, Inc.
Huaneng Building,
6 Fuxingmennei Street,
Xicheng District, Beijing 100031,
The People's Republic of China
Contact: Ms. Xie Meixin or Mr. Hu Boxuan
Phone: 010-63226590 010-63226557
Email: xiemx@hpi.com.cn
huboxuan@hpi.com.cn

(D) BOARD OF DIRECTORS

According to the articles of association of the Company, the board of directors of the Company consists of fifteen members. In the tenth session of the board of directors, Mr. Wang Kui served as chairman and executive director (Mr. Zhao Keyu resigned from the position of chairman and executive director of the tenth session of the board of directors due to work reasons with effect from 29 August 2023); and the non-executive directors on tenth session of the board of directors included Mr. Huang Jian, Mr. Lu Fei, Mr. Teng Yu, Mr. Mi Dabin, Mr. Cheng Heng, Mr. Li Haifeng and Mr. Lin Chong. There was a total of five independent non-executive directors on the tenth session of the board, accounting for one-third of the board members, namely: Mr. Xu Mengzhou, Mr. Liu Jizhen, Mr. Xu Haifeng, Mr. Zhang Xianzhi, and Mr. Xia Qing.

In the eleventh session of the board of directors, Mr. Wang Kui serves as chairman and executive director; Mr. Wang Zhijie serves as vice chairman and executive director; Mr. Huang Lixin serves as executive director, general manager, and chief accountant. The non-executive directors on the eleventh session of the board of directors include Mr. Du Daming, Mr. Zhou Yi, Mr. Li Lailong, Mr. Cao Xin, Mr. Li Haifeng, Mr. Ding Xuchun, and Mr. Wang Jianfeng. There are a total of five independent non-executive directors, accounting for one-third of the board members, namely: Mr. Xia Qing, Mr. He Qiang, Ms. Zhang Liying, Mr. Zhang Shouwen and Ms. Dang Ying.

During the Reporting Period, the Board of Directors of the Company held ten meetings including regular meetings and ad hoc meetings.

Details of the attendance of directors at the meetings of the tenth session of board of directors are as follows:

Name	Number of meetings to be attended	Number of meetings attended in person	Number of meetings attended by proxy	Attendance rate (%)
Executive Directors				
Wang Kui	9	7	2	100%
Non-executive Directors				
Huang Jian	9	8	1	100%
Lu Fei	9	9	0	100%
Teng Yu	9	8	1	100%
Mi Dabin	9	6	3	100%
Li Haifeng	9	9	0	100%
Cheng Heng	9	8	1	100%
Lin Chong	9	7	2	100%
Independent Non-executive Directors				
Xu Mengzhou	9	9	0	100%
Liu Jizhen	9	7	2	100%
Xu Haifeng	9	9	0	100%
Zhang Xianzhi	9	7	2	100%
Xia Qing	9	9	0	100%
Resigned Director				
Zhao Keyu	4	4	0	100%

CORPORATE GOVERNANCE REPORT

Details of the attendance of directors at the meetings of the eleventh session of board of directors are as follows:

Name	Number of meetings to be attended	Number of meetings attended in person	Number of meetings attended by proxy	Attendance rate (%)
Executive Directors				
Wang Kui	1	1	0	100%
Wang Zhijie	1	1	0	100%
Huang Lixin	1	1	0	100%
Non-executive Directors				
Du Daming	1	0	1	100%
Zhou Yi	1	1	0	100%
Li Lailong	1	0	1	100%
Cao Xin	1	1	0	100%
Li Haifeng	1	1	0	100%
Ding Xuchun	1	0	1	100%
Wang Jianfeng	1	1	0	100%
Independent Non-executive Directors				
Xia Qing	1	1	0	100%
He Qiang	1	1	0	100%
Zhang Liying	1	1	0	100%
Zhang Shouwen	1	1	0	100%
Dang Ying	1	1	0	100%

As stated in previous Corporate Governance Reports of the Company, the Company's Articles of Association set out in detail the duties and operational procedures of the Board (please refer to the Company's Articles of Association for details). The Board of the Company holds regular meetings to hear and review the report on the Company's operating results. Material decisions on operation shall be discussed and approved by the Board. Ad hoc meetings may be held when necessary to make timely decision. Board meetings include regular meetings and ad hoc meetings. Regular meetings of the Board include: annual meeting, first quarterly meeting, half-yearly meeting and third quarterly meeting.

All arrangements for regular meetings have been notified to all directors at least 14 days in advance and the Company has ensured that each director thoroughly understood the agenda of the meeting and fully expressed his/her opinions, while all Independent Non-executive Directors expressed their independent directors' opinions on their respective duties and convened special independent directors' meetings to review relevant proposals in accordance with regulatory requirements under the "Administrative Measures for Independent Directors of Listed Companies" newly promulgated by the China Securities Regulatory Commission. All meeting details are thoroughly recorded and kept in the Company's board office.

In addition, the company has received a confirmation letter from each independent non-executive director regarding their independence in accordance with Rule 3.13 of the Hong Kong Listing Rules. The company still believes that each independent non-executive director is indeed an independent individual.

The Directors of the Company took the initiative to comply with the provisions of laws, administrative regulations and the Company's Articles of Association and actively fulfilled their duty of loyalty and diligence. Apart from regular and ad hoc meetings, the Directors of the Company obtained adequate information through meeting such as the Chairman special meetings in a timely manner in order to monitor the objectives and strategies of the management, the Company's financial position and operating results and the execution and implementation of provisions of material agreements. The Directors of the Company reviewed corporate briefings and other data on a regular basis to learn about the production and operation of the Company. The Independent Directors provided opinions and suggestions on operation and management for the Company via on-site survey. The specific committees under the Board proactively performed their duties and made suggestions and proposals for the development of the Company, which provides grounds for the Board to make correct decisions.

During the period when the Board was not in session, the Chairman discharged part of the duties of the Board of Directors, including (1) to examine and approve the establishment or cancellation of proposals to develop construction projects; (2) to examine and approve the proposals of the President in relation to the appointment, removal and transfer of managers of various departments of the Company and managers of external branches; (3) to examine and approve plans on the use of significant funds; (4) to examine and approve proposals on the establishment or cancellation of branch or branch organs; (5) to examine and approve other major issues.

The Board has summarized work for the past year and, in doing so, considered the opinions of the Supervisory Committee and the management. It believes that it has effectively fulfilled its duties and protected the interests of the Company and its shareholders.

Directors who attended the Company's 2022 Annual General Meeting held on 20 June 2023, were: Mr. Zhao Keyu, then executive Director of the tenth session of board of Directors, Mr. Li Haifeng, non-executive Director, and Mr. Xu Haifeng, independent non-Executive director. Other directors were unable to attend. Directors who attended the company's 2023 First Extraordinary General Meeting held on 5 December 2023, were: Mr. Wang Kui, executive Director of the eleventh session of board of Directors, Mr. Li Haifeng, non-executive Director, and Mr. Xia Qing, independent non-executive Director. Other directors were unable to attend.

CORPORATE GOVERNANCE REPORT

(E) CHAIRMAN AND PRESIDENT

The Company shall have a Chairman and a President who shall perform their duties respectively according to the Articles of Association.

1. On 16 June 2023, Mr. Huang Lixin was appointed as the President of the Company by the board of directors.

2. On 29 August 2023, Mr. Zhao Keyu resigned from the positions of Chairman and executive Director of the tenth session of board of directors of the Company due to work reasons. On the same day, Mr. Wang Kui was elected by the board of directors to serve as the Chairman and executive Director of the tenth session of board of directors.

3. On 5 December 2023, Mr. Wang Kui and Mr. Huang Lixin were elected as directors of the company for the eleventh session of board of Directors by the shareholders' meeting. On the same day, Mr. Wang Kui was elected by the board of directors as the Chairman and executive Director of the eleventh session of board of Directors.

The division of duties of the Board and the senior management is the same as what has been disclosed in previous Corporate Governance Reports.

(F) NON-EXECUTIVE DIRECTORS

According to the provisions of the Articles of Association, the term of office of members of the Board of the Company shall not exceed three years (inclusive of three years) and the members are eligible for re-election. However, the term of office of Independent Non-executive Directors shall not exceed six years (inclusive of six years) according to the relevant provisions of the CSRC.

The respective terms of office of the non-executive Directors are as follows:

With respect to the tenth session of board of directors:

Name of non-executive Directors	Term of office
Huang Jian	2008.8.27-2023.12.5
Wang Kui	2020.6.16-2023.12.5
Lu Fei	2020.6.16-2023.12.5
Teng Yu	2020.6.16-2023.12.5
Mi Dabin	2014.9.18-2023.12.5
Li Haifeng	2020.12.22-2023.12.5
Cheng Heng	2017.6.13-2023.12.5
Lin Chong	2017.6.13-2023.12.5

With respect to the eleventh session of board of directors:

Name of non-executive Directors	Term of office
Du Daming	2023.12.5-2026
Zhou Yi	2023.12.5-2026
Li Lailong	2023.12.5-2026
Cao Xin	2023.12.5-2026
Li Haifeng	2023.12.5-2026
Ding Xuchun	2023.12.5-2026
Wang Jianfeng	2023.12.5-2026

(G) DIRECTORS' REMUNERATION

According to the relevant laws of the PRC and the relevant provisions of the Articles of Association, the Board of the Company has established the Remuneration and Appraisal Committee. The committee operates normally under the Detailed Rules on the Work of the Remuneration and Appraisal Committee and in accordance with the terms of reference of the remuneration committee as set out in the Corporate Governance Code and is mainly responsible for studying the appraisal standards of the directors and senior management personnel of the Company, conducting appraisals and making proposals; responsible for studying and examining the remuneration policies and proposals of the directors and senior management personnel of the Company. The Remuneration and Appraisal Committee adopted the mode (ii) as set out under the rule E.1.2(c) of the Corporate Governance Code, which is to make recommendations to the Board on the remuneration packages of individual executive Directors and senior management, including benefits in kind, pension rights and compensation payments (including any compensation payable for loss or termination of their office or appointment).The total payroll, after examination by the Remuneration and Appraisal Committee, will then be submitted to the Board of Directors. The executive Directors have entered into the director's service contracts in compliance with the requirements of the Hong Kong Stock Exchange.

Members of the tenth session of the Remuneration and Appraisal Committee comprised of six directors, including Mr. Xu Mengzhou, Mr. Cheng Heng, Mr. Li Haifeng, Mr. Liu Jizhen, Mr. Zhang Xianzhi and Mr. Xu Haifeng, of whom Mr. Xu Mengzhou, Mr. Liu Jizhen, Mr. Zhang Xianzhi and Mr. Xu Haifeng are independent non-executive Directors. Mr. Xu Mengzhou acted as the chairman of the tenth session of the committee.

Members of the eleventh session of the Remuneration and Appraisal Committee comprised of seven directors, including Mr. Zhang Shouwen, Mr. Wang Zhijie, Mr. Li Haifeng, Mr. Ding Xuchun, Mr. He Qiang, Ms. Zhang Liying, and Ms. Dang Ying, of whom Mr. Zhang Shouwen, Mr. He Qiang, Ms. Zhang Liying, and Ms. Dang Ying are independent non-executive Directors. Mr. Zhang Shouwen is the chairman of the eleventh session of the committee.

The Remuneration and Appraisal Committee operates in accordance with the Company's Detailed Rules on the Work of the Remuneration and Appraisal Committee. The committee's first meeting in 2023 was held on 20 March 2023, at which a report on the total payroll budget of the Company was heard and the arrangements regarding the total payroll for the year 2023 were approved. In the new fiscal year, the Remuneration and Appraisal Committee will conduct its work in accordance with the above-mentioned working rules as appropriate.

CORPORATE GOVERNANCE REPORT

During the Reporting Period, the attendance at the meeting of the Remuneration and Appraisal Committee of the Board was as follows:

Name of meeting	Date of meeting	Members who attended the meeting in person	Members who attended the meeting by proxy
2023 First Meeting of the Remuneration and Appraisal Committee of the Tenth Session of the Board of Directors	20 March 2023	Xu Mengzhou, Cheng Heng, Li Haifeng, Liu Jizhen, Zhang Xianzhi, Xu Haifeng	/

(H) NOMINATION OF DIRECTORS

According to the relevant laws of the PRC and the relevant provisions of the Articles of Association, the Board of the Company has established the Nomination Committee. The Nomination Committee operates under the Detailed Rules on the Work of the Nomination Committee and the terms of reference for nomination committees as set out in the Corporate Governance Code and is mainly responsible for studying the selection standards and procedures for candidates for directors and senior management personnel of the Company according to the directors' qualifications under the Companies Law and Securities Law and the needs of the operational management of the Company, and making proposals thereon to the Board; searching for qualified candidates for directors and suitable persons for senior management personnel on a wide basis; and examining the candidates for directors and suitable persons for senior management personnel and making proposals thereon. In order to achieve sustainable and balanced development, the Company has formulated the Board Member Diversity Policy. According to the relevant regulations, when determining the composition of the Board, the Company will consider the diversity of board members from multiple perspectives, including but not limited to gender, age, culture and educational background, professional experience, skills, knowledge and service tenure. The nomination of Directors by the Board shall be based on competence only, taking into account the diversity requirements of Board members. Currently, the composition of the Board members of the Company has taken into account the operation and management of the Company and relevant regulatory requirements. The nomination of the candidates of directors of the Company is mainly made by the shareholders. The nominations, after examination of the relevant qualification by the Nomination Committee, will be submitted to the Board of Directors. The President of the Company is appointed by the Board and the candidates for the Vice President and other management are nominated by the President. Such nominations, after examination of the relevant qualification by the Nomination Committee, will be submitted to the Board of Directors for approval.

The Nomination Committee under the tenth session of the board of Directors comprises of 7 members: Mr. Liu Jizhen, Mr. Zhao Keyu (resigned on 29 August 2023), Mr. Wang Kui, Mr. Mi Dabin, Mr. Lin Chong, Mr. Xu Mengzhou, Mr. Zhang Xianzhi and Mr. Xia Qing, of whom Mr. Liu Jizhen, Mr. Xu Mengzhou, Mr. Zhang Xianzhi and Mr. Xia Qing were independent non-executive Directors. Mr. Liu Jizhen acted as the chairman of the committee under the tenth session of the board of Directors. Mr. Zhao Keyu was replaced by Mr. Wang Kui as a member of the Committee after the departure of Mr. Zhao Keyu.

The Nomination Committee under the eleventh session of the board of Directors comprises of 7 members: Mr. Xia Qing, Mr. Huang Lixin, Mr. Cao Xin, Mr. Wang Jianfeng, Mr. He Qiang, Mr. Zhang Shouwen and Ms. Dang Ying, of which Mr. Xia Qing, Mr. He Qiang, Mr. Zhang Shouwen and Ms. Dang Ying are independent non-executive Directors. Mr. Xia Qing is the chairman of the committee under the eleventh session of the board of Directors.

During 2023, the Company completed the election and appointment of the eleventh session of board of Directors of the Company. In connection with the candidates for directorships, the Company and the committee adopted the following nomination procedures and selection and recommendation criteria:

In identifying suitable candidates for Directors, the Nomination Committee has considered the benefits of diversity of the Board and the merits of the candidates against objective criteria. The factors considered by the Nomination Committee in assessing the suitability of a proposed candidate include: (i) reputation for integrity; (ii) accomplishments, professional knowledge and industry experience; (iii) commitments to their respective roles and functions; (iv) a range of diversity perspectives, including but not limited to gender, age, educational background, skills, knowledge and length of service; (v) skills, experience and board refreshment required for the operations of the Group. Apart from aforesaid factors, the Nomination Committee has also assessed the past performance of the candidates to be re-elected as Directors and the independence of the candidates to be re-elected or appointed as Independent non-executive Directors after having considered, among other things, the requirements as set out in Rule 3.13 of the Hong Kong Listing Rules.

Following the selection and recommendation criteria as set out above, the Company smoothly completed the refreshment of the Board and the Supervisory Committee and established corporate governance bodies with balanced composition, diversity, and seasoned members with profound expertise and excellent leadership skills, which will enhance the foundation for the advancement of corporate governance level and efficiency of the Company.

CORPORATE GOVERNANCE REPORT

The table below sets out Directors' attendance at the meetings of Nomination Committee under the tenth session of the Board held during the reporting period

Name of meeting	Date of meeting	Members who attended the meeting in person	Members who attended the meeting by proxy
The first meeting of the Nomination Committee of the tenth session of the Nomination Committee in 2023	15 June 2023	Liu Jizhen, Zhao Keyu, Mi Dabin, Lin Chong, Xu Mengzhou, Zhang Xianzhi, Xia Qing	/
The second meeting of the Nomination Committee of the tenth session of the Nomination Committee in 2023	28 August 2023	Liu Jizhen, Zhao Keyu, Mi Dabin, Lin Chong, Xu Mengzhou, Zhang Xianzhi, Xia Qing	/
The third meeting of the Nomination Committee of the tenth session of the Nomination Committee in 2023	7 November 2023	Liu Jizhen, Wang Kui, Mi Dabin, Lin Chong, Xu Mengzhou, Zhang Xianzhi, Xia Qing	/

(I) AUDITORS' REMUNERATION

As approved at the 2022 first extraordinary general meeting, Ernst & Young Hua Ming LLP was appointed as the Company's domestic auditor for 2023, and Ernst & Young was appointed as the Hong Kong auditor of the Company for 2023. The Company has not change its auditors for the past three years. For the 12 months ended 31 December 2023, the audit fee, audit-related fee, tax compliance service fee and other fees amounted to RMB33.09 million, RMB1.76 million, RMB0.85 million and RMB0.87 million, respectively.

(J) AUDIT COMMITTEE

According to the requirements of the regulatory authorities of the jurisdictions where the Company is listed and the relevant provisions of the Articles of Association, the Board of Directors of the Company has established the Audit Committee which operates normally under the Detailed Rules on the Work of the Audit Committee and in accordance with the terms of references for audit committees as set out in the Corporate Governance Code and is mainly responsible for assisting the Board of Directors in supervising: (1) the authenticity of the financial statements of the Company; (2) the compliance by the Company with laws and regulatory requirements; (3) the qualification and independence of the independent auditors of the Company; (4) the performance of the independent auditors and the internal audit department of the Company; and (5) the control and management of the related transactions of the Company.

The Audit Committee under the Board of the Company holds four regular meetings per annum and has at least two separate meetings with the external auditors of the Company to hear reports on audit plans, work arrangements, audit results, etc.

The Board formulates the Management Measures on Hotlines and Mailboxes for Informants, pursuant to which the Audit Committee is responsible for the management of the informants' hotlines and mailboxes.

Members of the Audit Committee under the tenth session of the Board comprises of five independent non-executive Directors, namely Mr. Zhang Xianzhi, Mr. Xu Mengzhou, Mr. Liu Jizhen, Mr. Xu Haifeng and Mr. Xia Qing respectively. Mr. Zhang Xianzhi acted as the chairman of the committee under the tenth session of the Board.

Members of the Audit Committee under the eleventh session of the Board comprises of five independent non-executive Directors, namely Mr. Xia Qing, Mr. He Qiang, Ms. Zhang Liying, Mr. Zhang Shouwen and Ms. Dang Ying. Ms. Dang Ying is the chairman of the committee under the eleventh session of the Board.

During the Reporting Period, the Audit Committee held seven meetings. As per Audit Committee's duties and in order to meet its responsibilities in its review of the quarterly (if relevant), half-yearly and annual results, its review of the risk management and internal control systems, the effectiveness of the Company's internal audit function, and its other duties under the Corporate Governance Code, the Audit Committee interviewed with the Company's legal advisors, external auditors, management and the relevant departments separately and exchanged ideas and communicated with them. With the understandings on the applicable laws and regulations of those jurisdictions in which the shares of the Company are listed, anti-fraud position in the Company, recruitment of staff, implementation and execution of internal control mechanism, audit work carried out by external auditors, and the preparation of the financial statement, the Audit Committee has rendered their views and opinions and made certain proposals.

During the Reporting Period, the attendance of meetings of the Audit Committee was as follows:

Name of meeting	Date of meeting	Members who attended the meeting in person	Members who attended The meeting by proxy
First meeting of the Audit Committee under the tenth session of the Board in 2023	24 February 2023	Zhang Xianzhi, Xu Mengzhou, Liu Jizhen, Xu Haifeng, Xia Qing	/
Second meeting of the Audit Committee under the tenth session of the Board in 2023	20 March 2023	Zhang Xianzhi, Xu Mengzhou, Liu Jizhen, Xu Haifeng, Xia Qing	/
Third meeting of the Audit Committee under the tenth session of the Board in 2023	24 April 2023	Zhang Xianzhi, Xu Mengzhou, Liu Jizhen, Xu Haifeng, Xia Qing	/
Fourth meeting of the Audit Committee under the tenth session of the Board in 2023	24 July 2023	Xu Mengzhou, Xu Haifeng, Xia Qing	Liu Jizhen, Zhang Xianzhi
Fifth meeting of the Audit Committee under the tenth session of the Board in 2023	28 August 2023	Zhang Xianzhi, Xu Mengzhou, Liu Jizhen, Xu Haifeng, Xia Qing	/
Sixth meeting of the Audit Committee under the tenth session of the Board in 2023	9 October 2023	Zhang Xianzhi, Xu Mengzhou, Liu Jizhen, Xu Haifeng, Xia Qing	/
Seventh meeting of the Audit Committee under the tenth session of the Board in 2023	24 October 2023	Zhang Xianzhi, Xu Mengzhou, Liu Jizhen, Xu Haifeng, Xia Qing	/

CORPORATE GOVERNANCE REPORT

(K) RESPONSIBILITY ASSUMED BY THE DIRECTORS IN RELATION TO THE FINANCIAL STATEMENTS

The Directors of the Company confirm that they shall assume the relevant responsibilities in relation to the preparation of the financial statements of the Company, ensure that the preparation of the financial statements of the Company complies with the relevant regulations and applicable accounting standards and that the financial statements of the Company will be published in a timely manner.

The reporting responsibility statements made by the auditors of the Company in relation to the financial statements of the Company are set out in auditor's report on pages 125 to 131.

(L) SENIOR MANAGEMENT'S INTEREST IN SHARES

None of the senior management of the Company holds any shares of the Company.

(M) STRATEGY COMMITTEE

According to the requirements of regulatory authorities of the jurisdictions where the Company is listed and the requirements of the Company's Articles of Association, the Board of the Company set up the Strategy Committee. The Strategy Committee operates normally under the Detailed Rules on the Work of the Strategy Committee and mainly takes the following responsibilities: (1) to study and make suggestions on the Company's long-term development strategies and plans; (2) to study and make suggestions on material investment and financing proposals which require the approval of the Board of Directors; (3) to study and make suggestions on material production and operational decision-making projects which require the approval of the Board of Directors; (4) to study and make suggestions on other material matters that will impact the Company's development; (5) to monitor the implementation of the above matters; (6) to be responsible for the Company's overall risk management and improve the Company's overall anti-risk ability; and (7) other matters required by the Board.

In 2023, members of the Strategy Committee under the tenth session of the board of Directors comprises of six directors, namely, Mr. Zhao Keyu (resigned on 29 August 2023), Mr. Wang Kui, Mr. Huang Jian, Mr. Lu Fei, Mr. Liu Jizhen, Mr. Xu Haifeng, of whom Mr. Liu Jizhen and Mr. Xu Haifeng are independent non-executive Directors. Mr. Zhao Keyu acted as the chairman of the Strategy Committee under the tenth session of the board of Directors. Mr. Zhao Keyu was succeeded by Mr. Wang Kui as the chairman after the departure of Mr. Zhao Keyu.

In 2023, members of the Strategy Committee under the eleventh session of the board of Directors comprises of seven directors, namely, Mr. Wang Kui, Mr. Wang Zhijie, Mr. Huang Lixin, Mr. Du Daming, Mr. Li Lailong, Mr. Xia Qing and Ms. Zhang Liying, of whom Mr. Xia Qing and Ms. Zhang Liying are independent non-executive Directors. Mr. Wang Kui is the chairman of the Strategy Committee under the eleventh session of the board of Directors.

In 2023, the Strategy Committee of the Company held one meeting to consider and approve the *2023 Annual Comprehensive Risk Management Report*. All members of the committee studied the report prudently and scientifically, and actively expressed their opinions and suggestions to improve the report, which played an important role in improving the quality and efficiency of decision-making.

During the Reporting Period, Directors' attendance at the meeting of the Strategy Committee was as follows:

Name of meeting	Date of meeting	Members who attended the meeting in person	Members who attended The meeting by proxy
First Meeting of the Strategy Committee under the tenth session of the board of Directors in 2023	10 August 2023	Zhao Keyu, Wang Kui, Huang Jian, Lu Fei, Liu Jizhen, Xu Haifeng	/

(N) TRAININGS FOR DIRECTORS AND SENIOR MANAGEMENT

In 2023, 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 training held by regulatory bodies and industry associations, and kept abreast of the updates of regulations and relevant policies in listed places. Throughout the year, the Directors, Supervisors and Senior Management of the Company attended the important meetings such as annual and interim supervisory meeting and bond and asset securitization business supervision conference of CSRC Beijing Bureau, training conference on corporate governance of China Association for Public Companies, to continuously and thoroughly study the new regulatory developments such as new requirements on independent directors and the operation of listed companies. All Directors, Supervisors and Senior Management of the Company consciously abide by the laws, regulations and Articles of Association of the Company, and take the lead in "knowing the fear and keeping the bottom line" to provide a guarantee for the continuous improvement of corporate governance.

The Company organizes communication activities between the Company's legal advisor and the Audit Committee to introduce the report to all members of the Audit Committee every six months on update of the regulatory regulations of the listed places, the application of the relevant systems of the Company and the Company's compliance with the regulations of the listed places.

CORPORATE GOVERNANCE REPORT

According to the records provided by the Directors and Supervisors, we set forth below a summary of the trainings received by the Company's Directors and Supervisors during the period from 1 January 2023 to 31 December 2023:

Members of the eleventh session of the Board/Supervisory Committee	Type of continuing professional development plan
Wang Kui	A、B
Wang Zhijie	A、B
Huang Lixin	B
Du Daming	B
Zhou Yi	B
Li Lailong	B
Cao Xin	A、B
Li Haifeng	A、B
Ding Xuchun	B
Wang Jianfeng	B
Xia Qing	A、B
He Qiang	A、B
Zhang Liying	A、B
Zhang Shouwen	A、B
Dang Ying	A、B
Cao Shiguang	B
Kou Yaozhou	B
Xia Aidong	A、B
Song Taiji	B
Zhu Tong	A、B
Wang Yu	B

Members of the tenth session of the Board/Supervisory Committee	Type of continuing professional development plan
Zhao Keyu	A、B
Huang Jian	A、B
Lu Fei	A、B
Teng Yu	A、B
Mi Dabin	A、B
Cheng Heng	A、B
Lin Chong	A、B
Xu Mengzhou	A、B
Liu Jizhen	A、B
Xu Haifeng	A、B
Zhang Xianzhi	A、B
Li Shuqing	A、B
Mu Xuan	A、B
Gu Jianguo	A、B
Xu Jianping	A、B

Notes:

A: Attending briefings and/or seminars.

B: Reading seminar materials and updates on the latest developments of the Hong Kong listing rules and other applicable regulatory requirements.

All the Directors and Supervisors must submit their training records to the Company on a quarterly basis. The Company Secretary will keep the records for regular inspections.

(O) TO CONVENE EXTRAORDINARY BOARD MEETINGS

An extraordinary Board meeting may be held at the request of any shareholders representing one tenth or more of the voting rights of the Company. The Chairman shall, within ten days upon receipt of such request, convene and chair such meeting.

(P) TO MAKE ENQUIRIES TO THE BOARD

The shareholders shall have access to the relevant information of the Company in accordance with the provisions of the Articles of Association, including the Articles of Association of the Company, the share capital, the minutes of shareholders' meetings and the resolutions of Board meetings and meetings of the Supervisory Committee.

(Q) INSURANCE FOR DIRECTORS AND PERMITTED INDEMNITY PROVISIONS

The Company has renewed its Directors' Liability Insurance policy of RMB100 million in 2023 to minimise their risks arising from the performance of their duties. The directors of the Company are entitled to be indemnified for all the costs, charges, losses, damages and expenses which he/she may incur in or sustain by the execution of his/her duties or by the exercise of his/her powers as a director of the Company or otherwise in relation thereto subject to the applicable laws and under the coverage of directors liability insurance taken out by the Company for the directors. These provisions are valid during the year ended 31 January 2024 and remain to be valid as at the date of this report.

CORPORATE GOVERNANCE REPORT

(R) COMPANY SECRETARY

Mr. Huang Chaoquan has been acting as the Company Secretary of the Company under the Hong Kong Listing Rules since 22 May 2017, whose resume is set out in the section headed "Profiles of Senior Management". During the Reporting Period, Mr. Huang Chaoquan has complied with relevant professional training requirements under Rule 3.29 of the Hong Kong Listing Rules.

(S) DIVERSITY

The Company's eleventh board of directors already has two female directors. The Company believes that it has achieved board diversity and will continue to abide by the Company's Board Member Diversity Policy. In determining the composition of the board of directors, the diversity of board members will be considered from multiple aspects including but not limited to gender, age, cultural and educational background, professional experience, skills, knowledge and service tenure.

The ratio of male to female employees of the company is close to 4:1.

The Company adheres to the principles of legal employment and equal opportunity. All-rounded diathesis shall be considered in recruitment and candidates of diverse genders, nationalities, ethnics, religious beliefs and cultural backgrounds shall be provided with equal opportunities and labor protection. The Company shall uphold the principal of equal pay for equal work with no discrimination against either sex and eradicates forced labor and employment discrimination, and make sure that the equal employment policy run through the recruitment process for every employee.

No significant difficulties have been identified so far that impairs gender diversity.

(T) MAJOR CHANGES IN THE ARTICLES OF ASSOCIATION

No major changes were made to the articles of association of the Company during the Reporting Period.

(U) COMPLIANCE WITH RELEVANT LAWS AND REGULATIONS

To the best of the knowledge of the Board and Management, the Group has complied with relevant laws and regulations on major issues that have a significant impact on the Group's business and operations. During the year, the Group did not violate or fail to comply with relevant applicable laws and regulations.

(V) SHAREHOLDERS' COMMUNICATION POLICY

During the Reporting Period, the Board has reviewed the implementation and effectiveness of the Shareholders' communication policy and considers the Company's communication policy effective, as detailed in the section on "Shareholders' General Meetings" of the Corporate Governance Report and in "Investor Relations" of this report.

(W) DESCRIPTION OF THE COMPANY'S SIGNIFICANT RELATIONSHIPS WITH ITS EMPLOYEES, CUSTOMERS AND SUPPLIERS

The Company considers its employees to be a valuable asset. The Company focuses on the career development of employees, optimizes talent allocation and development environment, provides multiple career development channels, continuously optimizes the selection process and assessment mechanism for technical skills positions, provides a platform for employees to unleash the talents. At the same time, the Company provides the employees with continuous training and development opportunities to achieve their career development. In addition, the Company believes that maintaining good relationships with its business partners and the companies that operate banking business is essential to achieving the Company's long-term objectives. During the Reporting Period, there were no significant disputes between the Company and its business partners and companies that operate banking business.

SOCIAL RESPONSIBILITY REPORT

The Board of Directors of the Company and all the directors thereof guarantee that this report does not contain any false statement, misleading representation or material omission, and jointly and severally accept responsibilities as to the truthfulness, accuracy and completeness of the content of this report.

This report systematically summarizes the works of Huaneng Power International, Inc. (the "Company") in 2023 in fulfilling its social responsibilities, with a view to giving a true presentation of the Company's concrete achievement in promoting comprehensive, healthy and sustainable development in 2023.

This report has been prepared in accordance with the "Guidelines on Preparation of Corporate Report on Performance of Social Responsibilities" issued by the Shanghai Stock Exchange, and with reference to the "G4 Sustainable Development Reporting Guidelines" issued by Global Reporting Initiative (the "GRI") and the actual performance of the Company.

I. CORPORATE OVERVIEW AND CORPORATE GOVERNANCE

1. Corporate Overview

Incorporated on 30 June 1994, the core business of the Company is to develop, construct and operate coal-fired and gas-fired power plants, new energy generation projects and supporting ports, shipping, incremental distribution grid and other facilities throughout China and abroad by making use of modern technology and equipment and financial resources available domestically and internationally to provide electricity, heat and integrated energy services to the community.

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.

As of 31 December 2023, the Company had a controlled installed generation capacity of 135,655 MW. The Company has power plants located in 26 provinces, autonomous regions and municipalities, wholly owns a power company in Singapore and invests in a power company in Pakistan.

2. Corporate Governance

Under the leadership of the Communist Party of China, and guided by Xi Jinping Thoughts on Socialism with Chinese Characteristics for a New Era, the Company thoroughly studied and propagandized the spirit of the 20th National Congress of the Communist Party of China, continuously deepened theoretical practice, emphasized to promote the Party building and guidance, comprehensively implemented the fine Party culture and incorrupt construction of the Communist Party, fully relied on the workforce, and led high-quality development with high-quality Party building.

As a listed company, the Company is subject to regulations of security regulatory authorities and supervision from its investors, strictly complies with requirements of laws and regulations, vigorously fulfills corporate social responsibility, and constantly improves and promotes the modern corporate governance system and governance level of the Company. The Company has established and improved a sound corporate governance structure consisting of the shareholders' general meeting, the Board, the Supervisory Committee and the management team, and built an operating mechanism with a 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 smooth implementation of the operation and management of the management team.

SOCIAL RESPONSIBILITY REPORT

After years of exploration and practice, the Company has built up a normal, effective and sound corporate governance system that caters for the development of the Company. The Company regularly evaluated the applicability and effectiveness of the management system and revised and improved it to achieve dynamic maintenance of the system.

The Company wins high recognition from regulators and the capital market for its good image of regulation and integrity, professionalism and transparency, and respect for shareholders all the time. In 2023, guided by the vision of "becoming a first class power producer", the Company built a "1-2-3" working system, and coordinated the implementation of special work such as quality improvement, reform deepening and compliance management, which resulted in an overall increase in governance efficiency. Due to such efforts, the Company won the "Best Listed Company" award and the "Listed Company Awards of Excellence" in the selection of the 13th China Securities Golden Bauhinia Award, and received an A grade rating in the information disclosure assessment from the SSE. The Company managed investor relations through multiple channels, platforms and methods, and won the "Best Investor Relations Management Listed Company" in the Crystal Ball Award by the Securities Market Weekly. The Company's annual report for H Shares was awarded the silver award in the power company category, the bronze award in the energy category and the silver award for cover design in the energy category of the ARC Awards. The Company has issued high-quality sustainable development reports for 14 consecutive years, and continuously enhanced communications and exchange with stakeholders. The Company's ESG practices have been included in the list of "Vanguard 100 Index" of the SASAC and the "Best Practice Case of Listed Companies" by China Association for Public Companies.

II. OPERATION RESPONSIBILITY OF THE COMPANY

The Company has endeavored to produce more products that meet the needs of the society and the people, and devote it to creating greater value for our shareholders. Facing the complicated market condition, the Company took the initiative to overcome difficulties, focused on market expanding and cost control, and made positive contributions to enhancing national economic strength through professional, lean and efficient management.

The Company has steadily promoted the market expansion. The Company strengthened the research and judgement on market condition, refined the marketing strategy and made efforts to generate more efficient power. The Company has achieved a total of 474.7 billion KWh of power generation, representing a year-on-year increase of 5.2%. The Company also continued to enhance the communication and coordination with government and users, spared no efforts to make full use of support policies, and strove to stabilize the transaction electricity price. By continuously increasing efforts to explore the heat market and actively promoting heat price increase, the Company made efforts to improve heat supply yields. The Company has achieved a total of 340 million GJ of heat supply, representing a year-on-year increase of 5.9%.

The Company adopted strong measures for cost reduction and efficiency improvement. The Company closely monitored the key aspects of fuels, and made solid efforts in long-term coal supply and price control, reducing the unit price of standard coal purchase by RMB170/tonne or 13.2% and expenses by approximately RMB24.5 billion through purchase strategy adjustment, off-season coal storage management, blending combustion and other measures. The Company gave full play to investment and financing platforms, actively revitalized the existing thermal power assets, and completed the issuance of five quasi-REITs with the interest rate hitting a new low among comparable products and RMB19.151 billion of equity funds raised, leading to a decrease of 3.81 percentage points in the debt-asset ratio. Both the balance of domestic interest-bearing debts and comprehensive costs decreased.

The Company has made excellent achievements in overseas projects. The Company further implemented the Belt and Road Initiative and pursued high-quality development of its international business, resulting in profits of RMB4,960 million in aggregate for overseas projects, representing a year-on-year increase of 100%, which accounted for 38% of the total profits of the Company. Tuas Power maintained its leading position in the industry in terms of market share, operating results, financing costs, liability ratio and other indicators, achieved a leap-forward growth in the operating efficiency with its profits exceeding RMB4 billion for the first time, and made a distribution of RMB1.8 billion to the Company. Tembusu Power Plant completed the sales of the first international green certificate. Jurong Island desalination project realized commercialization and maintained stable operation. Tuas Power Project was selected as one of the 100 Best Practice Cases for Implementing the Belt and Road Initiative over the Past Decade by China Association of Listed Companies. In terms of Sahiwal project in Pakistan, the Company made solid efforts in fuel management, capital management, tax reduction and exemption, etc., and strictly controlled costs and expenses, leading to a year-on-year increase in the total pre-tax profit. The management level of Sahiwal project in Pakistan has continued to improve, achieving a safety production of 2,400 days, and this project has won the Reliable Power Station Award for five consecutive years. The Company deepened the improvement of quality and efficiency and maintained stable operating efficiency throughout the year, achieving a profit of RMB605 million, representing a year-on-year increase of RMB9 million.

III. SAFETY RESPONSIBILITY OF THE COMPANY

The Company has always prioritized safety development, adhered to the safety concept that "safety is credibility, safety is efficiency, safety is competitiveness, and safety responsibility is of the utmost importance", constantly improved safety production governance system, fully strengthened the foundation for safety production, and made every effort to ensure safe and stable power supply to the society and the power grid.

The Company strengthened the foundation for safety management. The Company has solidly promoted the action of the "year of safety management improvement", strengthened the capacity building of safety management on an all-round basis, and continuously enhanced essential safety level. The Company further improved the safety production responsibility system covering all employees, the whole process and every aspect, and built a strong defence line for safety production. The Company fully implemented a dual prevention mechanism of risk grading and control and hidden danger investigation and management. We have successfully dealt with extreme weather such as heavy rain and snow as well as strong cold waves and natural disasters, ensured long-term and continuous unit operation, and effectively guaranteed the supply for Hangzhou Asian Games, the high-level Belt & Road Initiative forum and other important periods. The Company strengthened safety management in infrastructure field, clarified safety responsibilities at all levels, carried out safety inspections such as "Field Investigation without Notice and Report" in multiple fields and under different themes, completed risk and hidden danger investigation and problem rectification, and achieved zero injury and death and zero accident in infrastructure field of thermal power.

SOCIAL RESPONSIBILITY REPORT

The Company ensured safe and stable operation of equipment. The Company attached importance to the safety of equipment, highlighted "refined management", intensified management and control over "control of non-planned stop", improved the safety management, equipment management and production management of power plants and enhanced the awareness of safety responsibility system implementation. The Company strengthened the whole process control of unit operation and maintenance, conducted analysis on equipment breakdown, and continuously improved the level of equipment reliability. 55 thermal power units of the Company won the awards in the benchmarking of energy efficiency organized by the China Electricity Council, accounting for 14% of the total awards.

IV. ENVIRONMENT RESPONSIBILITY OF THE COMPANY

The Company consistently adhered to the new development concept, thoroughly implemented the new energy safety strategy of "Four Revolutions, One Cooperation", focused on the goal of "carbon neutrality and carbon emission peaking", faithfully implemented the general idea of building a new power system with new energy as the subjects, thoroughly carried out the carbon peak action plan and accelerated the green and low-carbon transformation, so as to contribute the Company's strength to the harmonious development of human and nature.

The Company made steady progress in thermal power optimization. The Company developed clean and efficient coal power projects in a scientific way, realizing high-quality operation of Unit 6 of Shidongkou I Power Plant and Unit 2 of Yangpu Combustion Engine; and the construction of Liangjiang Power Phase II and Dongguan Combined Cycle Co-generation Phase II successfully commenced. The efficient residual heat utilization project of flue gas from combined cycle co-generation with the largest scale in the world was successfully put into operation at Beijing Thermal Power Plant, with a maximum daily heat collection of 25,000 GJ, resulting in an increase in the heating area of 7.50 million square meters. Ruijin Power Plant Phase II Project won the National High-Quality Project Gold Award and the National Equipment Management Demonstration Project of Electricity Industry, Dongguan Combined Cycle Co-generation won the National High-Quality Project Award, and Jiangyin Combined Cycle Co-generation and Jining Co-generation won the China Installation Star. The integrated management of engineering technology of efficient coal-fired intelligent power plant won the second place of the National Modern Corporate Management Innovation Achievements. The Company continued to promote the "energy-saving and consumption-reducing renovation, heat supply renovation and flexibility renovation" of coal-fired power units, with 13 projects including the steam turbine flow passage improvement of Luohuang Power Plant Unit 6 selected as model cases by China Electricity Council.

The Company took new steps in green development. The Company accelerated the reserve and development of "zero carbon emission" power generation projects and steadily increased the installed capacity of new energy. The Company completed the approval (filing) of 34,200 MW of new energy projects for the year. The Company started the construction of new energy installed capacity of 12,170 MW and put 8,860 MW into grid-connected operation. New energy resources of 3,050 MW were selected into the third batch of national large-scale wind power photovoltaic bases. Lemen Project, the Company's first offshore wind power project in Guangdong Province, was put into grid-connected operation, and Lingao Project, the Company's first offshore wind power project in Hainan Province, commenced construction. Three new energy projects, namely Puyang Wind Power, Dafeng Offshore Wind Power and Peninsula South No. 4 Offshore Wind Power, won the National High-Quality Project Award. The Company's new energy installed capacity reached 28,610 MW, accounting for 21.1% of the total installed capacity, representing a year-on-year increase of 5.5 percentage points, among which, the installed capacity of grid-connected operation of offshore wind power reached 4,450 MW.

Energy saving and consumption reduction have been continuously strengthened. The Company continued to improve the energy-saving management system, carry out benchmarking management of the same type of units, focus on energy-saving technology innovation and application, continuously improve the energy efficiency level of the units, and promote the gradual shift from "dual-control of energy consumption" to "dual-control of carbon emission". In 2023, the Company maintained a good level of major energy consumption indicators for the Company as a whole and for each of its major models.

The Company made great progress in technological innovation. Focusing on the national strategic needs, the Company gave full play to technological strength and talent strength, and strove to conduct key core technology research in the energy field. The key technology of offshore wind power passed the comprehensive performance assessment of the Ministry of Science and Technology of the PRC; the high temperature materials project passed the acceptance check and achieved over ten technological breakthroughs; and the combustion engine automatic operation and maintenance project met the acceptance conditions, with three proprietary technologies included in the Recommended Catalogue of Scientific and Technological Innovation Achievements of Central Enterprises. The Company established the all-fired high alkali coal liquid slag boiler technology innovation consortium. The BEST electric generator speed regulation feed pump project that the Company participated in won the first prize of Science and Technology Progress in Engineering Construction of China Association of Construction Enterprise Management. The Company built a super capacitance energy storage system with the globally largest capacity of 5 MW in Luoyuan Power Plant. The Company implemented the recycling and utilization of coal ash and slag with high added value in Yangliuqing Power Plant, and developed a new fibrous material used for heat preservation. In 2023, the Company obtained 617 invention patents, representing a year-on-year increase of 140%.

The Company pushed forward digital construction. The Company completed the goal of the first stage of management system construction for intelligent development, and established a cloud platform for remote video supervision system of engineering data and information sharing. The test use of specialized remote video tool for infrastructure construction developed by the Future Smart Power Construction Youth Innovation Studio was successful at Shidongkou I Power Plant. Functional modules such as the digital technology and economy management information system investment and decision-making were launched for test run. The cyber security platform project won the first prize of China Electric Power Science and Technology Progress Award, and the cyber security technological innovation and service support platform project won the first prize of Electric Power Science and Technology Innovation Award.

The Company conducted emission management in an orderly manner. The Company actively strengthened the management of safe and stable operation of environmental protection facilities of the unit, strove to implement ecological and environmental protection risk control, and strictly controlled the emission of pollutants to meet the standards. The Company conscientiously implemented various air quality protection measures during major events and heavy pollution weather to ensure air quality protection during key hours, showing the green image of Huaneng. In 2023, the emission performance of the Company's thermal power units for sulfur dioxide, nitrogen oxides and soot was 0.06g/KWh, 0.13g/KWh and 0.01g/KWh, respectively, and the overall pollutant emission concentration remained stable at the ultra-low emission level. In terms of greenhouse gas emission management, the Company has firmly established the awareness that "carbon emission results in costs and carbon reduction brings benefits", and made solid efforts to measure and verify greenhouse gas emission data. It has also actively carried out intra- and inter-regional quota trading. The above management measures have effectively reduced the overall carbon compliance cost of the Company.

SOCIAL RESPONSIBILITY REPORT

V. STAFF RESPONSIBILITY OF THE COMPANY

With the belief that "elites are the forefront important assets", the Company has carried out the Party's organizational line in the new era, stuck to the correct direction of selection and employment of personnel, and actively promoted the strategy of developing the enterprise by talents. Focusing on the business development, the Company continuously improved the human resource management system, and accelerated the development of a talent team with senior-level talents and highly skilled talents as the main body. As a result, a team of talents with excellent quality, which is well structured, professionally equipped, devoted to the business of Huaneng and meets the need of the Company's development strategy, has been formed.

The Company protected the rights and interests of employees in all aspects. The Company insisted on a fair, just and open employment policy, implemented the Labor Contract Law, the Labor Union Law and other laws and regulations, improved the system requirements such as staff representative meeting and plant affairs publicity, encouraged and supported employees to participate in democratic management, protected employees to fully enjoy the right to information, participation and supervision, continuously improved and deepened the construction of salary distribution system, established various social insurance and housing provident fund in accordance with the law, paid the fees in full and on time, protected employees' social welfare treatment, safeguarded employees' legitimate rights and interests and realized the enterprise development goal together with employees.

The Company promoted staff development through multiple channels. The Company deeply promoted the practical experience and professional training of employees, increased the efforts of communication from top to bottom of the Company, actively expanded the development channels of employees and enhanced the practical training of employees. Meanwhile, it enriched the performance experience and broadened the growth channels, improved the staff learning platform, set up learning teams to promote the growth of technical talents, organized staff to participate in multi-level and multi-disciplinary training in political theory, management knowledge and business skills, and practically cultivated and trained employees in all aspects through job training, multi-level training, etc. to enhance their comprehensive ability, enrich work experience and improve the ability to manage complex situations, so as to build a good platform for the growth of personnel.

VI. SOCIAL RESPONSIBILITY OF THE COMPANY

Under the guidance of the "three colors" culture, the Company adhered to the harmonious development concept of "serving the country, benefiting society, seeking multi-win results and common growth", integrated into the development of the community, and worked together with stakeholders to promote social prosperity and progress. The Company actively implemented the help and assistance policy of the state and strove to promote the development of rural revitalization. The Company carried out various public welfare activities to help the people achieve a better life. In 2023, the Company was awarded the title of "Top 500 Chinese Public Companies in Philanthropy in 2023" and "Top 500 Chinese Enterprises in Rural Revitalization in 2023".

Guided by Xi Jinping Thoughts on Socialism with Chinese Characteristics for a New Era, the Company thoroughly implemented the spirit of the 20th National Congress of the Communist Party of China, earnestly carried out the decision and arrangement of the CPC Central Committee and the State Council on advancing rural revitalization on all fronts, followed the general requirements of rural revitalization featuring "thriving businesses, an eco-friendly environment, social etiquette and civility, effective governance, and prosperous rural population" to stabilize and improve support measures, implement support projects in a precise manner, and effectively support China's ambitious blueprint of achieving the modernization of agriculture and rural areas as well as accelerating the building of a strong agriculture.

The Company actively organized grass-roots enterprises to undertake the support and assistance tasks arranged by local governments, effectively ensured stable income of farmers in poverty alleviation as well as continuously consolidated and expanded the achievements in poverty alleviation through targeted assistance, assigning personnel to villages for assistance, targeted donations and other means. The Company has been playing the advantages of its main business, investing in the construction of PV assisting projects according to local conditions, improving rural energy conditions and increasing collective stable income. The Company conducted in-depth explorations of distinctive resources in the assisted areas and supported the cultivation of new industries and businesses, in a bid to promote the high-quality development of rural industries. The Company also funded the construction of public infrastructure to improve the production and living conditions of assisted people in an effective way and accelerate the building of a beautiful and harmonious countryside that is desirable to live and work in. The total investment in the assistance fund of the Company amounted to RMB14.634 million during the year. The Company vigorously implemented consumption assistance and actively organized and participated in "New Year's Campaign for Consumption Assistance" and "Week for Revitalizing Agriculture Driven by Consumption Assistance of Central Enterprises". Throughout the year, we have purchased and helped sell agricultural products from the targeted assisted areas, energy industry cooperation areas and key national assisted areas of approximately RMB50 million. The Company has been carrying out the project of helping students, the project of rescuing urgent difficulties and the project of blessing to develop agriculture. It has been promoting the goal of modernizing the development of agriculture, the ecological livability of the countryside and the common prosperity of the farmers in the assisted areas from various aspects such as talent cultivation, medical protection, industrial development and grass-roots party building.

In 2023, Hebei Province was hit by flooding. The Company launched an emergency response immediately and investigated the safety concerns of production equipment, so as to ensure the safe and stable supply of electricity and heat. The Company worked closely with the local government and proactively participated in the flood relief to ensure the safety of people's lives and property with utmost efforts. The Company also actively organized donations for the rescue, with a total of over RMB7 million of amounts and materials donated by the Hebei Branch and other companies, contributing Huaneng's part to flood control and disaster relief.

The Company has set up a volunteer service platform and carried out "Three-color Sail" brand public welfare activities, contributing love and warmth in many fields such as education, medical care and environmental protection. The Company's overseas subsidiaries have been practicing the concept of social responsibility and participated in several local public welfare projects, reflecting the principle of mutual discussion, co-construction and sharing. Tuas Power in Singapore has supported local charities, volunteer and welfare organization and cooperative projects for several years, receiving extensive recognitions from all walks of life.

Going forward, the Company will remain true to its original aspiration to fulfil its responsibilities with practical actions, provide safe and stable clean energy for China's development with high efficiency and quality, create a beautiful and harmonious ecological environment for future sustainable development, and provide strong support with a human touch to a better and happier life of the people.

INVESTOR RELATIONS

PHILOSOPHY OF INVESTOR RELATIONS

The Company has always highly valued the management of investor relations since its listing. The Company communicates with all investors in a wholehearted, equal and respectful manner through timely and diversified two-way channels, enhancing and perfecting the management of investor relations of the Company. In addition, the Company also values the two-way interactive communication of "disclosure" and "adoption". As to "disclosure", the Company discloses information including financial position and operating performance to investors accurately, fairly and comprehensively in a responsible manner, which helps investors to understand and recognize the current situation and future development strategy of the Company. As to "adoption", the Company makes ready various channels to collect opinions of investors to adopt suggestions and ideas related to its operating activities. Such two-way communication effectively improves the operation management ability of the Company and ultimately maximizes the interests of the Company and all shareholders as a whole.

MECHANISM OF INVESTOR RELATIONS

Establishing meticulous organization and enhancing system development

The Company sets up specific information disclosure organizations (Information Disclosure Committee and Information Disclosure Work Team) and holds routine information disclosure meetings, making clear the work flow for information disclosure of the Company and guaranteeing the compliance and time effectiveness of information disclosure.

In the meantime, the Company has formulated the Rules on Information Disclosure Management, the Rules on Related Party Transactions Management, the Rules on Investor Relations Management, the Rules on the Work of the Information Disclosure Committee, the Rules on Insider Information Management and the Rules on the Annual Report Information Disclosure Significant Errors Accountability, etc., specifying the basic principles, targets, procedures, contents of disclosure, registration and filing of insider information and related accountability. The promulgation and implementation of these regulations further enhanced the information disclosure system of the Company, strengthened the discipline of the Company's information disclosure, prevented and minimized the insider dealing activities, improved the authenticity, accuracy, completeness and timeliness of information disclosure, so as to protect the legal interests of shareholders. In 2023, in accordance with the latest regulatory requirements and based on its actual situation, the Company made amendments to the existing four rules, namely the Rules on Information Disclosure Management, the Rules on Related Party Transactions Management, the Rules on Insider Information Management and the Rules on the Work of the Information Disclosure Committee, to further regulate the information disclosure, related party transactions and insider information management and provide effective basis and guidance for the Company to carry out daily business in compliance with requirements.

In addition, the Company has also formulated the "Internal Control System" as well as the "Internal Control Handbook" according to the relevant requirements of the State and Sections 302 and 404 of the "Sarbanes-Oxley Act of 2002", and further enhanced our corporate governance and ensured truthful, timely, accurate and complete information disclosure.

The Company has established a complete and effective control system for the entire process of the information disclosure, so that the Company was able to control potential risks in information disclosure effectively and ensure that all information disclosed by the Company is regulated and effective since its listing. With its timely, accurate and sufficient information disclosure, the Company has been well recognized by domestic and overseas investors.

Broaden channels and effective communication

In view of the different needs and nature of different investors – existing investors, potential investors, institutional investors and retail investors, the Company actively holds a variety of investor relations activities in various forms, including phone enquiries, emails, analyst conferences, one-on-one meetings, investment forums, roadshows and reverse roadshows, according to the characteristics of different investors, with a view to achieve all-round and effective communication and establish long-term and stable relations of mutual trust.

The Company insists on handling daily calls and visits made by investors properly. By consistently updating and sorting out the investor database, expanding the investor communication network of the Company, and holding two-way interactive investor relations activities, the Company is able to enhance the understanding and knowledge of investors about the Company, adopt suggestions and ideas put forward by investors, create two-way communication channels and platforms for smooth communication with investors and maximize the interests of the Company and investors.

Timely disclosure and continuous follow-up

The Company discloses its information in a truthful, accurate, complete and timely manner strictly according to the requirements of the regulatory authorities of its listing places, thereby increasing the transparency of and drawing market attention to the Company and enhancing the image of the Company in capital markets. In the meantime, the Company follows up feedbacks from investors consistently and ensures effective communication, with a view to establish stable investor relations.

In 2023, the Company issued a total of 313 domestic and overseas announcements.

NOTE TO SHAREHOLDERS

Dividend Distribution

The Board of Directors recommends the payment of a dividend of RMB0.20 (tax inclusive) per share for 2023 to all shareholders. The dividends will be denominated and announced in RMB, of which dividends on domestic shares will be paid in RMB whereas dividends on foreign shares traded on the Hong Kong Stock Exchange will be paid in Hong Kong dollars. All dividends shall be paid upon the approval of the Shareholders at the annual general meeting of the Company.

DIVIDEND DISTRIBUTION

The Company's Articles of Association clearly defines the Company's cash dividend policy, i.e. when the Company's earnings and accumulative retained profits for the current year are positive, and on the condition that the Company's cash flow is able to meet the need for its ordinary operation and sustainable development, the Company shall adopt a cash dividend policy on the principle that the cash dividend payout shall be no less than 50% of the realized distributable profit stated in the consolidated financial statement that year.

In the future, the Company will continue to adhere to a proactive, balanced and stable dividend policy, and persistently enhance its profitability, striving for realization of increasing returns to shareholders.

DIVIDEND PAYMENT

Since the listing of the Company, shareholders have given great support to and cared much for the Company. The Company has also generated returns that have been growing continuously and steadily over the years. The Company has been paying dividends to shareholders since 1998, with an accumulated dividend of RMB62.687 billion paid.

INVESTOR RELATIONS

Year	Dividend per share (RMB)	Earnings per share (RMB)	Payout ratio
1994	–	0.17	N/A
1995	–	0.24	N/A
1996	–	0.27	N/A
1997	–	0.33	N/A
1998	0.08	0.33	24.24%
1999	0.09	0.33	27.27%
2000	0.22	0.44	50.00%
2001	0.30	0.60	50.00%
2002	0.34	0.65	52.31%
2003*	0.50	0.90	55.56%
2004	0.25	0.44	56.82%
2005	0.25	0.40	62.50%
2006	0.28	0.50	56.00%
2007	0.30	0.51	58.82%
2008	0.10	-0.33	N/A
2009	0.21	0.41	51.22%
2010	0.20	0.28	71.43%
2011	0.05	0.08	62.50%
2012	0.21	0.39	53.85%
2013	0.38	0.74	51.35%
2014	0.38	0.76	50.00%
2015	0.47	0.94	50.00%
2016	0.29	0.56	51.79%
2017	0.10	0.10	100.00%
2018	0.10	0.03	333%
2019	0.135	0.01	1,350%
2020	0.18	0.04	450%
2021	–	-0.81	N/A
2022	–	-0.61	N/A
2023**	0.20	0.35	57.14%

* The Company's profit distribution plan for 2003 included a cash dividend of RMB5 together with bonus issue of 10 shares for every 10 shares.

** The proposed 2023 dividend distribution plan will be implemented after having obtained approval from shareholders at the annual general meeting.

INVESTOR RELATIONS ACTIVITIES

Results conference

The Company insists on proactively promoting its performance at a frequency higher than that required by the regulatory authorities as soon as the quarterly periodic report is released. In 2023, the Company organized telephone conferences to promote the annual results of 2022 and the first quarter results, the interim results and the third quarter results of 2023 to global investors. The total number of participants of the four conferences exceeded 1,000. In order to actively implement the regulatory requirements, the chairman and other management of the Company attended the Results conferences in strict accordance with the regulatory requirements, and also invited independent directors to attend the conferences, which strengthened the authority and standardization of results conference. During the conferences, the Company communicated with investors on the hot topics in the market, expounded the company's development concept and operation situation, and conveyed the Company's value.

Investment forums and investor meetings

In 2023, the Company actively participated in investment forums and investor exchange activities organized by domestic and foreign institutions such as Citibank, Morgan Stanley and CITIC Securities, and received more than 60 surveys by institutional investors, including 23 on-site surveys. In addition, the Company actively participated in the "2023 High-quality Development Collective Roadshow of Listed Companies in Shanghai – ESG Special Event for Central Enterprises" hosted by the Shanghai Stock Exchange to show the Company's operations in multiple dimensions.

Visits by and general enquiries from investors

In 2023, the Company carried out daily investor relations maintenance in an orderly manner. The Company received more than 280 investor visits and telephone inquiries from investors. The Company paid attention to the SSE E-interactive platform in real time, replied to questions from investors on the platform in a timely manner, promptly responded to investors' concerns about the Company's transformation and development and earnings return, strove to build mutual trust between the Company and small and medium-sized investors, and better protected investors' right to be informed.

REPORT OF THE BOARD OF DIRECTORS

The Directors hereby presents the annual report together with the audited financial statements for the year ended 31 December 2023.

RESULTS SUMMARY

The Board of Directors (the "Board") of Huaneng Power International, Inc. (the "Company" or "Huaneng International") hereby announces the audited operating results of the Company and its subsidiaries for the year ended 31 December 2023.

For the twelve months ended 31 December 2023, the Company and its subsidiaries realized consolidated operating revenue of RMB254,397 million, representing an increase of 3.11% compared to the same period last year, and net profit attributable to equity holders of the Company amounted to RMB8,357 million, representing an increase of RMB16.384 billion and 204.13% as compared with the same period last year. Earnings per share amounted to RMB0.35. The Board is satisfied with the results of the Company in the past year.

Details of the operating results are set out in the financial information. Unless otherwise specified, all amounts in this report are denominated in Renminbi Yuan.

The Board proposed to declare a cash dividend of RMB0.20 (inclusive of tax) for each ordinary share of the Company held by shareholders.

BUSINESS REVIEW OF YEAR 2023

In 2023, the Company proactively responded to changes of the industry, with all employees making concerted effort and focusing on operational targets. The Company continued to exert efforts on stabilizing production and increasing income, reducing costs and expenditures, and pushing transformation and development, and strove to improve the profitability and operating efficiency. The production of new energy project of the Company hit a record high, and the annual operating results achieved a turnaround, marking a new quality improvement of the Company.

1. Operating Results

For the year ended 31 December 2023, the Company realized operating revenue of RMB254,397 million, representing an increase of 3.11% as compared with the same period last year. Net profit attributable to equity holders of the Company amounted to RMB8,357 million, representing an increase of RMB16.384 billion and 204.13% as compared with the same period last year. The earnings per share amounted to RMB0.35.

As at the end of 2023, net assets per share of the Company amounted to RMB3.77, representing an increase of 10.56% as compared with the same period last year.

The Audit Committee of the Company convened a meeting on 18 March 2024 and reviewed the 2023 annual results of the Company.

2. Power Generation

In 2023, based on the principle of quantity and price co-ordination and efficiency first, the Company strengthened policy research, market analysis and internal professional coordination, constantly optimized marketing strategies, actively responded to the opportunities and challenges in the electricity and heating markets, made every effort to strive for higher electricity transaction prices and heating prices, and strove to generate more profitable electricity. The Company's total electricity sold by the domestic operating power plants on a consolidated basis amounted to 447.856 billion kWh, representing a year-on-year increase of 5.33%. The annual average utilization hours of the Company's domestic power plants were 3,776 hours, representing a year-on-year decrease of 9 hours. In particular, the utilization hours of coal-fired power generating units were 4,388 hours, representing a year-on-year increase of 160 hours. The Company proactively explored the heating market and expanded heating areas, and the total heat supplied by the Company amounted to 342 million GJ, representing a year-on-year increase of 5.93%.

3. Fuel Procurement

In 2023, the domestic coal supply maintained at a high level, and the imported coal supply increased substantially year-on-year. The balance of coal supply and demand shifted from tight to loose situation, and the coal price fluctuated downward, but still remained at a high level. The Company accurately judged the market trend, strengthened the implementation of national policies, actively promoted the high-quality signing and performance of medium and long-term contracts for thermal coal, and constantly optimized the supply structure of domestic and foreign trade, and achieved remarkable results in control of fuel costs. During the year, the Company purchased a total of 212 million tons of coal, and the fuel cost per unit was RMB326.43 per MWh, representing a year-on-year decrease of 12.38%.

4. Environmental Policy and Performance

The Company's safety production, technical-economic and energy consumption indicators continued to maintain a good level throughout the year. In 2023, the average equivalent availability ratio of the domestic thermal power generating units of the Company was 93.76%, coal consumption of power supply was 291.88g/kWh and the house consumption rate of plants was 4.33%. In the benchmark of energy efficiency level of thermal power units in the national power industry in 2022 by the China Electricity Council, the Company has a total of 55 units winning prizes. With respect to air pollution emissions, the Company achieved a full coverage of ultralow emission in coal-fired power generating units. With respect to treatment of wastewater discharge and coal yards and ash yards, the Company has allocated funds to carry out environmental technological transformation projects such as wastewater treatment, coal yard closure, and ash yard transformation in power plants in key regions. All power plants have accelerated environmental protection transformation projects to ensure that pollutant emissions meet the stringent requirements under pollution discharge permits and other ecological and environmental protection policies. The Company strictly abides by the Law of the People's Republic of China on Environmental Protection, the Law of the People's Republic of China on Energy Conservation and other laws and regulations in its development, strictly guards against environmental risks, and resolutely polishes the brand of Green Huaneng.

5. Project Development

The Company overcame a variety of adverse factors such as extreme weather, labor shortage, lagged supply of materials and equipment, difficulties in grid connection and coordination, and promoted the construction of power generation projects in an orderly manner. During the year, the Company added a controlled generation capacity of 10,003.9 MW, among which the installed capacity for power generated from low carbon clean energy reached 9,353.9 MW, surpassing the annual target. As of 31 December 2023, the Company's controlled generation installed capacity was 135,655 MW, including 15,511 MW of wind power controlled generation capacity and 13,100 MW of solar energy controlled generation capacity, and low carbon clean energy installed capacity accounted for approximately 31.24%.

6. Scientific and Technological Innovation

In 2023, the Company continued to maintain a large investment in research and development. The scientific and technological innovation work has made remarkable achievements, and the transformation of scientific and technological achievements continued to promote. The technological research and development of large-scale offshore wind power in design, manufacturing, installation, commissioning and operation undertaken by the company and funded by the Ministry of Science and Technology of the People's Republic of China came to a successful conclusion; more than ten technological breakthroughs were made in the research of high-temperature metal materials; the research results of failure analysis of key components of the combustion turbine, non-destructive testing and efficiency diagnosis were included in the catalog of recommended scientific and technological innovations of the state-owned

REPORT OF THE BOARD OF DIRECTORS

enterprises. The energy-saving technology of deep peaking process of coal-fired units was successfully applied in 600 MW units of Shandong Weihai Power Plant, and the coal saving benefit of variable-load process reached 1.5 g/kWh; the first set of flue gas CO2 capture device of combustion turbine (2,000t/year) was successfully developed in Yangpu Combustion Turbine of Hainan Province; the world's largest 5 MW super capacitor energy storage system was successfully developed in Luoyuan Power Plant of Fujian Province. The world's largest efficient waste heat utilization device of combustion turbine flue gas was put into operation in Beijing Thermal Power Plant, and the heating area was increased by 7.5 million square meters; a new type of thermal insulation fiber material was developed in Tianjin Yangliuqing Power Plant, and the value of comprehensive utilization of ash was significantly increased. A total of 617 invention patents, 3,239 utility model patents and 320 international patents have been granted to the Company and its affiliated units.

7. Overseas Business

Tuas Power Ltd. ("Tuas Power"), a wholly-owned subsidiary of the Company in Singapore, actively responded to the influence of the tight supply of natural gas in the international market and the adjustment of Singapore's electricity market policy and maintained the long-term safe and stable operation of units. The market share of power generation for the year was 20.4%, maintaining the leading position in the industry. Tuas Power actively strengthened the cooperation with fuel suppliers and continued to optimise the supply structure, ensuring stable fuel supply. Tuas Power actively expanded the retail market and continuously optimized the retail contract structure. Marginal contribution from electricity sales improved year-on-year and profitability increased year-on-year.

The power generation of Tuas Power for the year amounted to 11.271 billion kWh, representing a year-on-year decrease of 1.084 billion kWh; the pre-tax profit was RMB4.355 billion, representing a year-on-year profit increase of RMB2.477 billion.

The Company's business management level in Pakistan has been continuously improved, with 2,400 days of safety production and winning the Reliable Power Plant Award for 5 consecutive years. The Company deepened the improvement of quality and efficiency, greatly reduced production fees and management fees, strengthened fund management, and strengthened the recovery of electricity fees. The operating efficiency remained stable throughout the year, achieving an operating revenue of RMB4,061 million and a total profit of RMB605 million, representing a year-on-year profit increase of RMB9 million.

PROSPECTS FOR 2024

In 2024, the Company will firmly implement the deployment of the State-owned Assets Supervision and Administration Commission of the State Council to improve the quality of listed companies controlled by state-owned enterprises, take building the Company into a world-class enterprise as the main line, focus on the Company's "14th Five-Year Plan" and development strategy, strengthen the determination of green and low-carbon development, and strive to promote the Company's transformation and development. The Company will further leverage the functions of listed companies, pay more attention to excellent operation, value creation and brand building, and forge ahead and work hard to ensure the full completion of the annual goals and tasks and push the Company's high-quality development to a new level.

In terms of power construction, the Company will focus on green and low-carbon transformation, vigorously develop new energy, continuously optimise the development of thermal power, optimise the layout of peak-shaving gas and electricity, and take safe development as the basis, quality and efficiency as the centre, scientific and technological innovation as the support and modern management as the methods to coordinate and grasp the safety, quality, cost, technological innovation, intelligent infrastructure and other comprehensive work, so as to ensure effective improvement of quality and reasonable growth of quantity, and help build a new power system.

In terms of electric power generation, while operating and maintaining the clean energy power generation system, the Company will attach importance to the basic and adjusting roles of existing thermal power generating unit in the energy safety system of the society, actively conduct useful life extension appraisal and transformation, and maintain the health level of standby set for emergency. The Company will actively develop the heat supply industry to upgrade integrated energy services, deeply study the application prospect of biomass-coupled power generation and grasp the market opportunities, and earnestly strengthen the environment protection treatment as demanded by the ecological civilization construction of various regions to consolidate the leading position in safety production, energy conservation and environmental protection.

In terms of electric power marketing, the Company will insist on efficiency first, quantity and price coordination, pay a close attention to the change of the electricity market, comprehensively research and judge the market competition situation and electricity price trend, actively respond to the introduction of electricity price of the capacity of coal-fired units and new energy electricity transactions, fully stabilize the medium and long-term income, and rationally use the spot market rules to obtain spot income. The Company will fully explore the electricity sales market, do a good job in building Huaneng's electricity sales brand, improve the income from electricity sales, and further optimize carbon market transactions. The Company will continue to improve the level of marketing informatization and strengthen the cultivation of talents. The Company will strive to achieve a domestic power generation of around 485 billion kWh in 2024.

In terms of fuel procurement, the Company will scientifically coordinate the relationship between supply assurance and price control, guarantee the fuel supply and control the procurement costs. The Company will make every effort to improve the performance quality of mid-term and long-term contracts and give full play to the role of "cornerstone" in long-term contracts. The Company will also rigidly implement the coal and electricity industry synergy plan and give full play to the role of internal supply underwriting protection. At the same time, the Company will further optimise the coal procurement structure, accurately procure imported coal and make every effort to reduce procurement costs.

In terms of capital, the Company will reinforce the research and judgment on the capital market, increase financing, safeguard fund supply and continue to optimise the financing structure. The Company will rationally determine the financing scale and the timing of the availability of the funding. The Company will also broaden financing channels, make good and full use of green finance policies, and strive to reduce capital costs while ensuring capital security.

SUMMARY OF FINANCIAL INFORMATION AND OPERATING RESULTS

Please refer to the Financial Highlights on pages 10 to 11 for the summary of the operating results and assets and liabilities of the Company and its subsidiaries as at 31 December 2023 and for the accounting year ended 31 December 2023.

Please refer to pages 132 to 134 of the financial statements for the operating results of the Company and its subsidiaries for the accounting year ended 31 December 2023, which have been reviewed by the Company's Audit Committee.

DISTRIBUTABLE RESERVE

The distributable reserve as at 31 December 2023 calculated in accordance with the Company's Articles of Association is set out in Note 22 to the financial statements prepared under the IFRSs.

REPORT OF THE BOARD OF DIRECTORS

DIVIDENDS

The Company has been paying dividends to shareholders since 1998, with an accumulated dividend of RMB62.687 billion paid.

The Company's articles of association provided for its cash dividend policy that the Company may pay cash dividends in any year when its earnings and accumulated undistributed profits are positive and its cash flows are sufficient for the normal conduct of business and sustainable development of the Company, provided that the profits to be distributed by the Company in cash shall, in principle, not be less than 50% of the distributable profits realized in that year as indicated in the consolidated accounts.

In accordance with the requirements of relevant laws and regulations and the articles of association of the Company, the Company adheres to the profit distribution policy whereby the distributable profits shall be the lower of distributable profits as stated in the financial statements prepared under the PRC GAAP and the IFRSs.

The Company's dividend distribution proposal for 2023: a cash dividend of RMB0.20 (inclusive of tax) per share will be distributed to all shareholders. All dividends shall be paid subject to the approval of the shareholders at the annual general meeting. It is expected that the Company will pay final dividend on or before 31 August 2024 upon after the distribution plan has been approved at the annual general meeting of the Company.

TAXATION ON RECEIPT OF THE PROPOSED 2023 FINAL DIVIDEND

Non-Resident Individual Shareholders

In accordance with the requirement under the Guo Shui Han [2011] No.348 issued by the State Administration of Taxation of the People's Republic of China, the Company is obligated to withhold and pay individual income tax on dividends on behalf of the individual H Shareholders ("Individual H Shareholders"); and Individual H Shareholders are entitled to certain preferential tax treatments according to the tax treaty between the country in which the Individual H Shareholders reside and the PRC and the provisions in respect of the tax arrangements between mainland China and Hong Kong (Macau). The Company shall withhold and pay individual income tax at the rate of 10% on behalf of the Individual H Shareholders (who are Hong Kong residents, Macau residents or residents of those countries having treaties with the PRC for an individual income tax rate on dividends of 10%). For Individual H Shareholders who are residents of those countries having treaties with the PRC for an individual income tax rate on dividends of less than 10%, the Company shall withhold and pay individual income tax on behalf of the individual pursuant to the relevant requirements under the Circular of the State Administration of Taxation in relation to Issuing the Administrative Measures on Preferential Treatment Entitled by Non-resident Taxpayers under Tax Treaties (SAT Circular [2019] No.35) （《國家稅務總局關於發佈<非居民納稅人享受協定待遇管理辦法>的公告》(國家稅務總局公告2019年第35號)） (the "Measures"). For individual H Shareholders who are residents of those countries having treaties with the PRC for an individual income tax rate on dividends of more than 10% but less than 20%, the Company shall withhold and pay individual income tax at the actual tax rate under the treaties. For Individual H Shareholders who are residents of those countries which have not entered into any tax treaties with the PRC or have entered into treaties with the PRC for an individual income tax rate on dividends of 20% or under other circumstances, the Company shall withhold and pay individual income tax at the tax rate of 20%.

Non-resident Enterprise Shareholders

In accordance with the "Enterprise Income Tax Law of China" and its implementation regulations which came into effect on 1 January 2008, the Company is required to withhold and pay enterprise income tax at the rate of 10% on behalf of the non-resident enterprise shareholders whose names appear on the register of members for H share of the Company when distributing 2023 final dividend to them. For H shares of the Company registered other than in the name(s) of individual(s), including HKSCC Nominees Limited, other nominees, trustees, or other organizations or groups, shall be deemed to be shares held by non-resident enterprise shareholder(s). On the basis, enterprise income tax shall be withheld from dividends payable to such shareholder(s).

The Company shall comply with the relevant rules and regulations to withhold and pay enterprise income tax on behalf of the relevant shareholders with reference to the register of members of the Company as of the record date.

Profit Appropriation for Investors of Northbound Trading

For investors of the Hong Kong Stock Exchange (including enterprises and individuals) investing in the A shares of the Company listed on the Shanghai Stock Exchange (the "Northbound Trading"), their dividends will be distributed in RMB by the Company through China Securities Depository and Clearing Corporation Limited to the account of the nominee holding such Shares. The Company will withhold and pay income taxes at the rate of 10% on behalf of those investors and will report to the tax authorities for such withholding. For investors of Northbound Trading who are tax residents of other countries and whose country of domicile is a country which has entered into a tax treaty with the PRC stipulating a dividend tax rate of lower than 10%, those enterprises and individuals may, or may entrust a withholding agent to, apply to the competent tax authorities for the entitlement of the rate under such tax treaty. Upon approval by the tax authorities, the paid amount in excess of the tax payable based on the tax rate according to such tax treaty will be refunded. Those enterprises or individuals shall collect and retain the relevant materials for future reference according to the requirement of the Measures.

The record date and the date of appropriation of cash dividends and other arrangements for the investors of Northbound Trading will be the same as those for the holders of A Shares of the Company.

Profit Appropriation for Investors of Southbound Trading

For investors of the Shanghai Stock Exchange and Shenzhen Stock Exchange (including enterprises and individuals) investing in the H Shares of the Company listed on Hong Kong Stock Exchange (the "Southbound Trading"), the Company has entered into the Agreement on Appropriation of Cash Dividends of H Shares for Southbound Trading (港股通H股股票現金紅利派發協議) with China Securities Depository and Clearing Corporation Limited, pursuant to which, China Securities Depository and Clearing Corporation Limited, as the nominee of the holders for Southbound Trading, will receive all cash dividends distributed by the Company and distribute the cash dividends to the relevant investors of Southbound Trading through its depositary and clearing system. The cash dividends for the investors of Southbound Trading will be paid in RMB.

Pursuant to the Notice on the Tax Policies Related to the Pilot Program of the Shanghai-Hong Kong Stock Connect (關於滬港股票市場交易互聯互通機制試點有關税收政策的通知) (Caishui [2014] No.81) and the Notice of the Ministry of Finance, State Administration of Taxation and China Securities Regulatory Commission on the Tax Policies Related to the Pilot Program of the Shenzhen-Hong Kong Stock Connect (財政部、國家税務總局、中國證監會關於深港股票市場交易互聯互通機制試點有關税收政策的通知) (Caishui [2016] No. 127) for dividends received by domestic investors from investing in H shares listed on the Hong Kong Stock Exchange through Shanghai-Hong Kong Stock Connect and Shenzhen-Hong Kong Stock Connect, the companies of such H shares shall withhold and pay individual income tax at the rate of 20% on behalf of the investors. For dividends received by domestic securities investment funds from investing in H shares listed on the Hong Kong Stock Exchange through Shanghai-Hong Kong Stock Connect and Shenzhen-Hong Kong Stock Connect, the tax payable shall be the same as that for individual investors. The companies of such H shares will not withhold and pay the income tax of dividends for domestic enterprise investors and those domestic enterprise investors shall report and pay the relevant tax themselves.

REPORT OF THE BOARD OF DIRECTORS

The record date and the date of appropriation of cash dividends and other arrangements for the investors of Southbound Trading will be the same as those for the holders of H Shares of the Company.

As the Company is yet to confirm the date of convening the 2023 annual general meeting, the record date(s) and the period(s) for closure of register for determining the eligibility to attend and vote at the 2023 annual general meeting and the entitlement to the final dividend, the Company will announce such details in the notice of the 2023 annual general meeting upon confirmation thereof. Such notice is expected to be issued to shareholders in late April or May 2024.

PRINCIPAL BUSINESS

The domestic power plants of the Company and its subsidiaries are located in 26 provinces, autonomous regions and municipalities. The Company also has a wholly-owned power plant in Singapore and invested in a power generation company in Pakistan. The core business of the Company is to develop, construct and operate coal-fired and gas-fired power plants, new energy generation projects and supporting ports, shipping, incremental distribution grid and other facilities throughout China and abroad by making use of modern technology and equipment and financial resources available domestically and internationally to provide electricity, heat and integrated energy services to the community.

SUBSIDIARIES AND ASSOCIATES

Please refer to Notes 8 and 9 to the financial statements prepared under the IFRSs for details of the Company's subsidiaries and associates.

BONDS

During the year, the Company successfully issued bonds with a total principal amount of RMB65.0 billion in meeting its operational needs. Please refer to Notes 25 and 29 to the financial statements prepared under the IFRSs for details.

BANK LOANS AND OTHER BORROWINGS

Please refer to Notes 24 and 30 to the financial statements prepared under the IFRSs for details of bank loans and other borrowings of the Company and its subsidiaries as at 31 December 2023.

CAPITALIZED INTERESTS

Please refer to Note 6 to the financial statements prepared under the IFRSs for details of the capitalized interests of the Company and its subsidiaries as at 31 December 2023.

PROPERTIES, PLANTS AND EQUIPMENT

Please refer to Note 7 to the financial statements prepared under the IFRSs for details of properties, plants and equipment of the Company and its subsidiaries as at 31 December 2023.

RESERVES

Please refer to the consolidated statement of changes in equity on pages 138 to 141 of the financial statements prepared under the IFRSs for details of statutory reserves of the Company and its subsidiaries as at 31 December 2023.

PRE-EMPTIVE RIGHTS

According to the articles of the Company and the laws of the PRC, there are no provisions for pre-emptive rights requiring the Company to offer new shares to the existing shareholders of the Company in proportion to their shareholdings.

LARGEST SUPPLIERS AND CUSTOMERS

The five largest suppliers of the Company and its subsidiaries for 2023 were China Huaneng Group Fuel Co., Ltd. ("Huaneng Group", the ultimate controlling shareholder of the Company, holding about 73% of its equity), Huaneng Supply Chain Platform Technology Co., Ltd. (Huaneng Group holds about 35% of its equity), Coal Sales Branch Company of Huaneng Inner Mongolia East Energy Co., Ltd. (Huaneng Group holds 100% of its equity), Huayang New Material Technology Co., Ltd. and Gansu Huating Coal-fired Power Co., Ltd. (Huaneng Group holds about 42% of its equity) respectively. The total purchase from them amounted to approximately RMB81.5 billion, representing approximately 39% of the total purchase of the year. The largest supplier was China Huaneng Group Fuel Co., Ltd., the purchase from which amounted to RMB36.96 billion, representing approximately 18% of the total purchase of the year.

As a domestic power producer, the Company sells the electricity generated by its power plants mainly through local grid operators. The five largest customers of the Company and its subsidiaries for 2023 were State Grid Shandong Electric Power Company, State Grid Jiangsu Electric Power Company, State Grid Zhejiang Electric Power Company, China Southern Power Grid Guangdong Power Grid Co., Ltd. and State Grid Jiangxi Electric Power Company. The combined amount from sales of power to those grid operators was approximately RMB100.462 billion, representing approximately 39.49% of the total sales of power for the year. The largest customers was State Grid Shandong Electric Power Company, and the amount of sale was RMB36.749 billion, representing approximately 14.45% of the total sales of power for the year.

Save as disclosed above, none of the directors, supervisors and their respective close associates (as defined in the Hong Kong Listing Rules) or any shareholders (holding 5% or more of the issued shares of the Company to the best knowledge of the Board) had any interest in the five largest suppliers and customers of the Company mentioned above in 2023.

CONTINUING CONNECTED TRANSACTIONS AND CONNECTED TRANSACTIONS

The following are the continuing connected transactions and connected transactions of the Company in 2023 disclosed under the requirements of the Hong Kong Listing Rules:

1. Continuing Connected Transactions with Huaneng Group, Huaneng Finance and Tiancheng Leasing

The major continuing connected transactions of the Company are those transactions conducted between the Company and its subsidiaries and certain subsidiaries and/or associates of Huaneng Group. Huaneng Group holds a 75% direct interest and a 25% indirect interest in HIPDC. HIPDC, as the immediate controlling shareholder of the Company, holds 32.28% equity interest of the Company. In addition, Huaneng Group holds a 9.91% direct equity interest in the Company, a 3.01% indirect equity interest in the Company through its wholly-owned subsidiary, China Hua Neng Group Hong Kong Limited ("Hua Neng HK"), a 0.84% indirect equity interest in the Company through China Huaneng Group Treasury Management (Hong Kong) Limited ("Huaneng Treasury"), an indirect wholly-owned subsidiary of Huaneng Group, and a 0.06% indirect equity interest in the Company through China Huaneng Finance Corporation Limited ("Huaneng Finance"), a majority-owned subsidiary of Huaneng Group. Huaneng Group and the Company holds approximately 52% and 20% equity interests respectively in Huaneng Finance. Huaneng Tiancheng Financial Leasing Co., Ltd. ("Tiancheng Leasing") is a majority-owned subsidiary of Huaneng Group which in aggregate holds a 80% equity interest, whilst the remaining 20% equity interest is held by the Company. Therefore, Huaneng Group, Huaneng Finance and Tiancheng Leasing are connected persons of the Company and transactions between the Company and the subsidiaries and/or associates of Huaneng Group

REPORT OF THE BOARD OF DIRECTORS

constitute connected transactions of the Company under the Hong Kong Listing Rules. The purposes of the Company to enter into such continuing connected transactions with those connected persons were to meet the operational needs of the Company and to get the most favourable terms and conditions from the market from the Company's perspective. The relevant information regarding the continuing connected transactions are summarized as follows:

(i) Huaneng Group Framework Agreement was entered into between the Company and Huaneng Group on 25 October 2022 for a term commencing on 1 January 2023 and expiring on 31 December 2023. Pursuant to the framework agreement, the Company would conduct the following transactions with Huaneng Group and its subsidiaries and associates on an ongoing basis:

- Due to operational needs, the Company and its subsidiaries have to purchase ancillary equipment and parts which include mainly the raw materials and ancillary equipment and other installation and products relevant to the production operation for the infrastructure construction works for power plants. Pursuant to the Huaneng Group Framework Agreement, the terms and the prices with respect to the purchase of ancillary equipment and parts by the Company and its subsidiaries from Huaneng Group and its subsidiaries and associates are negotiated at arm's length terms, taking into account the then prevailing market conditions; but in any event at the terms and prices no less favourable than those offered to the Company and its subsidiaries by an independent third party for the same or similar type of ancillary equipment and parts. In addition, the payment of such purchases will be settled in cash in arrears, or in accordance with the payment terms agreed by the relevant parties in the contracts to be entered into pursuant to such framework agreement.

  For the year ended 31 December 2023, the cap with respect to the purchase of ancillary equipment and parts by the Company and its subsidiaries from Huaneng Group and its subsidiaries and associates under the Huaneng Group Framework Agreement will not exceed RMB2.1billion. The actual transaction amount for the year ended 31 December 2023 was approximately RMB406 million.

- The Company's main fuel for power generation is coal. Pursuant to the Huaneng Group Framework Agreement, the Company and its subsidiaries will purchase fuel and coal transportation services from Huaneng Group and its subsidiaries and associates at prices and charges calculated by reference to RMB/ton and the actual weight of carriage, with arm's length terms taking into account the then prevailing market conditions, and in any event the terms of the purchases of coal and the transportation services shall be no less favourable than those offered by independent third parties to the Company and its subsidiaries for the same or similar type of fuel supply or transportation services.

  Pursuant to the Huaneng Group Framework Agreement, the cap for the purchase of fuel and transportation service by the Company and its subsidiaries from Huaneng Group and its subsidiaries and associates in 2023 shall be RMB120.9 billion. The actual transaction amount for the year ended 31 December 2023 was approximately RMB78.079 billion.

- For operational needs, the Company and its subsidiaries have to lease facilities, land and office spaces (mainly power transmission and transformation assets, vessels, power plants land and office spaces, etc.) from Huaneng Group and its subsidiaries and associates. Pursuant to the Huaneng Group Framework Agreement, the terms and the prices with respect to the leasing of facilities, land and office spaces by the Company and its subsidiaries from Huaneng Group and its subsidiaries and associates are negotiated at arm's length terms, taking into account the then prevailing market conditions; but in any event at the leasing terms and prices no less favourable than those offered to the Company and its subsidiaries by independent third parties for the leasing of the same or similar type of facilities, land and office spaces. In addition, the payment of such purchases will be settled in cash, or in accordance with the payment terms agreed by the relevant parties in the contracts to be entered into pursuant to such framework agreement.

The cap with respect to the leasing of facilities, land and office spaces for 2023 by the Company and its subsidiaries from Huaneng Group and its subsidiaries and associates under the Huaneng Group Framework Agreement will not exceed RMB300 million. The actual transaction amount for the year ended 31 December 2023 was approximately RMB207 million.

- With respect to provision of technical services, engineering contracting services and other services to the Company and its subsidiaries by Huaneng Group and its subsidiaries and associates, it mainly includes the provision of fuel management service relevant to power plants, maintenance services for power plants' monitoring systems, real-time consolidation of project data, trial run of generating units, supervision of manufacture of facilities, contracting of construction works in progress and insurance services by Huaneng Group and its subsidiaries and associates to the Company and its subsidiaries.

  Pursuant to the Huaneng Group Frame work Agreement, the terms and the prices of transactions with respect to technical services, engineering contracting services and other services from Huaneng Group and its subsidiaries and associates are negotiated at arm's length terms, taking into account the then prevailing market conditions; but in any event at the terms and prices no less favourable than those offered to the Company and its subsidiaries by independent third parties for the same or similar types of technical services, engineering contracting services and other services. In addition, the payment of consideration will be settled in cash in arrears, or in accordance with the payment terms agreed by the relevant parties in the contracts to be entered into pursuant to the framework agreement.

  The amount payable by the Company and its subsidiaries to Huaneng Group and its subsidiaries and associates with respect to technical services, engineering contracting services and other services for 2023 under the Huaneng Group Framework Agreement will not exceed RMB9.5 billion. The actual transaction amount for the year ended 31 December 2023 was approximately RMB2.337 billion.

- The provision of entrusted sale of electricity and related services by Huaneng Group and its subsidiaries and associates to the Company and its subsidiaries involves mainly Huaneng Group and its subsidiaries and associates using of power generation quota of the Company and its subsidiaries for substituted power generation. Pursuant to the Huaneng Group Frame work Agreement, the terms and prices with respect to the provision of aforesaid entrusted sale and related services by Huaneng Group and its subsidiaries and associates to the Company and its subsidiaries are to be negotiated at arm's length terms, taking into account the then prevailing market conditions, but in any event at the terms and prices no less favourable than those offered to the Company and its subsidiaries by an independent third party for the same or similar type of services.

REPORT OF THE BOARD OF DIRECTORS

Pursuant to the Huaneng Group Framework Agreement, the cap with respect to the provision of entrusted sale of electricity and related services to the Company and its subsidiaries from Huaneng Group and its subsidiaries and associates for 2023 was RMB400 million. The actual transaction amount for the year ended 31 December 2023 was RMB0.

- The provision of entrusted sale and related services to Huaneng Group and its subsidiaries and associates by the Company and its subsidiaries involves mainly the use of power generation quota of Huaneng Group and its subsidiaries and associates by the Company and its subsidiaries for substituted power generation. Pursuant to the Huaneng Group Framework Agreement, the terms and prices with respect to the provision of aforesaid entrusted sale and related services from Company and its subsidiaries to Huaneng Group and its subsidiaries and associates are to be negotiated at arm's length terms, taking into account the then prevailing market conditions, but in any event at the terms and prices no less favourable than those offered to the Company and its subsidiaries by an independent third party for the same or similar type of services.

  Pursuant to the Huaneng Group Framework Agreement, the cap with respect to the provision of entrusted sale of electricity and related services by the Company and its subsidiaries to Huaneng Group and its subsidiaries and associates for 2023 was RMB300 million. The actual transaction amount for the year ended 31 December 2023 was RMB0.

- To be more cost-efficient in management, the Company's subsidiary(ies) will sell products and related services (mainly coal, transportation and port services) to Huaneng Group and its subsidiaries and associates at coal prices and charges calculated by reference to RMB/ton and the actual weight of carriage, with arm's length terms taking into account the then market conditions, and in any event the terms of the purchases of coal and other related products shall be no less favourable than those offered by independent third parties to the Company for the same or similar type of coal supply and other related products.

  Pursuant to the Huaneng Group Framework Agreement, the cap with respect to the sale of products and related services by the Company to Huaneng Group and its subsidiaries and associates for 2023 was RMB800 million. The actual transaction amount for the year ended 31 December 2023 was approximately RMB404 million.

- The Company and its subsidiaries purchases heat products and related services from Huaneng Group and its subsidiaries and associates, which includes the purchase of industrial steam, hot water and other thermal products produced by power plants and heating enterprises, and the entrustment to Huaneng Group and its subsidiaries and associates to sell industrial steam, hot water and other thermal products, and pay the corresponding service fees to counterparties.

  Pursuant to the Huaneng Group Framework Agreement, the cap of transaction amount with respect to the purchase of heat and related services by the Company and its subsidiaries from Huaneng Group and its subsidiaries and associates in 2023 is RMB200 million. The actual transaction amount for the year ended 31 December 2023 was approximately RMB84 million.

- The Company and its subsidiaries sell heat products and related services to Huaneng Group and its subsidiaries and associates, mainly includes the sales of industrial steam, hot water and other thermal products by the Company's power plants and heating enterprise, and the acceptance of the entrustment by Huaneng Group and its subsidiaries and associates to sell industrial steam, hot water and other thermal products on their behalf, and charge counterparties for the service fees.

Pursuant to the Huaneng Group Framework Agreement, the cap of the transaction amount with respect to the sale of heat and related services by the Company and its subsidiaries to Huaneng Group and its subsidiaries and associates in 2023 is RMB400 million. The actual transaction amount for the year ended 31 December 2023 was approximately RMB229 million.

- The Company and its subsidiaries purchase carbon emission reduction resources and related services from Huaneng Group and its subsidiaries and associates, which includes the purchase of carbon allowances, State-Certified Voluntary Emission Reduction (CCER), green certificates and carbon emission reduction related services.

  Pursuant to the Huaneng Group Framework Agreement, the cap of the transaction amount with respect to the purchase of carbon emission reduction resources and related services by the Company and its subsidiaries from Huaneng Group and its subsidiaries and associates in 2023 is RMB900 million. The actual transaction amount for the year ended 31 December 2023 was approximately RMB58 million.

- The Company and its subsidiaries sell carbon emission reduction resources and related services to Huaneng Group and its subsidiaries and associates, which includes the sale of carbon allowances, CCER, green certificates and carbon emission reduction related services.

  Pursuant to the Huaneng Group Framework Agreement, the cap of the transaction amount with respect to the sale of carbon emission reduction resources and related services by the Company and its subsidiaries to Huaneng Group and its subsidiaries and associates in 2023 is RMB500 million. The actual transaction amount for the year ended 31 December 2023 was approximately RMB279 million.

- Pursuant to Huaneng Group Framework Agreement, (i) borrowing trust loans is direct borrowing of trust loans by the Company and its subsidiaries from Huaneng Group and its subsidiaries and associates without the involvement of any agent bank as an intermediary, whereas (ii) accepting loans is primarily organized between Company and its subsidiaries and Huaneng Group and its subsidiaries and associates with a trustee or agent bank acting as an intermediary (entrusted loan), or through the mode of direct transaction. Trust loans and loans are obtained by the Company and its subsidiaries from or through Huaneng Group and its subsidiaries and associates on normal commercial terms which are comparable to or more favourable than those available from independent third parties for similar services in the PRC and that no security is granted over the assets of the Company and its subsidiaries in respect of such services.

  Pursuant to Huaneng Group Framework Agreement, the cap of the amount of interest arising from the transactions (i.e. interest arising from borrowing of the relevant trust loans) of the trust loans borrowed for 2023 is RMB800 million and the transaction amount (i.e. the amount of the loans accepted) of the loans received for 2023 is RMB20 billion or its equivalent in foreign currency (maximum daily balance of the loan). For the year ended 31 December 2023, the actual interest incurred from borrowing of the relevant trust loans was approximately RMB415 million and the actual maximum daily balance (i.e. the amount of the loans accepted) of the loans received was approximately RMB4,164 million.

REPORT OF THE BOARD OF DIRECTORS

(ii) On 26 October 2021, the Company entered into the Huaneng Finance Framework Agreement (the "Huaneng Finance Framework Agreement") with Huaneng Finance for the purpose of governing the conduct of the continuing connected transactions between the Company and Huaneng Finance from 1 January 2022 to 31 December 2024. Taking into account of the fact that Huaneng Finance can provide preferential loan support to the energy supply and clean energy project construction of the Company and the Company's business development needs, the Company proposed to increase the loan advancement cap with Huaneng Finance. Accordingly, on 25 October 2022, the Company entered into the supplemental agreement to Huaneng Finance Framework Agreement ("Supplemental Agreement to Huaneng Finance Framework Agreement") with Huaneng Finance, increasing the maximum outstanding balance (on daily basis) of the Company and its subsidiaries of loans borrowed from Huaneng Finance RMB23 billion (or its equivalent in foreign currency) to RMB33 billion (or its equivalent in foreign currency) for the period from 1 January 2023 to 31 December 2024.

Pursuant to the Huaneng Finance Framework Agreement, the Company from time to time places deposits with Huaneng Finance at rates which are no less favourable than the rates available from independent third parties for provision of similar services in the PRC.

Pursuant to the Huaneng Finance Framework Agreement, during the period from 1 January 2023 to 31 December 2023, the outstanding balances of the deposits to be placed with Huaneng Finance on a daily basis shall not exceed RMB20 billion (or its equivalent in foreign currency). For the year ended 31 December 2023, the maximum outstanding balance of the deposits placed with Huaneng Finance by the Company and its subsidiaries was approximately RMB19.9997 billion.

Pursuant to the Huaneng Finance Framework Agreement, the Company and its subsidiaries also utilise the note discounting services provided by Huaneng Finance at a service fee lower than the service fees payable to independent third parties for provision of similar services in the PRC. The interest rates on loan advancement services to be offered by Huaneng Finance to the Company and its subsidiaries will primarily be based on the benchmark interest down within the range from 5% to 10% basing on the rate by PBOC for the contemporary period, whilst the prices of the note discounting will be no less favourable than those offered by other major domestic commercial banks.

Pursuant to the Huaneng Finance Framework Agreement, total transaction amount relating to the note discounting services to be provided by Huaneng Finance for 2023 will be RMB4 billion. The actual transaction amount relating to the note discounting services for the year ended 31 December 2023 was RMB0.

Pursuant to the Supplemental Agreement to Huaneng Finance Framework Agreement, the maximum loan outstanding balance (on daily basis) for 2023 will be RMB33 billion (or its equivalent in foreign currency). The actual maximum loan outstanding balance for the year ended 31 December 2023 was approximately RMB24.893 billion.

(iii) On 25 October 2022, the Company entered into the Tiancheng Leasing framework agreement ("Tiancheng Leasing Framework Agreement") with Tiancheng Finance for the purpose of governing the conduct of continuing connected transactions between the Company and Tiancheng Leasing from 2023 to 2025. Tiancheng Leasing Framework Agreement shall be effective from 1 January 2023 to 31 December 2025.

Pursuant to the Tiancheng Leasing Framework Agreement, the finance lease business conducted by the Company and its subsidiaries with Tiancheng Leasing includes direct lease and sale-and-leaseback. The amount of the lease rent will be determined by reference to the total purchase price of the relevant equipment and the interest agreed by the parties. The interest rate shall be determined by the parties after arm's length negotiations, taking into account the market conditions and referring to the benchmark lending rates for term loans promulgated by the PBOC from time to time, and shall be no less favourable than those offered to the Company by domestic independent third parties for the provision of similar services. Handling fee (if any) may be charged by Tiancheng Leasing from the Company and its subsidiaries at the time of conclusion of the finance leases under the Tiancheng Leasing Framework Agreement on terms no less favourable than those offered to the Company and its subsidiaries by independent third parties and at such rate as fixed by reference to the charge rates of other major financial institutions in the PRC for finance leases of assets of the same or similar type or the applicable rate (if any) published by the PBOC from time to time in relation to such services and as set forth in the relevant written agreements. The lease interest rate will be decided at the commencement of each finance lease executed pursuant to the Tiancheng Leasing Framework Agreement. In the event the PBOC adjusts the annual benchmark rate for RMB-denominated term loans during the term of relevant finance lease, the lease interest rate will be adjusted accordingly. The transaction amounts shall be paid at the end of each quarter or year or at such other intervals as agreed by the parties.

Under the Tiancheng Leasing Framework Agreement, the estimated amount of connected transactions between the Company and its subsidiaries and Tiancheng Leasing from 2023 to 2025 (the maximum daily balances of the lease principal) is RMB10 billion per year, and the annual amount of the lease interest (including interest expenses and handling fees) is RMB490 million. For purposes of the Hong Kong Listing Rules, the Direct Lease(s) involve(s) "acquisition" while the Sales and Leaseback constitute "disposal". The transaction amount contemplated under the direct lease category of the Tiancheng Leasing Framework Agreement between the Company and its subsidiaries and Tiancheng Leasing for the period from 2023 to 2025 at RMB8 billion each year, and the transaction amount contemplated under the sales and leaseback category of the Tiancheng Leasing Framework Agreement between the Company and its subsidiaries and Tiancheng Leasing for the period from 2023 to 2025 at RMB2 billion each year.

For the year ended 31 December 2023, the actual amount of maximum daily balances of the lease principal under the direct ease between the Company and its subsidiaries and Tiancheng Leasing was approximately RMB2.565 billion, and the actual amount of lease interest was approximately RMB61 million, and the maximum daily balances of the lease principal under the Sales and Leaseback between the Company and its subsidiaries and Tiancheng Leasing was approximately RMB562 million, and the lease interest was approximately RMB12 million.

2. Continuing Connected Transactions Under the Letter of Support

The Group securitised certain of its infrastructure assets (that is, Laiwu Project, an electricity power plant located in Laiwu, Shandong Province, the PRC) by way of participating in the issuance of the asset-backed securities ("ABS") on the Shanghai Stock Exchange, the expected maturity of the ABS is 23 years, the size of which is expected to be approximately RMB7,694 million. The following material steps (in chronological order) shall be effected under the ABS scheme: (i) a partnership shall be established in the PRC by: Shandong Silk Road International Electricity Co., Ltd. ("Silk Road International"), Huadian Jintai (Beijing) Investment Fund Management Co., Ltd. ("Huadian Jintai") and Huaneng Shandong Power Generation Co., Ltd. ("Shandong Company", together with Silk Road International and Huadian Jintai, collectively referred to as "Partners"); (ii) the ABS shall be issued on the Shanghai Stock Exchange for subscription by eligible investors. Upon the ABS issuance, Huadian Jintai shall transfer the entirety of its interest in the Partnership to the ABS, and the entirety of

REPORT OF THE BOARD OF DIRECTORS

the proceeds of the ABS issuance shall be used as capital contribution to the Partnership. Silk Road International and Shandong Company shall also make capital contributions to the Partnership; (iii) after all Partners have duly made capital contributions to the partnership, the partnership shall acquire from Shandong Company the equity interest in Huaneng Laiwu Power Generation Co., Ltd.("Laiwu Project Company") held by it and (iv) after acquiring interest in Laiwu Project Company, the partnership shall extend the laiwu shareholder loan to Laiwu Project Company, which shall replace Laiwu Project Company's existing indebtedness and shall replenish its working capital. To secure the repayment of the laiwu shareholder loan, Laiwu Project Company shall pledge, among others, all operating revenue from Laiwu Project (including but not limited to revenue from sales of power, sales of heat, and sales of coal ash) in favour of the partnership. In addition: (i) Shandong Company, the designated operation support institution for Laiwu Project Company under the ABS scheme, shall provide the operation support and bear the cash interchange obligation; and (ii) the Company shall execute the Letter of Support in favour of Shandong Company, pursuant to which the Company shall provide the liquidity support to Shandong Company to cover the operation support and cash interchange obligation in the event where Shandong Company fails to do so.

Accordingly, on 10 October 2023, the Company issued a letter of support to Shandong Company, pursuant to which, the Company agrees to provide liquidity support in favour of Shandong Company in respect of Shandong Company's obligation: (i) to provide the capital support and the performance support; and (ii) to perform the cash interchange obligation, in the event where Shandong Company fails to do so. The proposed term shall be 23 years from 2023, that is, the term of the liquidity support provided by the Company shall expire in 2046. The proposed annual cap shall be RMB9,529 million each year (from 2023 until 2046, being the expiry year of the term of the Letter of Support), which is the sum of the estimated amount of RMB5,916 million for the performance support; and the estimated amount of RMB3,613 million for the cash interchange obligation support.

As disclosed above, Huaneng Group is the ultimate controlling shareholder of the Company. Huaneng Group holds a 20% interest in Shandong Company. Therefore, under the Hong Kong Listing Rules, Shandong Company is an associate of Huaneng Group and a connected person of the Company. Consequentially, the transactions under the letter of support constitutes continuing connected transactions of the Company under chapter 14A of the Hong Kong Listing Rules.

By participating in the ABS, the Company will be able to effectively revitalise its infrastructure assets, enhance its operation and management, and promote the transformation and development of business and operation of the Group. Further, the ABS represents an alternative financing method for the Company, which will diversify the fundraising methods and platforms of the Group and reduce its reliance on traditional debt financing channels. It will also enhance the Company's rolling investment capability and sustainable operation, which will be beneficial to the Group's long-term performance. The Company's participation in the ABS will bring in funding, improve the Company's balance sheet and enhance its investment capacity. The liquidity support will be conducive for the ABS to obtain the recognition of eligible investors as well as to reduce the cost of issuance.

Please refer to the announcement of the Company dated 10 October 2023 for further details in connection with the issue of ABS, the principal terms of the letter of support and the transactions contemplated thereunder.

3. Provision of renewable entrusted loans to connected subsidiaries

On 2 November 2022, the Company entered into a framework agreement with Shandong Company and Huaneng Chaohu Power Generation Co., Ltd. ("Chaohu Power") respectively, stipulating that the Company will provide a renewable entrusted loan of not more than RMB12 billion to Shandong Company, and a renewable entrusted loan of not more than RMB1.2 billion to Chaohu Power. The aforesaid loans have no fixed term, the concrete terms of which are subject to the renewable entrusted loan agreements to be actually signed. The extended loan term is one year as a cycle, and the initial loan term shall start from the date of advancement. The purpose of the loan is to guarantee the supply of thermal power enterprises. The loan interest rate under the agreement shall be determined by the Company, and a fixed interest rate shall be adopted. The annual interest rate shall be the total amount of upstream fund raising costs and related taxes, etc., and the actual signed renewable entrusted loan interest rate shall prevail. As disclosed above, Shandong Company is a connected subsidiary of the Company. Chaohu Power is controlled by the Company which holds a 60% interest in it while another 10% of its interests is held by a wholly owned subsidiary of Huaneng Group and the remaining 30% is held by Huaihe Energy Power Group Co., Ltd. Accordingly, Chaohu Power is a connected subsidiary of the Company. Therefore, provision of renewable entrusted loans to Shandong Company and Chaohu Power constitutes continuing connected transactions.

For the year ended 31 December 2023, the amount of renewable entrusted loans provided by the Company to Shandong Company amounted to approximately RMB11.750 billion and the amount of entrusted loans provided by the Company to Chaohu Power amounted to approximately RMB1 billion.

4. Continuing Connected Transactions with Temasek and its subsidiaries and associates

Upon the completion of the acquisition of SinoSing Power Pte. Ltd. by the Company, TPGS Green Energy Pte. Ltd. became an indirect non-wholly owned subsidiary of the Company, of which 75% is owned by Tuas Power Ltd., an indirect wholly-owned subsidiary of the Company, and the remaining 25% is owned by Gas Supply Pte. Ltd., which is a wholly-owned subsidiary of Temasek Holdings (Private) Limited ("Temasek").Temasek therefore became a substantial shareholder of a subsidiary of the Company and a connected person of the Company, and the on-going transactions between certain subsidiaries of the Company and the associates of Temasek ("Continuing Connected Transactions with Associates of Temasek") became continuing connected transaction of the Company under the Hong Kong Listing Rules.

The Company considers that Temasek meets the criteria for a passive investor under Rule 14A.100 of the Hong Kong Listing Rules. As such, any connected transactions or continuing connected transactions of a revenue nature in the ordinary and usual course of our business and on normal commercial terms with an associate of Temasek, pursuant to Rule 14A.99 of the Hong Kong Listing Rules, will be exempt from reporting, annual review, announcement and independent shareholders' approval requirement under the Hong Kong Listing Rules. This exemption will be applicable to, amongst other things, the types of Continuing Connected Transactions with Associates of Temasek.

If the exemption is no longer applicable in relation to the Continuing Connected Transactions with Associates of Temasek, the Company will comply with the applicable reporting, annual review, announcement and independent shareholders' approval requirements.

REPORT OF THE BOARD OF DIRECTORS

CONNECTED TRANSACTIONS

1. Deemed Disposal

On 12 December 2023, the Company and enter into a capital increase agreement ("Capital Increase Agreement") with Huaneng Liaoning Clean Energy Limited Liability Company ("Liaoning Clean Energy") and Huaneng Gongrong No.1 (Tianjin) Equity Investment Fund Partnership (Limited Partnership) ("Huaneng Gongrong Fund"), pursuant to which, Huaneng Gongrong Fund shall contribute RMB1.5 billion to Liaoning Clean Energy. ("Capital Increase"). The purpose of the Capital Increase is to introduce a strategic investor in order to reduce the asset-liability ratio and to improve the internal governance structure. As disclosed above, Huaneng Group is a connected person of the Company. The fund manager of Huaneng Gongrong Fund is Huaneng Invesco Private Equity Management Company Limited ("Huaneng Invesco"), which is an indirectly owned subsidiary of Huaneng Group. Huaneng Group also holds 50.975% limited partnership interest in Huaneng Gongrong Fund; therefore, the financial results of the Huaneng Gongrong Fund were consolidated into those of Huaneng Group. Pursuant to chapter 14A of the Hong Kong Listing Rules, Huaneng Gongrong Fund is an associate of Huaneng Group and a connected person of the Company. The Capital Increase constitutes a connected transaction of the Company. As the Capital Increase resulted in a decrease of interests of the Company, the Capital Increase constitutes a deemed disposal under Rule 14.29 of the Hong Kong Listing Rules. Following the completion of the Capital Increase, the registered capital of Liaoning Clean Energy was increased to RMB5,481,424,600 from RMB4,251,592,800. Immediately after the completion of the Capital Increase, the Company and Huaneng Gongrong Fund each holds 77.56% and 22.44% equity interest in the Liaoning Clean Energy respectively. Liaoning Clean Energy became a connected subsidiary of the Company, and its financial results were consolidated into those of the Company. Please refer to the announcements of the Company dated 10 October 2023 and 22 December 2023.

2. Equity Transfer

To optimize the management of the Company's assets and promote the Company's high-quality development, the Company entered into an equity transfer agreement ("Equity Transfer Agreement") with Huaneng Group and Huaneng Lancang River Hydropower Inc. ("Huaneng Hydropower") on 6 September 2023. Pursuant to the Equity Transfer Agreement, Huaneng Hydropower proposed to acquire a 100% equity interest in Huaneng Sichuan Energy Development Co., Ltd. ("Sichuan Energy Development Company") held by Huaneng Group and the Company in aggregate by way of non-public agreed transfer, of which the Company proposed to transfer a 49% equity interest in Sichuan Energy Development Company by way of non-public agreed transfer at a price of RMB4,203.4808 million to Huaneng Hydropower. As disclosed above, Huaneng Group is a connected person of the Company. Huaneng Hydropower is a subsidiary therefore an associate of Huaneng Group and the transaction contemplated under the Equity Transfer Agreement constitutes a connected transaction of the Company. Upon completion of the Transaction, the Company no longer holds any equity interest in Sichuan Energy Development Company. Please refer to the announcement of the Company dated 7 September 2023 for further details in connection with the Equity Transfer Agreement and the transaction contemplated thereunder.

3. Capital Increase in Shidaowan Nuclear

On 25 July 2023, the Company entered into a capital increase agreement (the "Capital Increase Agreement") with Huaneng Shidaowan Nuclear Power Development Co., Ltd. ("Shidaowan Nuclear"), Huaneng Nuclear Power Development Co., Ltd. ("Huaneng Nuclear"), State Nuclear Power Technology Co., Ltd. ("State Nuclear"), and HIPDC (together with Huaneng Nuclear and State Nuclear, collectively referred to as "Other SDW Shareholders") and Shidaowan Nuclear, pursuant to which the Company and Other SDW Shareholders shall subscribe the additional registered capital of Shidaowan Nuclear by making cash capital contributions pro rata to their existing equity holdings in Shidaowan Nuclear. Based on the information publicly available to the Company, as of the date of the relevant announcement, State Nuclear and its ultimate beneficial owners is a third party independent of the Company and its connected persons under the Hong Kong Listing Rules. Huaneng Nuclear is a wholly-owned subsidiary of Huaneng Group. Huaneng Nuclear holds a 30% equity interests in Shidaowan Nuclear. According to the relevant provisions of the Hong Kong Listing Rules, HIPDC is a connected person of the Company, while each of Huaneng Nuclear and Shidaowan Nuclear is an associate of the connected person of the Company. The transaction under the Capital Increase Agreement constitutes a connected transaction of the Company.

The Company and Other SDW Shareholders shall each subscribe for and contribute to the increase in the registered capital of Shidaowan Nuclear as follows.

Shareholders	**Capital contribution** (RMB ten thousand)	**Subscription amount** (RMB ten thousand)
The Company	12,600	12,600
Huaneng Nuclear	16,800	16,800
State Nuclear	14,000	14,000
HIPDC	12,600	12,600
Total	56,000	56,000

The registered capital and shareholding structure of Shidaowan Nuclear following the completion of the Capital Increase are as follows:

Shareholders	**Capital contribution** (RMB ten thousand)	**Shareholding percentage**
The Company	119,475	22.50%
Huaneng Nuclear	159,300	30%
State Nuclear	132,750	25%
HIPDC	119,475	22.50%
Total	531,000	100%

The Capital Increase will expand Shidaowan Nuclear's registered capital which conducive to project financing and ensure the sufficiency of the working capital of the projects. The transaction under the Capital Increase Agreement aligns with the Company's development strategies and targets and facilitates the Company's low-carbon transformation and increase the installed capacity of clean energy. Please refer to the announcement of the Company dated 26 July 2023 for further details on the major terms of the Capital Increase Agreement and the transaction contemplated thereunder.

REPORT OF THE BOARD OF DIRECTORS

4. Provision of Counter-Guarantee

On 10 February 2014, China Huaneng Group Fule Co., Ltd. ("Group Fuel Company") and ICBC Leasing Co., Ltd. ("ICBC Leasing") entered into the Guarantee Contract, pursuant to which, Group Fuel Company, as guarantor, shall provide a guarantee to ICBC Leasing with respect to the payment obligation and/or liabilities of LE Shipping under the Finance Leases, where the maximum guarantee amount is RMB4,779 million. As at 30 June 2023, the remaining balance of the maximum guarantee amount is RMB1,349 million. On 25 July 2023, Hainan Company, a subsidiary of the Company, entered into a counter-guarantee contract (the "Counter-Guarantee Contract") with the Group Fuel Company, pursuant to which Hainan Company agreed to provide the Counter-Guarantee in respect of the obligations of Group Fuel Company under the Guarantee Contract, in proportion to Hainan Company's 40% interest in LE Shipping where the maximum amount of the counter-guarantee will not exceed RMB540 million. To the best knowledge and belief of the directors of the Company, ICBC Leasing is a third party independent of the Company and its connected persons as at the date of relevant announcement. As disclosed above, Huaneng Group is a connected person of the Company. Group Fuel Company is a subsidiary of Huaneng Group. Pursuant to Chapter 14A of the Hong Kong Listing Rules, Group Fuel Company is a connected person of the Company, and the transaction contemplated under the Counter-Guarantee Contract constitutes a connected transaction of the Company. Hainan Company, as a 40% shareholder of LE Shipping, proposed to provide a counter-guarantee, which is pro rata to its shareholding in LE Shipping, to Group Fuel Company against Group Fuel Company's liabilities under the Guarantee Contact where the maximum amount of the counter-guarantee will not exceed RMB540 million. The Directors are of the view that the risk to be taken by the Company under the provision of counter-guarantee is limited and will be reducing gradually as LE Shipping has been able to repay the principal and interest on time due to its relatively favorable profit performance in recent years, while the business of leased vessels will be enjoying the benefit of low-cost operations after the full payment of principal and interest. The proposed provision of guarantee will not have a significant impact on the financial position of the Company and there are no foreseeable circumstances where the interests of the Company and its Shareholders will be harmed. Please refer to the announcement dated 26 July 2023 for other details on the major terms of the Counter-Guarantee Contract and the transaction contemplated thereunder.

5. Capital Increase in Huaneng Finance

On 25 April 2023, the Company and Huaneng Group, Northern United Power Co., Ltd. ("Northern Co."), HIPDC, Huaneng Capital Services Co., Ltd. ("Huaneng Capital"), Huaneng Hydropower, Huaneng Energy & Communications Holdings Co., Ltd. ("Energy & Communication Co."), Xi'an Thermal Power Research Institute Co., Ltd.("Xi'an Institute") and Huaneng Renewables Co., Ltd.("Renewables Co."), together with Huaneng Group, Northern Co., HIPDC, Huaneng Capital, Huaneng Hydropower, Energy & Communication Co., and Xi'an Institute, (collectively referred to as "Other Shareholders of Huaneng Finance") and Huaneng Finance entered into a capital increase agreement, pursuant to which, the Company and Other Shareholders of Huaneng Finance will be subscribed to the new registered capital of Huaneng Finance in cash in the same proportion according to their respective shareholding ratios ("Capital Increase in Huaneng Finance"). As disclosed above, Huaneng Group is a connected person of the Company, whereas Huaneng Finance and Other Shareholders of Huaneng Finance are all subsidiaries of Huaneng Finance and therefore associates of a connected person of the Company under the Hong Kong Listing Rules. Accordingly, Capital Increase in Huaneng Finance constitutes a connected transaction of the Company. The table below sets out the capital contribution from the Company and Other Shareholders of Huaneng Finance and their respective shareholding percentage before and after the completion of the Capital Increase in Huaneng Finance.

Shareholders of Huaneng Finance	Newly increased registered capital subscribed (RMB ten thousand)	Respective shareholding percentage before completion of the capital increase	Respective shareholding percentage after completion of the capital increase
The Company	40,000	20%	20%
Huaneng Group	104,000	52%	52%
Northern Co.	20,000	10%	10%
HIPDC	11,166.67	5.58%	5.58%
Huaneng Capital	8,833.33	4.42%	4.42%
Huaneng Hydropower	6,666.67	3.33%	3.33%
Energy & Communication Co.	4,000	2%	2%
Xi'an Institute	3,333.33	1.67%	1.67%
Renewables Co.	2,000	1%	1%

Contribution to the capital increase will generate stable investment returns which will yield continuing cash dividend for the Company and will motivate Huaneng Finance to provide better finance services to the Company and its subsidiaries. Please refer to the announcement of the Company dated 26 April 2023 for further details on the major terms of the capital increase agreement and the transaction contemplated thereunder.

In accordance with the requirements of Rule 14A.55 & 14A.71 of the Hong Kong Listing Rules, the Independent Non-executive Directors of the Company confirmed that the continuing connected transactions above to which the Company was a party:

(i) had been entered into by the Company and/or any of its subsidiaries in the ordinary and usual course of its business;

(ii) had been entered into on normal commercial terms or better; and

(iii) had been entered into according to the agreements governing them on terms that are fair and reasonable and in the interests of the shareholders of the Company as a whole.

Further, the Company has engaged its external auditor to report on the Company's continuing connected transactions in accordance with Hong Kong Standards on Assurance Engagements 3000 (Revised) "Assurance Engagements Other Than Audits or Reviews of Historical Financial Information" and with reference to Practice Note 740 "Auditor's Letter on Continuing Connected Transactions under the Hong Kong Listing Rules" issued by the Hong Kong Institute of Certified Public Accountants. In accordance with Rule 14A.71 of the Hong Kong Listing Rules, the Board of the Company confirmed that the external auditor of the Company had made a confirmation statement on the issues mentioned in Rule 14A.56 of the Hong Kong Listing Rules. The external auditor has issued an unqualified letter containing their findings and conclusions in respect of the continuing connected transactions set out in item 1 above.

Several related party transactions as disclosed in Note 36 to the financial statements prepared in accordance with the IFRSs fall under the definition of "continuing connected transaction" in Chapter 14A of the Hong Kong Listing Rules. The Company has complied with the disclosure requirements regarding connected transactions in accordance with Chapter 14A of the Hong Kong Listing Rules.

REPORT OF THE BOARD OF DIRECTORS

BUSINESS COMPETITION WITH CONTROLLING SHAREHOLDERS

The ultimate controlling shareholder of the Company, Huaneng Group and its subsidiaries, are also engaged in the power industry in China. To avoid business competition, Huaneng Group and the Company have already entrusted mutually to manage electric power assets in some regions.

To support the business development of the Company, Huaneng Group has committed to avoiding business competition during its initial public offerings at home and abroad. On 17 September 2010, the Company received an undertaking from the Huaneng Group regarding further avoidance of business competition. On the premises of continuing the undertaking previously provided, Huaneng Group further undertook that: (1) it should treat the Company as the only platform for integrating the conventional energy business of Huaneng Group; (2) with respect to the conventional energy business assets of Huaneng Group located in Shandong Province, Huaneng Group undertook that it would take approximately 5 years to improve the profitability of such assets and when the terms become appropriate, it would inject those assets into the Company. The Company had a right of first refusal to acquire from Huaneng Group the newly developed, acquired or invested projects which are engaged in the conventional energy business of Huaneng Group located in Shandong Province; (3) with respect to the other non-listed conventional energy business assets of Huaneng Group located in other provincial administrative regions, Huaneng Group undertook that it would take approximately five years, and upon such assets meeting the conditions for listing, to inject such assets into the Company, with a view to supporting the Company's continuous and stable development; and (4) Huaneng Group would continue to perform each of its undertakings to support the development of its listed subsidiaries.

On 28 June 2014, with a view to further clarify the scope of the relevant agreement and in line with the requirements under the "Regulatory Guidelines for Listed Companies No. 4 – Undertakings and performance by Listed Companies and Listed Companies' de facto Controllers, Shareholders, Related Parties and Acquirers", and taking into account the actual situation, Huaneng Group further enhanced the aforesaid non-compete undertaking as follows:

1. the Company would be the sole platform for integrating the conventional energy business of Huaneng Group;

2. with respect to the conventional energy business assets of Huaneng Group located in Shandong Province, Huaneng Group undertook that it would, by the end of 2016, inject into the Company such assets of which the profitability should have been improved and meet with the requirements for injecting into a listed company (such as those assets with clean titles, the injection of which should not reduce the earnings per share of Huaneng Power, of no material non-compliance issues, with positive effect on preservation of and value appreciation of state owned assets, and wavier of pre-emptive rights being obtained from other shareholders of the assets), in addition, the Company should have the right of first refusal to acquire from Huaneng Group the newly developed, acquired or invested projects as engaged in the conventional energy business of Huaneng Group located in Shandong Province;

3. with respect to the other non-listed conventional energy business assets of Huaneng Group located in other provincial administrative regions, Huaneng Group undertook that it would, by the end of 2016, inject into the Company such assets of which the profitability should have been improved and meet with the requirements for injecting into a listed company (such as those assets with clear titles, the injection of which should not reduce the earnings per share of Huaneng Power, of no material non-compliance issues, with positive effect on preservation of and value appreciation of state owned assets, and wavier of pre-emptive rights being obtained from other shareholders of the assets), so as to support a sustainable and stable development of the Company;

4. Huaneng Group would continue to perform each of its aforesaid undertakings in order to support the development of its subordinated listed companies.

The items (1) and (4) above are long term undertakings and are being currently performed. The Items (2) and (3) are undertakings with terms and conditions and have been fulfilled.

Currently, the Company has 15 directors and 5 of them have positions in Huaneng Group. According to the Articles of Association of the Company, in case a conflict of interest arises, the relevant directors shall abstain from voting in the relevant resolutions. Therefore, the operation of the Company is independent from Huaneng Group, and the operation of the Company is conducted for its own benefit.

PURCHASE, SALE OR REDEMPTION OF SHARES OF THE COMPANY

The Company and its subsidiaries did not sell, purchase or redeem any shares or other securities of the Company in 2023.

REPORT OF THE BOARD OF DIRECTORS

DIRECTORS OF THE COMPANY

The directors of the Company during the year were as follows:

Name of Director	Position	Date of appointment
Wang Kui	Chairman, executive Director	29 August 2023
Wang Zhijie	Vice Chairman, executive Director	5 December 2023
Huang Lixin	Executive Director, President, Chief Accountant	5 December 2023
Du Daming	Non-executive Director	5 December 2023
Zhou Yi	Non-executive Director	5 December 2023
Li Lailong	Non-executive Director	5 December 2023
Cao Xin	Non-executive Director	5 December 2023
Li Haifeng	Non-executive Director	22 December 2020
Ding Xuchun	Non-executive Director	5 December 2023
Wang Jianfeng	Non-executive Director	5 December 2023
Xia Qing	Independent Non-executive Director	16 June 2020
He Qiang	Independent Non-executive Director	5 December 2023
Zhang Liying	Independent Non-executive Director	5 December 2023
Zhang Shouwen	Independent Non-executive Director	5 December 2023
Dang Ying	Independent Non-executive Director	5 December 2023

Name of Resigned Director	Position	Date of appointment
Zhao Keyu	Chairman, executive Director	5 March 2020
Huang Jian	Non-executive Director	27 August 2008
Lu Fei	Non-executive Director	16 June 2020
Teng Yu	Non-executive Director	16 June 2020
Mi Dabin	Non-executive Director	18 September 2014
Cheng Heng	Non-executive Director	13 June 2017
Lin Chong	Non-executive Director	13 June 2017
Xu Mengzhou	Independent Non-executive Director	23 June 2016
Liu Jizhen	Independent Non-executive Director	13 June 2017
Xu Haifeng	Independent Non-executive Director	13 June 2017
Zhang Xianzhi	Independent Non-executive Director	13 June 2017

MODEL CODE FOR SECURITIES TRANSACTIONS BY DIRECTORS AND SUPERVISORS

On 30 June 2021, the Company's Board considered and approved the Amended Management Guidelines Regarding the Holding of the Company's Shares by the Directors, Supervisors and Senior Management of Huaneng Power International, Inc. The standard of such guidelines is no less exacting than those set out in the Model Code for Securities Transactions by Directors of Listed Issuers as set out in Appendix C3 to the Hong Kong Listing Rules. Enquiries have been made with all Directors and Supervisors and all of them confirmed that they have complied with the code throughout 2023.

DIRECTORS', CHIEF EXECUTIVES' AND SUPERVISORS' RIGHT TO PURCHASE SHARES

For the year ended 31 December 2023, none of the Directors, Chief Executive, Supervisors of the Company or their respective associates had any interests in the shares, underlying shares or debentures of the Company or any associated corporations (within the meaning of the Securities and Futures Ordinance ("SFO")) which are (a) required to be notified to the Company and Hong Kong Stock Exchange pursuant to Divisions 7 and 8 of Part XV of the SFO; or (b) required to be recorded in the register kept by the Company pursuant to Section 352 of the SFO; (c) required to be notified to the Company and the Hong Kong Stock Exchange pursuant to the Model Code for Securities Transactions by Directors of Listed Issuers.

For the year ended 31 December 2023, none of the Directors, Chief Executives, Supervisors, senior management of the Company or their spouses and children under the age of 18 was given the right to acquire any shares, underlying shares or debentures of the Company or any associated corporations (within the meaning of the SFO).

INDEPENDENT DIRECTORS' CONFIRMATION OF INDEPENDENCE

Each of the independent directors of the Company, namely Mr. Xia Qing, Mr. He Qiang, Ms. Zhang Liying, Mr. Zhang Shouwen, Ms. Dang Ying has signed a confirmation letter by independent non-executive directors for 2023 on 19 March 2024 and the Company considers them to be independent.

EMOLUMENTS OF DIRECTORS AND SUPERVISORS

Details of the emoluments of Directors and Supervisors of the Company are set out in Note 38 to the financial statements prepared under the IFRSs.

THE FIVE HIGHEST PAID EMPLOYEES

Details of the five highest paid employees of the Company are set out in Note 37 to the financial statements prepared under the IFRSs.

PUBLIC FLOAT

As at the date of this report, the Company has maintained the prescribed public float under the Hong Kong Listing Rules and as agreed with the Hong Kong Stock Exchange, based on the information that is publicly available to the Company and within the knowledge of the directors.

REPORT OF THE BOARD OF DIRECTORS

STRUCTURE OF SHARE CAPITAL

As at 31 December 2023, the entire issued share capital of the Company amounted to 15,698,093,359 shares, of which 10,997,709,919 shares were domestic shares, representing 70.06% of the total issued share capital, and 4,700,383,440 shares were foreign shares, representing 29.94% of the total issued share capital of the Company. In respect of foreign shares, Huaneng Group through its wholly-owned subsidiaries China Hua Neng Group Hong Kong Limited and China Huaneng Group Treasury Management (Hong Kong) Limited, held 472,000,000 and 131,596,000 shares, representing 3.01% and 0.84% of the total issued share capital of the Company, respectively. In respect of domestic shares, Huaneng International Power Development Corporation ("HIPDC") owned a total of 5,066,662,118 shares, representing 32.28% of the total issued share capital of the Company, while Huaneng Group held 1,555,124,549 shares, representing 9.91% of the total issued share capital of the Company, and held 9,994,199 shares through its subsidiary, China Huaneng Finance Corporation Limited, representing 0.06% of the total issued share capital of the Company. Other domestic shareholders held a total of 4,365,929,053 shares, representing 27.81% of the total issued share capital.

SHAREHOLDINGS OF MAJOR SHAREHOLDERS

The following table sets out the shareholdings of the top ten shareholders of the Company as at 31 December 2023:

Name of shareholder	Number of Shares held at year end	Percentage of Shareholding (%)
Huaneng International Power Development Corporation	5,066,662,118	32.28%
HKSCC Nominees Limited	4,202,840,330	26.77%
China Huaneng Group Co., Ltd.	1,555,124,549	9.91%
Hebei Construction & Investment Group Co., Ltd.	493,316,146	3.14%
China Hua Neng Group Hong Kong Limited	472,000,000	3.01%
China Securities Finance Corporation Limited	466,953,720	2.97%
Dalian State-owned Capital Management Operation Co., Ltd.	301,500,000	1.92%
Jiangsu Guoxin Investment Group Limited	258,452,600	1.65%
Liaoning Energy Investment (Group) Limited Liability Company	244,205,000	1.56%
Hong Kong Securities Clearing Company Limited	160,166,808	1.02%

MATERIAL INTERESTS AND SHORT POSITIONS IN SHARES AND UNDERLYING SHARES OF THE COMPANY

As at 31 December 2023, the interests or short positions of persons who were entitled to exercise or control the exercise of 5% or more of the voting power at any of the Company's general meetings (excluding the Directors, Supervisors and chief executive) in the shares or underlying shares of equity derivatives of the Company as recorded in the register required to be kept under Section 336 of the Securities and Futures Ordinance (Cap. 571 of the laws of Hong Kong) (the "SFO") were as follows:

Name of shareholder	Class of shares	Number of shares held (share)	Capacity	Approximate percentage of shareholding in the Company's total issued share capital	Approximate percentage of shareholding in the Company's total issued domestic shares	Approximate Percentage of shareholding in the Company's total issued H Shares
Huaneng International Power Development Corporation (Note 2)	Domestic shares	5,066,662,118(L)	Beneficial owner	32.28%(L)	46.07%(L)	–
China Huaneng Group Co., Ltd. (Note 3)	Domestic shares	1,555,124,549(L)	Beneficial owner	9.91%(L)	14.14%(L)	–
China Huaneng Group Co., Ltd. (Note 4)	H Shares	603,596,000(L)	Beneficial owner	3.85%(L)	–	12.84%(L)
Wisdomshire Asset Management Co., Ltd.	H Shares	424,986,000 (L)	Investment manager	2.71 (L)	–	9.04 (L)

Notes:

(1) The letter "L" denotes a long position.

(2) As of the Latest Practicable Date, China Huaneng Group Co., Ltd. holds 75% direct interests and 25% indirect interests in Huaneng International Power Development Corporation.

(3) Besides of the 1,555,124,549 domestic shares, China Huaneng Group Co., Ltd. holds 9,994,199 domestic shares through its controlling subsidiary, China Huaneng Finance Corporation Limited.

(4) China Huaneng Group Co., Ltd. holds 472,000,000 H shares through its wholly-owned subsidiary, China Hua Neng Group Hong Kong Limited, and holds 131,596,000 H shares through its indirect wholly-owned subsidiary, China Huaneng Group Treasury Management (Hong Kong) Limited.

Save as stated above, as at 31 December 2023, in the register required to be kept under Section 336 of SFO, no other persons were recorded to hold any interests or short positions in the shares or underlying shares of the equity derivatives of the Company.

DIRECTORS' AND SUPERVISORS' RIGHT TO PURCHASE SHARES

The Company has adopted a code with the standard not lower than that of the Model Code for Securities Transactions by Directors of Listed Issuers as set out in Appendix C3 to the Hong Kong Listing Rules. Following enquiries made by the Company, all Directors and Supervisors confirmed that they have complied with the Code throughout 2023.

As at 31 December 2023, none of the directors, chief executive officer or supervisors of the Company had any interest or short position in the shares, underlying shares and/or debentures (as the case may be) of the Company or any of its associated corporations (within the definition of Part XV of the SFO) which was required to be notified to the Company and the Hong Kong Stock Exchange pursuant to Divisions 7 and 8 of Part XV of the SFO (including interest

REPORT OF THE BOARD OF DIRECTORS

and short position which any such Director, chief executive officer or Supervisor is taken or deemed to have under such provisions of the SFO) or which was required to be entered in the register required to be kept by the Company pursuant to Section 352 of the SFO or which was otherwise required to be notified to the Company and the Hong Kong Stock Exchange pursuant to the Model Code for Securities Transactions by Directors of Listed Companies as contained in Appendix C3 to the Hong Kong Listing Rules.

INTEREST IN CONTRACTS AND SERVICE CONTRACTS

Save for the service contracts mentioned below, as at the end of 2023, the Directors and Supervisors of the Company did not have any material interests in any contracts entered into by the Company.

No Director or Supervisor has entered into any service contract which is not terminable by the Company within one year without payment of compensation (other than statutory compensation).

Each and every Director and Supervisor of the Company have entered into a service contract with the Company for a term of three years commencing from the signing of the contract.

REMUNERATION POLICY

The Company unceasingly improves its remuneration and distribution system and has formulated a set of remuneration management rules in accordance with the overall development strategy of the Company. Employees' salaries are determined by reference to the job positions they hold and calculated based on their job performance. Giving consideration to both efficiency and fairness, the Company creates a methodic and effective incentive mechanism by linking the employees' remuneration with their personal performance and the business performance of the Company as well. The remuneration of the Directors, Supervisors and senior management of the Company mainly consists of the following:

(1) Salaries and allowances

The basic salary is mainly set by an evaluation of the job position and a factor analysis, and with reference to the salary level of the relevant position in the labor market. It accounts for about 20% of the total remuneration.

(2) Discretionary bonus

Discretionary bonus is based on the operating results of the Company, the performance of the Directors, Supervisors and senior management. It accounts for about 65% of the total remuneration.

(3) Payments on pension, etc.

Contributions for various pension schemes such as endowment insurance, corporate annuity and housing fund established by the Company for the Directors, Supervisors and senior management accounts for about 15% of the total remuneration.

According to the resolution at the general meeting, the Company paid each independent director a subsidy amounting to RMB300,000 (inclusive of tax) in 2023. The Company also reimburses the independent director for the expenses they incur in attending board meetings and general meetings and other reasonable expenses they incur while fulfilling their obligations under the Company Law and the Company's Articles of Association (including travelling expenses and administrative expenses). Besides these, the Company does not give the independent director any other benefit.

Details of remuneration payable to members of senior management of the Group for the year ended 31 December 2023 as set out as follows:

Range	Number
RMB2,000,001 to RMB3,000,000	0
RMB1,000,001 to RMB2,000,000	3
RMB0 to RMB1,000,000	2

STAFF HOUSING

According to the relevant regulations of the state and local governments, the Company established a housing fund for the employees of the subsidiaries of the Company.

STAFF MEDICAL INSURANCE SCHEME

According to the requirements as prescribed by the relevant local governments, the Company and its subsidiaries have joined medical insurance schemes for their staff.

RETIREMENT SCHEMES

The Company and its subsidiaries have implemented specified retirement contribution schemes in accordance with relevant requirements of the State and local governments.

Pursuant to the specified retirement contribution schemes, the Company and its subsidiaries have paid contributions according to the contracted terms and obligations set out in the publicly administered retirement insurance plans. The Company has no other obligations to pay further contributions after paying the prescribed contributions. The contributions payable from time to time will be regarded as expenses for the period and capital construction expenditure during the year they are made and accounted for as labor cost. Details of the retirement schemes of the Company are set out in Note 37 to the financial statements prepared under the IFRS.

In addition, the Group has also implemented a supplementary defined contribution retirement scheme for PRC employees. Under this scheme, the employees are required to make a specified contribution based on the number of years of service with the Group, and the Group is required to make a contribution equal to two to four times the employees' contributions. The employees will receive the total contributions upon their retirement.

Please refer to Note 37 to the financial statements prepared under the IFRS for further details on how contributions were calculated or benefits funded under the above-mentioned schemes. During the financial year ended 31 December 2023, there were no forfeited contributions to the retirement schemes that the Group could utilize to reduce the contributions payable in future years. Accordingly, no forfeited contributions were utilized during the financial year and no forfeited contributions were available as at 31 December 2023 to reduce the level of future contributions to be made by the Group to the retirement schemes.

CONTROLLING SHAREHOLDERS' INTERESTS IN CONTRACTS OF SIGNIFICANCE

Save as disclosed in the section headed "Connected Transactions & Continuing Connected Transactions" and Note 36 to the consolidated financial statements in this report, there was no other contract of significance entered into between the Company or any of its subsidiaries and the controlling shareholders of the Company or any of its subsidiaries during the year ended 31 December 2023, and no contract of significance for the provision of services to the Company or any of its subsidiaries by a controlling shareholder of the Company or any of its subsidiaries was entered into during the year ended 31 December 2023.

REPORT OF THE BOARD OF DIRECTORS

EQUITY-LINKED AGREEMENTS

The Company has not entered into any equity-linked agreements during the reporting period or has entered into any equity-linked agreements which subsisted at the end of the reporting period.

GENERAL MEETINGS

During the reporting period, the Company convened one annual general meeting and one extraordinary general meeting.

1. The Company's 2022 annual general meeting was held on 20 June 2023. The resolutions passed at the meeting were published in China Securities Journal and Shanghai Securities News on 21 June 2023.

2. The Company's 2023 first extraordinary general meeting was held on 5 December 2023. The resolutions passed at the meeting were published in China Securities Journal and Shanghai Securities News on 6 December 2023.

DISCLOSURE OF MAJOR EVENTS

1. Adjustments to the management of the Company: On 16 June 2023, the 32nd meeting of the tenth session of the Board of Directors of the Company approved the appointment of Mr. Huang Lixin as president of the Company. On 26 February 2023, Mr. Chen Shuping resigned from his position as the vice president of the Company due to age reasons. On 19 June 2023, Mr. Fu Qiyang resigned from his position as the chief economist of the Company due to age reasons. On 29 August 2023, The 34th meeting of the tenth session of the Board of Directors of the Company approved the "Proposal on the Appointment of Vice President of the Company", and agreed to appoint Mr. Qin Haifeng and Mr. Du Canxun as vice president of the Company.

2. In 2023, the Company continued to explore and practice capital market financing opportunities, and launched equity-type REITs financing products in accordance with the Company's needs. Five equity-type REITs financing products were completed in the Shanghai Stock Exchange and interbank markets, bringing in a total of RMB19.151 billion of equity capital for the Company, which set a number of records for the industry's first equity-type REITs financing products and the issuance of equity-type REITs financing products at the best interest rates. It has been subscribed by diversified investors, which fully demonstrates the high recognition of the capital market to the Company and makes a positive contribution to the Company's accelerated green and low-carbon transformation.

OTHER DISCLOSURE

An analysis of the Company's performance using key financial performance indicators and a discussion on the principal risks and uncertainties facing by the Company are set out in the section headed "Management's Discussion and Analysis" in this annual report. Particulars on the significant events affecting the Company during the year can be found in the section headed "Major Corporate Events in 2023" in this annual report. In addition, discussions on the Company's environmental policies and performance, relationship with its major stakeholders, permitted indemnity provisions provided by the Company to its Directors and compliance with the relevant laws and regulations which have a significant impact on the Company are included in the sections headed "Management's Discussion and Analysis", "Corporate Governance Report" and "Social Responsibility Report" in this annual report. These discussions form part of this Report of the Board of Directors.

REQUIREMENTS UNDER THE ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORTING GUIDELINES

In 2023, in accordance with the requirements under the Environmental, Social and Governance Reporting Guidelines of the Hong Kong Stock Exchange, the Company has completed the preparation and disclosure of the Environmental, Social and Governance Report in due time, which will be published on the website of the Company (www.hpi.com.cn: Investor Relationship-ESG Report) and the website of Hong Kong Stock Exchange (www.hkexnews.hk) together with the annual report as scheduled. If you wish to request a printed copy of the "2023 Environmental, Social and Governance Report" of the Company, you can contact the Company by sending email to zqb@hpi.com.cn.

The Company has prepared and disclosed quality ESG reports for 8 consecutive years, and was awarded the "2023 Best ESG Practice Case of Listed Companies" by the China Listed Companies Association, and was included in the "Yearbook of China Listed Companies (2022)". The Company was also selected as one of the "ESG Pioneer 100 Index of Central Enterprises" by the State-owned Assets Supervision and Administration Commission.

CODE OF CORPORATE GOVERNANCE PRACTICES

During the reporting period, the Company had complied with all the code provisions contained in the second part of Appendix C1 to the Hong Kong Listing Rules. For further details, please refer to the section headed "Corporate Governance Report" contained in this annual report of the Company.

DESIGNATED DEPOSIT

As at 31 December 2023, the Company and its subsidiaries did not have any designated deposit with any financial institutions within the PRC nor any overdue fixed deposit which could not be recovered.

POVERTY ALLEVIATION EXPENDITURE

In 2023, the expenditure on targeted poverty alleviation in the PRC in the name of the Company totaled RMB14.634 million.

LEGAL PROCEEDINGS

As at 31 December 2023, the Company and its subsidiaries were not involved in any material litigation or arbitration and no material litigation or claim was pending or threatened or made against the Company and its subsidiaries.

CHANGES IN INFORMATION OF DIRECTORS, SUPERVISORS AND CHIEF EXECUTIVE OFFICER DURING THE REPORTING PERIOD

1. On 29 August 2023, as elected by the Board of Directors, Mr. Wang Kui was re-designated from the non-executive Director to the executive Director of the tenth session of the Board of the Company and was appointed as the Chairman of the tenth session of the Board of the Company, the chairman of the Strategy Committee and a member of the Nomination Committee of the Board of the Company. Due to work reason, Mr. Zhao Keyu resigned from his position as the executive Director, the Chairman of the tenth session of the Board of the Company, the chairman of the Strategy Committee and a member of the Nomination Committee of the Board with effect from 29 August 2023. For details, please refer to the announcement of the Company dated 30 August 2023.

2. At the 2023 first extraordinary general meeting of the Company held on 5 December 2023, Mr. Wang Kui, Mr. Wang Zhijie, Mr. Huang Lixin were re-elected or appointed as the executive Directors of the eleventh session of the Board of the Company, Mr. Du Daming, Mr. Zhou Yi, Mr. Li Lailong, Mr. Cao Xin, Mr. Li Haifeng,

REPORT OF THE BOARD OF DIRECTORS

Mr. Ding Xuchun and Mr. Wang Jianfeng were re-elected or appointed as the non-executive Directors of the eleventh session of the Board of the Company, and Mr. Xia Qing, Mr. He Qiang, Ms. Zhang Liying, Mr. Zhang Shouwen and Ms. Dang Ying were re-elected or appointed as independent non-executive Directors of the eleventh session of the Board of the Company, with a term commencing from the conclusion of the 2023 first extraordinary general meeting until expiry of the eleventh session of the Board of the Company. For details, please refer to the circular of the Company dated 17 November 2023 and the announcement of the Company dated 6 December 2023.

3. On 5 December 2023, as elected by the Board of Directors, Mr. Wang Kui served as the Chairman of the eleventh session of the Board of the Company and Mr. Wang Zhijie served as the Vice Chairman of the eleventh session of the Board of the Company. In addition, Mr. Wang Kui, Mr. Wang Zhijie, Mr. Huang Lixin, Mr. Du Daming, Mr. Li Lailong, Mr. Xia Qing and Ms. Zhang Liying were appointed as members of the Strategy Committee, Mr. Xia Qing, Mr. He Qiang, Ms. Zhang Liying, Mr. Zhang Shouwen and Ms. Dang Ying were appointed as members of the Audit Committee, Mr. Huang Lixin, Mr. Cao Xin, Mr. Wang Jianfeng, Mr. Xia Qing, Mr. He Qiang, Mr. Zhang Shouwen and Ms. Dang Ying were appointed as members of the Nomination Committee, and Mr. Wang Zhijie, Mr. Li Haifeng, Mr. Ding Xuchun, Mr. He Qiang, Ms. Zhang Liying, Mr. Zhang Shouwen and Ms. Dang Ying were appointed as members of the Remuneration and Appraisal Committee at the meeting of the Board. For details, please refer to the announcement of the Company dated 6 December 2023.

4. On 5 December 2023, due to expiry of the terms of office, Mr. Huang Jian, Mr. Lu Fei, Mr. Teng Yu, Mr. Mi Dabin, Mr. Cheng Heng and Mr. Lin Chong ceased to be non-executive Director of the tenth session of the Board of the Company and Mr. Xu Mengzhou, Mr. Liu Jizhen, Mr. Xu Haifeng and Mr. Zhang Xianzhi ceased to be independent non-executive Director of the tenth session of the Board of the Company. For details, please refer to the circular of the Company dated 17 November 2023.

5. The Company re-elected or appointed Mr. Cao Shiguang, Ms. Kou Yaozhou, Mr. Xia Aidong and Mr. Song Taiji as Supervisors of the eleventh session of the Supervisory Committee of the Company at the 2023 first extraordinary general meeting held on 5 December 2023, with a term commencing from the conclusion of the 2023 first extraordinary general meeting until expiry of the eleventh session of the Supervisory Committee of the Company. On the same day, as elected by the employee representative congress, Mr. Zhu Tong and Mr. Wang Yu served as employee representative Supervisors of the eleventh session of the Supervisory Committee of the Company, with a term commencing from the conclusion of the 2023 first extraordinary general meeting until expiry of the eleventh session of the Supervisory Committee of the Company. For details, please refer to the circular of the Company dated 17 November 2023 and/or the announcement of the Company dated 6 December 2023.

6. On 5 December 2023, as elected by the meeting of the Supervisory Committee, Mr. Cao Shiguang served as the Chairman of the eleventh session of the Supervisory Committee of the Company and Ms. Kou Yaozhou served as the Vice Chairman of the eleventh session of the Supervisory Committee of the Company. For details, please refer to the announcement of the Company dated 6 December 2023.

7. On 5 December 2023, Mr. Li Shuqing, Mr. Mu Xuan and Mr. Gu Jianguo ceased to be the Supervisors of the tenth session of the Supervisory Committee of the Company (Mr. Li Shuqing and Mr. Mu Xuan ceased to be the Chairman and Vice Chairman of the Supervisory Committee of the Company, respectively) due to expiry of the terms of office; and Mr. Xu Jianping ceased to be the employee representative Supervisor of tenth session of the Supervisory Committee of the Company due to expiry of his term of office. For details, please refer to the announcement of the Company dated 6 December 2023.

ANNUAL GENERAL MEETING AND CLOSURE OF REGISTER

As the Company has yet to confirm the date of the 2023 annual general meeting, the record date for determining the eligibility to attend and vote at the 2023 annual general meeting and the entitlement to the final dividend and the period for closure of register, the Company will upon confirmation thereof announce such details in the notice of the 2023 annual general meeting. Such notice is expected to be issued to shareholders in late April 2024 or in May 2024.

MATERIAL ACQUISITIONS AND DISPOSALS OF SUBSIDIARIES, ASSOCIATES AND JOINT VENTURES

1. The Company transferred a 49% equity interest in Sichuan Energy Development Company by way of non-public agreed transfer at a price of RMB4,203.4808 million to Huaneng Hydropower. Upon completion of the Transaction, the Company will no longer hold any equity interest in Sichuan Energy Development Company. Please refer to the announcement of the Company dated 7 September 2023.

2. Liaoning Clean Energy, a wholly owned subsidiary of the Company introduced Huaneng Gongrong Fund as a strategic investor through increasing its registered capital and expanding its total shares. Huaneng Gongrong Fund contributed RMB1,500 million, of which RMB1,229.8318 million was accounted for as the registered capital of Liaoning Clean Energy and the remaining amount was accounted for as the capital reserve. upon the completion of this transaction, the Company and Huaneng Gongrong Fund hold 77.56% and 22.44% of the equity of Liaoning Clean Energy respectively. For details, please see the company's announcements dated 11 October 2023 and 22 December 2023 respectively.

AUDITORS

As approved at the 2022 first extraordinary general meeting, Ernst & Young Hua Ming LLP was appointed as the Company's domestic auditor for 2023, and Ernst & Young was appointed as the Hong Kong auditor of the Company for 2023. The Company has not change its auditors for the past three years.

By Order of the Board
Wang Kui
Chairman

Beijing, the PRC
19 March 2024

REPORT OF THE SUPERVISORY COMMITTEE

TO ALL SHAREHOLDERS,

In 2023, the Supervisory Committee of the Company conscientiously implemented the spirit of documents issued by the CSRC and the SASAC, the Company earnestly fulfilled various duties and obligations in strict compliance with the Company Law, the Securities Law, the Articles of Association and other related laws and regulations, and gave full play to its supervisory functions, which has played a positive role in improving the level of corporate governance and standard operation and effectively protected the legitimate rights and interest of the Company and all Shareholders.

The report on the work of the Supervisory Committee in 2023 is as follows:

1. STRIVE FOR QUALITY, AND THE COMPANY'S OPERATION DEVELOPMENT REACHES A NEW LEVEL

In 2023, the Board of Directors of the Company thoroughly studied and implemented Xi Jinping's Thought on Socialism with Chinese Characteristics in the New Era, and achieved remarkable results in theme education. The Company insists on inheriting the mission of "three colors", adheres to the principle of "seeking progress while maintaining stability, promoting stability with progress and establishing the new before abolishing the old", takes building the Company into a world-class listed power generation company as the strategic goal, the high-quality development as the primary goal and the deep promotion of low-carbon and green development as the important starting point, and coordinates and does a good job in various work such as stabilizing growth, improving quality and efficiency, promoting reform and preventing risks, striving to promote the high-quality development of the Company to a new level. The management of the Company conscientiously implemented the decision-making arrangements of the Board of Directors, anchored the development and planning objectives of the "14th Five-Year Plan", united and led all employees to consolidate the responsibility of ensuring the supply of electricity and heat, and actively responded to the market changes in electricity, coal and funds, making remarkable achievements in production safety, quality improvement and efficiency improvement, transformation and development, scientific and technological innovation and international development. Through the unremitting efforts of all employees, the Company's operating performance has been greatly improved and its core competitiveness has been continuously strengthened.

The Supervisory Committee is of the view that during the reporting period, the Board gave full play to the role of "determining strategies, making decisions and preventing risks", and the Company maintained steady development. All Directors were dedicated and deligent and carried out the work in accordance with the laws and regulations, the Company's operation, reform and development has been promoted steadily and the operating results has been recognized by the market, regulatory authorities and investors. The decision-making procedure of the Board was in full compliance with the requirements of the laws and regulations of the place in which the Company's shares are listed and the Articles of Association, and the resolutions conformed to the need of the Company's management and development. There were no harmful behavior to the interests of the Company and its Shareholders. The management of the Company conscientiously executed the resolutions made by the Board, carried out work in strict accordance with relevant systems, and achieved good results. There was no violation of any regulations in the operation.

2. DILIGENTLY CARRY OUT SUPERVISION IN ACCORDANCE WITH LAWS

(1) Election of the Supervisory Committee

In 2023, the term of the tenth session of the Supervisory Committee of the Company expired. With the strong support of the Shareholders and after sufficient preparation and communication and negotiation, the Company smoothly completed the election of the Supervisory Committee according to relevant procedures. The eleventh session of the Supervisory Committee of the Company comprises of 6 Supervisors, including 4 shareholder representative Supervisor and 2 employee representative Supervisor. All the Supervisors have extensive professional skills and profound practical experience in the fields of enterprise management and financial accounting, which laid a good foundation for the Supervisory Committee on further strengthening the supervision and management on accounting, reviewing and examining duty performance of the Directors and senior management according to relevant regulations.

(2) Convening the Meetings of the Supervisory Committee

During the reporting period, the Supervisory Committee of the Company convened a total of 6 meetings, including 3 on-site meetings and 3 communication meetings, at which 18 proposals, including the annual work report of the Supervisory Committee, annual financial final report, annual budget report, provision of significant asset impairment, and election of the Supervisory Committee. All the Supervisors earnestly discussed and rigorously considered all proposals, prudently put forward supervision opinion, and effectively performed supervisory duties and responsibilities. Such meetings were convened in compliance with regulatory rules of the place in which the Company's shares are listed and relevant requirements of the Articles of Association, and the proposals and resolutions discussed at the meeting was disclosed and announced in a timely manner in accordance with relevant provisions regarding information disclosure.

(3) Training and Study of the Supervisors

All Supervisors of the Company paid close attention to the improvement of duties performance. They actively participated in the study on policies and regulations and professional trainings, and kept abreast of the update of the regulations and relevant policies of the places in which the Company's shares are listed. During the reporting period, the Supervisors of the Company participated in special trainings organized by regulatory authorities and China Association for Public Companies for 9 person times in total. The duty performance capacities and practices of the Supervisors have been further enhanced through multi-level, customized and in-depth study,

REPORT OF THE SUPERVISORY COMMITTEE

3. FOCUS ON INTEGRITY AND CONSCIENTIOUSLY PERFORM ITS SUPERVISORY DUTIES

(1) Supervising the Standard Operation of the Company According to the Laws

In 2023, the Supervisory Committee of the Company proactively performed its functions of supervision and examination, conducted serious supervision and examination on the procedures for convening general meetings and board meetings and the implementation of resolutions, performance of duties by Directors and the senior management of the Company and the internal control, financial management, related party transactions and information disclosure of the Company through various approaches including attending general meetings, presenting at the Board meetings, on-site research, attending relevant meetings of the Company and inquiring by telephone, and expressed its opinions and recommendation in a timely manner.

The Supervisory Committee is of the view that the convening, holding and consideration procedures of the shareholders' general meetings and the meetings of the Board of Directors complied with regulatory rules of the place in which the Company's shares are listed and relevant requirements of the Articles of Association, and the deliberation and decision-making on major issues were legal, compliant and reasonable. The Directors and senior management of the Company conscientiously performed their duties and obligations and implemented resolutions of the general meetings and the Board meetings in strict compliance with the laws, regulations of the State and regulatory requirements. There were no harmful behavior to the interests of the Company and its Shareholders.

(2) Examining the Financial Information and Regular Reports of the Company

The Supervisory Committee carefully supervised and reviewed the financial reports for each period, supervised and examined the Company's implementation of financial policies and operating results. At the annual, first quarter, semi-annual and third quarter meetings of the Supervisory Committee, the Company's supervisors fully discussed the Company's periodic reports, financial reports, profit distribution plans, provision for asset impairment, and financial audit reports issued by domestic and foreign auditors, and put forward relevant opinions and suggestions.

The Supervisory Committee is of the view that the sound financial system and standard operation are in place. The preparation, audit and disclosure procedures of the regular reports and financial statements have complied with the requirements of the Company Law, the Accounting Law and the Articles of Association of the Company, which truly, accurately and fairly reflected the financial position and operating results of the Company in all material respects. The audit report with standard and unqualified opinions issued by the auditors of the Company are objective and fair, and in line with the actual situation of the Company.

(3) Examining Related Party Transactions

The Supervisory Committee paid close attention on the budget and implementation of the related party transactions of the Company, reviewed proposals including the Proposal regarding the Connected Transactions of the Capital Increase in Huaneng Shidaowan Nuclear Power Development Co., Ltd., the Proposal regarding the Connected Transactions of the Transfer of Sichuan Energy Development Co. Ltd., the Proposal regarding the Continuing Connected Transactions for 2024 between the Company and Huaneng Group and the Proposal regarding the Connected Transactions of the Capital Increase in Liaoning Clean Energy Co., Ltd. through presenting at the Board meetings and attending the general meetings, and supervised the fairness, rationality and necessity of connected transactions.

The Supervisory Committee is of the view that such related party transactions met the needs of the Company's operation and development and was in the interests of the Company as a whole, the transaction terms were fair and equitable, and the transaction consideration procedure complied with regulatory rules of the place in which the Company's shares are listed and relevant requirements of the Articles of Association. The Company disclosed the related party transactions in a timely and sufficient manner, without any prejudice to the interests of the Company and all shareholders, in particular minority Shareholders.

(4) Checking the Information Disclosure of the Company

The Supervisory Committee continued to supervise the information disclosure of the Company. The Supervisory Committee carefully reviewed matters disclosed in the annual report, semi-annual report and quarterly report and relevant disclosure procedures through holding meetings of the Supervisory Committee on a regular basis, and signed to confirm. The Supervisory Committee also checked the procedures of filing insider information and relevant filing materials, and faithfully performed the function of supervision on information disclosure.

The Supervisory Committee is of the view that the Company's various system on information disclosure was well-established and sound, and the control and procedure were complete and effective. The procedures of information disclosure strictly complied with the relevant systems such as "the Rules on Information Disclosure Management" and "the Rules on Insider Information Management", and met the regulatory requirements of the places in which the Company's shares are listed.

REPORT OF THE SUPERVISORY COMMITTEE

(5) Reviewing the Board's Assessment Report on Internal Control

At the annual Board meetings, the Supervisory Committee listened to the reports on the establishment, implementation and examination of the Company's internal control, and convened supervisor meetings to review the Board's assessment report on internal control and carried out detailed and comprehensive review of the establishment and operation of internal control of the Company during the reporting period.

The Supervisory Committee is of the view that the Company has established a sound internal control system, which fully covers the management of production, operation and development, and various internal control measures has been effectively implemented. The assessment report on internal control issued by the Board of Directors reflected the establishment and operation of the internal control of the Company in a fair and true manner.

In 2024, the 75th anniversary of the founding of the People's Republic of China and the 30th anniversary of the establishment of the Company will be celebrated. The Supervisory Committee of the Company will continue to take Party building as the guide, faithfully and diligently perform its supervisory duties in strict accordance with the laws and regulations of the place where the Company' shares are listed and the Articles of Association, constantly strengthen its own construction, and continuously improve its duty performance capacity and supervision quality, so as to fully support the steady development of the Company, earnestly safeguard the legitimate rights and interests of the Company and its shareholders, and make new contributions to accelerating the construction of the Company into a world-class listed power generation company.

Supervisory Committee
Huaneng Power International, Inc.

Beijing, the PRC
19 March 2024

PROFILES OF DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT

PROFILES OF DIRECTORS AND SUPERVISORS

Directors

WANG Kui, aged 56, currently the chairman and secretary of the CPC Committee of the Company and an assistant to the president, director of the thermal power construction center and director of the engineering technology and economic management center of Huaneng Group. He previously served as vice president and CPC Leadership Group member of Xinjiang Energy Development Co., Ltd. (from August 2007 to November 2008, he was a member of the standing committee of the CPC Committee and Deputy Governor of the Kizilsu Kirghiz Autonomous Prefecture in Xinjiang), the vice president and the deputy party secretary of CPC Leadership Group, president and deputy party secretary CPC Leadership Group (presided over the work) of Shanxi branch of the Company, chief of the Planning and Development Department, the deputy chief economist and the chief of the Planning and Development Department of Huaneng Group. He graduated from Guanghua School of Management, Peking University, majoring in Business Administration for Senior Executives, MBA. He is a professor-level senior engineer.

WANG Zhijie, aged 59, currently the vice chairman and a member of CPC Committee of the Company. He previously served as manager of the Manager Work Department and Human Resources Department of the Company, CPC Leadership Group member of HIPDC, leader of Discipline Inspection Team, minister of the Organisation Department (director of Human Resources Department) of the CPC Leadership Group in Huaneng Group. He graduated from Guanghua School of Management, Peking University, majoring in Business Administration for Senior Executives, MBA. He is a senior engineer.

HUANG Lixin, aged 57, currently the director, president, chief accountant and vice secretary of CPC Committee of the Company, deputy chief of thermal power construction center and the deputy chief of engineering technology and economic management center of Huaneng Group. He previously served as chief accountant of Huaneng Nantong branch (power plant), deputy manager, manager of Finance Department of the Company and chief of the Finance Department of Huaneng Group ,chief accountant and CPC Committee member of Huaneng International. He graduated from the Economic Management School of Tsinghua University with an EMBA degree. He is a professor-level senior accountant.

PROFILES OF DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT

DU Daming, aged 57, currently a director of the Company, vice chairman, president, vice secretary of CPC Committee of HIPDC, deputy executive chief of equity management center of Huaneng Group. He previously served as the chief of Office of Huaneng Group, chief of Board Office, vice president, CPC Leadership Group member, general legal counsel, secretary to the Board of the Company, deputy executive chief of Electric Power Development Division, deputy executive chief of Shale Gas Development and Utilization Office of Huaneng Group, vice president of Green Coal Electricity Co., Ltd., president and deputy secretary of CPC Committee of HIPDC. He graduated from North China Electric Power University with a master's degree, majoring in power system and automation. He is a senior engineer.

ZHOU Yi, aged 56, currently the director of the Company, general legal counsel (deputy chief engineer level), Chief Compliance Officer, chief of Corporate Law Department of Huaneng Group, managing member of China Management Sciences Society. He previously served as the chief of the secretariat of Office and deputy director of Office of Huaneng Group, manager of the Manager Work Department of the Company, chief of Corporate Management Department, chief of Corporate Management and Legal Compliance Department of Huaneng Group. He graduated from the School of Economics of Remin University of China with a master's degree in Economics majoring in political science and economy and a doctor's degree majoring in management. He is a professor-level senior economist.

LI Lailong, aged 55, currently the director of the Company, chief of Planning and Development Department, chief of New Energy Business Department, vice chairman of Energy and Meteorology Committee of Chinese Society for Electrical Engineering, vice chairman of Offshore Wind Power Technology Committee of Chinese Society for Electrical Engineering, vice chairman of Power Quality Committee of China Electricity Council. He was the plant manager of Huaneng Nanjing Power Plant, the plant manager of Huaneng Fuzhou Power Plant, and the vice president of Huaneng Jiangsu branch, and deputy chief of Planning and Development Department of Huaneng Group. He graduated from School of Energy and Power Engineering of Xi'an Jiaotong University, majoring in reactor engineering, with a bachelor's degree in engineering and a master's degree in business administration. He is a professor-level senior engineer.

CAO Xin, aged 52, currently the director of the Company, president, vice chairman of Hebei Construction & Investment Group Co., Ltd., president of Yanshan Development (Yanshan International Investment) Co., Ltd., and chairman of China Suntien Green Energy Corporation Limited. He previously served as the vice president of Hebei Construction & Investment Group Co., Ltd., Chief Executive Officer of China Suntien Green Energy Corporation Limited, president assistant and manager of the Second Department of Public Utilities of Hebei Construction & Investment Company. He graduated from Renmin University of China, majoring in national economics with a doctoral degree. He is a professor-level senior economist.

LI Haifeng, aged 44, currently the director of the Company. He is the secretary of the CPC Committee and chairman of Liaoning Energy Investment (Group) Co., Ltd. He previously served as the deputy president and vice chairman, the president and chairman of Liaoning Energy Investment (Group) Co., Ltd. He graduated from Tsinghua University, majoring in materials science and engineering, postgraduate qualification, and a doctoral degree in engineering. He is a professor-level senior engineer.

DING Xuchun, aged 56, currently the director of the Company, the vice president and member of CPC Committee of Jiangsu Guoxin Investment Group Limited. He previously served as vice president, president, deputy secretary of CPC Committee, secretary of CPC Committee, chairman of Jiangsu Guoxin Jingjiang Power Generation Co., Ltd., secretary of CPC Committee and chairman of Jiangsu Guoxin Yangzhou Power Generation Co., Ltd. He graduated from Southeast University and obtained a bachelor's degree, and he obtained a master's degree in engineering. He is a researcher-level senior engineer.

WANG Jianfeng, aged 46, currently the director of the Company, the president of Nantong Investment Management Co., Ltd. He previously served as chief of Office and also Supervisory Office of Nantong National Investment Management Co., Ltd., chief of Party-Masses Human Resources (also Supervisory Department and Audit Department) of Nantong Urban Construction Group Co., Ltd., vice president of Nantong Investment Management Co., Ltd. He graduated from Xuzhou Normal University, majoring in Chinese Language and Literature, and Suzhou University, School of Education, majoring in Management of Higher Education, with a master's degree in education.

PROFILES OF DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT

XIA Qing, aged 66, currently the independent director of the Company, a professor in Tsinghua University, director of Carbon Neutral Sub-Committee on Electricity of the National Energy Internet, the expert of the National Electricity Exchange Agency Alliance, the expert of Guangzhou Electricity Trading Centre, the expert of China Southern Power Grid Corporation, the expert of State Power Investment Corporation Limited, the deputy director of the Power Market Special Committee of China Electrical Engineering Society, the deputy chairman of China Power Reform 30-person Forum, the deputy director of the Energy Storage Committee of the China Energy Research Association, independent director of TBEA Co., Ltd., independent director of Beijing HyperStrong Technology Co., Ltd. He was an associate professor, professor, and chairman of the degree committee at Tsinghua University. He previously served as the Independent Director of the eighth session of Board of the Company. He graduated from Tsinghua University with a doctoral degree in power system and automation.

HE Qiang, aged 71, currently the independent director of the Company, a professor and doctoral supervisor of School of Finance at Central University of Finance and Economics, independent director of Shenzhen Kinwong Electronic Co., Ltd., independent director of Ucap Cloud Information Technology Co., Ltd., independent director of Guo Yuan Futures Co., Ltd., independent director of China Minsheng Trust Co., Ltd., independent director of Yingda Asset Management Co., Ltd. He previously served as the director of the Securities and Futures Research Institute of the Central University of Finance and Economics, a counselor of the Beijing Municipal Government, a member of the 11th, 12th and 13th National Committee of the Chinese People's Political Consultative Conference (CPPCC), a member of the Economic Committee. He is receiving special government allowance of the State Council. He graduated from Zhongnan University of Economics and Law with a bachelor's degree in political economy.

ZHANG Liying, aged 63, currently the independent director of the Company, executive member of the Chinese Society for Electrical Engineering and chairman of the Urban Power Supply and Reliability Committee, vice chairman of the Committee of Women Science and Technology Workers, chairman of the IEEE PES Energy Storage and Stationary Battery Satellite Committee – China, and chief expert of the Expert Committee of the China Electricity Council. She previously served as the chief engineer, president assistant and consultant of State Grid Corporation of China. She graduated from North China Electric Power University, majoring in technical economics and management, and obtained a doctoral degree. She is a professorial senior engineer, and an expert enjoying the State Council's special government allowance.

ZHANG Shouwen, aged 57, currently the independent director of the Company, a professor and doctoral supervisor at the Law School of Peking University, chief of the Institute of Economic Law of Peking University, director of the Institute of Rule of Law and Development of Peking University, independent director of Minmetals Development Co., Ltd., independent director of Sunshine Asset Management Corporation Limited, independent director of CP Investment Co., Ltd. He was a lecturer, associate professor and professor at the Law School of Peking University, independent director of the seventh and eighth session of Boards of the Company. He graduated from the Law School of Peking University, majoring in international economic law, and obtained a doctoral degree.

DANG Ying, aged 49, currently the independent director of the Company, the vice president and Chief Financial Officer of Huajin International Trading Co., Ltd.. She previously served as project manager and senior project manager of Pan-China Certified Public Accountants LLP, deputy chief accountant and president of Finance Department, president assistant and chief of Strategy Department and Operation Department of China North Industries Corporation, vice president of Finance Department and Civilian Products Management Department of China North Industries Group Corporation Limited, and consultant in Management Accounting of the Ministry of Finance. She graduated from China Academy of Financial Sciences, majoring in accounting, and obtained a doctoral degree. She is a Certified Public Accountant in China, a senior chartered accountant in the UK and a senior accountant.

PROFILES OF DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT

Supervisors

CAO Shiguang, aged 55, currently the chairman of the Supervisory Committee of the Company, deputy chief accountant, chief of Finance and Assets Department and Sharing Center of Huaneng Group, director of Jianxin Pilot Strategic Emerging Industries Development Fund, vice chairman of the Specialized Committee on Electricity Finance and Economics of China Electricity Council, and representative of the China Association of Inter-bank Market Dealers. He was chief of the Budget and Comprehensive Planning Department of Huaneng Group, president of Huaneng Renewables Corporation Limited, and chairman of Huaneng Finance Co., Ltd. He graduated from the Department of Electrical Engineering of Harbin Institute of Technology with a doctor's degree majoring in power system and automation, and obtained a doctoral degree in engineering. He is a professor-level senior economist.

KOU Yaozhou, aged 54, currently the vice chairman of the Supervisory Committee of the Company, an assistant to the president of Dalian State Owned Capital Management and Operation Co., Ltd. She previously served as chief accountant of Dalian Equipment Investment Group Co., Ltd. She graduated from Dongbei University of Finance & Economics, majoring in taxation, obtained a bachelor's degree in economics. She is a senior accountant.

XIA Aidong, aged 55, currently the supervisor of the Company, chief of Audit Department and Audit Center of Huaneng Group. He previously served as the chief of Comprehensive Division and Budget Division of Finance Department and the deputy chief of the Budget and Comprehensive Planning Department of Huaneng Group. He graduated from Beijing Business School, majoring in accounting. He is a professor-level senior accountant.

SONG Taiji, aged 49, currently the supervisor of the Company, deputy chief of Overseas Business Department of Huaneng Group, vice president and CPC Committee member of China Hua Neng Group Hong Kong Limited, executive director and secretary of CPC Committee of Huaneng International Engineering Technology Co., Ltd.. He was the president assistant of Huaneng Shandong Power Generation Co., Ltd. and General Manager and Deputy Secretary of Party Committee of Huaneng Shandong Ruyi (Pakistan) Energy (Private) Co., Ltd.. He graduated from North China Electric Power University, majoring in electrical engineering and automation, and he obtained the bachelor's degree in engineering. He is a professor-level senior engineer.

ZHU Tong, aged 52, currently the supervisor and director of the Party-Masses Work Department (Human Resources Department) of the Company. He served as deputy chief and chief of the Personnel Division of the Human Resources Department, and deputy director of the Party-Masses Work Department (Human Resources Department) of the Company. He graduated from North China Electric Power University with a master's degree in industrial engineering. He is a senior engineer.

WANG Yu, aged 51, currently the supervisor and deputy director of the Disciplinary Inspection and Audit Department of the Company. He previously served as the deputy director, director of the fund settlement centre of the Finance Department, chief of the second fund division and chief of the Fund Division of the Finance and Budget Department of the Company. He graduated from Ocean University of China, majoring in project management. He obtained a master's degree in engineering.

PROFILES OF DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT

Biographies of Senior Management

QIN Haifeng, aged 55, currently the vice president and member of CPC Committee of the Company. He previously served as vice president and CPC Leadership Group member of Jiangsu branch of the Company, executive director, president and deputy party secretary of CPC Leadership Group of Huaneng Xinjiang Energy Development Co., Ltd., president and deputy secretary of CPC Committee of Huaneng Shandong Power Generation Co., Ltd. and chairman and secretary of CPC Committee of Huaneng Gansu Energy Development Company Ltd.. He graduated from Xi'an Jiaotong University, majoring in electronic and information engineering and obtained a master's degree in engineering. He is a professor-level senior engineer.

DUAN Rui, aged 56, currently a member of the Party Committee of the Company, and secretary of the Discipline & Inspection Commission. He was leader of the Inspection Team of Huaneng Group and deputy director of the Department of Supervision, a member of the Discipline Inspection Group of Party Group, deputy secretary of directly affiliated party committee, the secretary of the Discipline Inspection Commission, a member of the Party Committee and secretary of the Discipline Inspection Commission of HIPDC. He majored in the economic management and graduated from the Party School of the Inner Mongolia Autonomous Region with a master degree. He is a professor-level senior economist.

HUANG Chaoquan, aged 58, currently the vice president, a member of Party Committee, Chairman of trade union and the Secretary to the Board of the Company. He was the director of the Board Office, manager of the Corporate Management Department and director of the Administration Department of the Company. He graduated from Harbin University of Science and Technology with a postgraduate degree in Management Engineering. He is a professor-level senior economist.

DU Canxun, aged 55, currently the vice president and member of CPC Committee of the Company. He previously served as the director of construction management bureau and the secretary of the CPC Committee of Huaneng Jinghong Hydropower Station, as well as the plant manager of Jinghong Power Plant, deputy director of Production Management Department of Huaneng Group, executive director and secretary of CPC Committee of Huaneng Tibet Yarlung Zangbo River Hydropower Development & Investment Company Ltd. and executive director and president of Tibet branch of Huaneng Group. He graduated from the School of Information Engineering of Central South University, majoring in control science and engineering and obtained a doctoral degree. He is a professor-level senior engineer.

Profiles of Resigned Directors, Supervisors and Senior Management

ZHAO Keyu, aged 57, was the chairman and secretary of the CPC Committee of the Company during the reporting period. He successively served as the Chief of the Planning and Development Department, Chief of Office, director and secretary of the Party Office of Huaneng Group, the president and deputy secretary of the CPC Committee of the Company. He graduated from Wuhan University, majoring in software engineering, and is postgraduate with a master's degree in engineering. He is a professor-level senior economist.

HUANG Jian, aged 61, was a director of the Company, a director of HIPDC and a director of Shandong Power Generation Co., Ltd. during the reporting period. He successively served as an assistant to the president of Huaneng Group, the chairman and secretary of the CPC Committee of Huaneng Capital Services Co., Ltd. and Huaneng Carbon Assets Co., Ltd.. Mr. Huang graduated from the Department of Accounting of Institute of Fiscal Science of the Ministry of Finance with a postgraduate degree of master in economics. He is a professor-level senior accountant.

LU Fei, aged 59, was a director of the Company, the Deputy Chief Economist of Huaneng Group, a director of HIPDC, chairman of the Supervisory Board of Huaneng Renewables Corporation Limited. He successively served as a director of Operation Coordination Department, director of Sales and Marketing Department and director of Budget and Comprehensive Planning Department of Huaneng Group. He graduated from School of Economics and Management of Tsinghua University with a master's degree of MBA majoring in business administration. He is a professor-level senior engineer.

TENG Yu, aged 60, was a director of the Company, the deputy chief accountant of Huaneng Group, director of China Huaneng Finance Corporation Limited, director of Huaneng Capital Services Co., Ltd. and director of North United Power Co., Ltd. during the reporting period. He successively served as deputy chief accountant, vice president, chief accountant and party member of Huaneng Hulun Buir Energy Development Co., Ltd., and director of Finance Department of Huaneng Group. He graduated from the Party School of the Central Committee of Communist Party with a degree majoring in economic management. He is a professor-level senior accountant.

PROFILES OF DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT

MI Dabin, aged 55, was a director of the Company, party secretary and chairman of Hebei Construction & Investment Group Co., Ltd. and chairman of Huihai Financing and Leasing Co., Ltd. during the reporting period. He successively served as a member of the standing committee of the Party committee, vice president, president, deputy party secretary, vice chairman of Hebei Construction & Investment Group Co., Ltd., president and chairman of Hebei Jointo Energy Investment Co., Ltd.. He was the chief engineer, vice president and president of Qinhuangdao Power Generation Co., Ltd., president of Qinhuangdao Qin Thermal Power Generation Co., Ltd., chairman of Hebei Xingtai Power Generation Limited, an assistant to the president and the head of Production and Operation Department of Hebei Construction & Investment Group Co., Ltd., president of Qinhuangdao Power Generation Co., Ltd. and president of Qinhuangdao Qin Thermal Power Generation Co., Ltd. and chairman of Hebei Xingtai Power Generation Co., Ltd.. He graduated from North China Electric Power University, majoring in power engineering, and holds a master's degree. He is a senior engineer.

CHENG Heng, aged 60, was a director of the Company, the vice president (group department president level) of the Energy Department of Jiangsu Guoxin Investment Group Limited, vice chairman of Jiangsu Changshu Electric Power Generating Company Limited, vice chairman of Jiangsu Ligang Electric Power Co., Ltd., and vice chairman of Yangcheng International Electric Power Co., Ltd. during the reporting period. He successively served as the deputy manager of the Planning Department of Jiangsu International Trust and Investment Corporation, vice president of Changshu Power Generation Co., Ltd., president of Energy Investment Division 2 of Jiangsu Provincial Investment Management Co., Ltd., and vice president of Jiangsu Provincial Investment Management Co., Ltd.. He is a university graduate with College education and an economist.

LIN Chong, aged 60, was a director of the Company, a member of Party Committee and the vice president of Fujian Investment & Development Group Co., Ltd., vice chairman of Fujian Sanming Nuclear Power Co., Ltd., vice chairman of Fujian Shuikou Power Generation Group Co., Ltd., a director of Fujian Motor Industry Group Co., Ltd. and director of Fujian Fuqing Nuclear Power Co., Ltd. during the reporting period. He successively served as the chairman of Fujian Zhongmin Energy Investment Co., Ltd., vice chairman of CNOOC Fujian Natural Gas Co. Ltd., vice chairman of Zhonghai Mintou (Fujian) Natural Gas Pipeline Co., Ltd. (中海閩投(福建)天然氣管道有限公司), vice chairman of CNOOC Fujian Zhangzhou Natural Gas Company Limited and a director of Xiamen King Long Motor Group Co., Ltd.. He graduated from Chongqing University where he majored in electric power system and its automation and holds a master's degree of science in engineering (postgraduate diploma). He is a senior engineer.

XU Mengzhou, aged 73, was an independent director of the Company and vice chairman of the Banking Law Research Institute of China Law Society during the reporting period. He served as a professor of Law School of Renmin University of China (RUC). He graduated from the RUC, with a doctor's degree in Economic Laws.

LIU Jizhen, aged 72, was an independent director of the Company, an academician of the Chinese Academy of Engineering, a director of the National Key Laboratory of New Energy Power System of North China Electric Power University, a chief scientist of the 973 Program, the vice president of the Chinese Society of Electrical Engineering and a fellow of the Institution of Engineering and Technology (FIET) during the reporting period. He successively served as the president of Wuhan University of Hydraulic and Electrical Engineering, president of North China Electric Power University, vice president of the China Electricity Council and vice president of the Chinese Society of Power Engineering. He is a professor and a doctoral supervisor.

XU Haifeng, aged 68, was an independent director of the Company during the reporting period. He successively served as the chairman and president of China Railway Express Co., Ltd., director and vice president of Beijing-Shanghai High Speed Railway Co., Ltd., the Executive Deputy Commander-in-Chief of the General Headquarters for the Construction of Beijing-Shanghai High Speed Railway of the Ministry of Railways, and vice chairman and president of Beijing-Shanghai High Speed Railway Co., Ltd.. He graduated from Beijing Jiaotong University, majoring in transportation organization and automation. He has an EMBA degree from the Guanghua School of Management of Peking University and holds a master's degree.

ZHANG Xianzhi, aged 66, was an independent director of the Company, a professor and a doctoral supervisor of Dongbei University of Finance and Economics and a national level outstanding teacher during the reporting period. He was serving concurrently as a managerial accounting consultant to the Ministry of Finance, independent director at Lingyuan Iron & Steel Co., Ltd. (淩源鋼鐵股份有限公司). He was formerly an accountant of Dalian City Transportation Bureau, a researcher of Dalian Economic Commission, vice dean of the accounting school of Dongbei University of Finance and Economics, and director of Sino-German Management and Control Research Centre, etc.. He graduated from Dongbei University of Finance and Economics and holds a bachelor's degree and master's degree in accounting and holds a doctorate degree in industrial economics.

PROFILES OF DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT

LI Shuqing, aged 60, was the chairman of the Supervisory Committee of the Company, deputy chief engineer of Huaneng Group, chairman and secretary of Communist Party Committee of HIPDC during the reporting period. He successively served as the vice president, a party member of the Company, the executive director, president and deputy party secretary of Huaneng Hulunbuir Energy Development Co., Ltd., chairman and secretary of Communist Party Committee of Huaneng Shandong Power Generation Co., Ltd.. He holds an EMBA degree from Guanghua School of Management of Peking University. He is a professor-level senior engineer.

MU Xuan, aged 48, was the vice chairman of the Supervisory Committee of the Company, vice president and member of Party Committee of Dalian City Investment Holding Group Co., Ltd. during the reporting period. He was the assistant to the president of Dalian Construction Investment Co., Ltd. and assistant to the president of Dalian Construction Investment Group Co., Ltd.. He graduated from Dongbei University of Finance and Economics, majoring in technical economy and management. He is a master degree postgraduate and a registered accountant.

GU Jianguo, aged 57, was a supervisor of the Company, the vice chairman of Nantong Industries Holdings Group Limited and director of Nantong Investment & Management Limited Company during the reporting period. He successively served as the chief of Nantong Investment Management Centre, chairman and president of Nantong Investment & Management Limited Company. He graduated from Nanjing University of Aeronautics and Astronautics with a bachelor's degree. He is an economist. He holds a Master of Business Administration from Antai College of Economics and Management (ACEM) at Shanghai Jiao Tong University.

XU Jianping, aged 55, was a supervisor, an assistant to the president and secretary to Party Committee of the Company during the reporting period. He successively served as the deputy manager, manager of the Human Resources Department and director of the Party Work Department (Human Resources Department) of the Company. He graduated from Huazhong University of Science and Technology, majoring in thermal power engineering, and obtained a Master's degree in Economics from Zhongnan University of Economics and Law, majoring in Finance. He is a professor-level senior engineer.

CHEN Shuping, aged 60, was the vice president and a member of CPC Committee of the Company. He was the manager of Engineering Management Department of the Company, director of Material Department, director of Purchasing Management Department and director of Construction Department of Huaneng Group. He graduated from water conservancy and hydropower engineering construction major of Dalian University of Technology with a college degree, bachelor of engineering. He is a professor-level senior engineer.

FU Qiyang, aged 60, was the chief economist and a member of Party Committee of the Company during the reporting period. He successively served as the manager of Marketing Department of the Company, president and party secretary of Huaneng Hunan Branch. He graduated from the Business Administration Major of University of Science and Technology Beijing, and the University of Texas at Arlington with an EMBA degree. He is a professor-level senior accountant.

CORPORATE INFORMATION

Legal Address of the Company	Huaneng Building 6 Fuxingmennei Street Xicheng District Beijing The People's Republic of China
Company Secretary	Huang Chaoquan Huaneng Building 6 Fuxingmennei Street Xicheng District Beijing The People's Republic of China
Authorized Representatives	Wang Kui Huang Chaoquan
Hong Kong Share Registrar	Hong Kong Registrars Limited Shops 1712-1716 17th Floor, Hopewell Centre 183 Queen's Road East Hong Kong

LEGAL ADVISERS TO THE COMPANY

As to PRC law	Haiwen & Partners 20th Floor, Fortune Finance Center No.5 Dong San Huan Central Road Chaoyang District Beijing The People's Republic of China
As to Hong Kong law	Haiwen & Partners LLP Suites 1101-1104, 11/F, One Exchange Square, 8 Connaught Place Central, Hong Kong

AUDITORS OF THE COMPANY

Domestic Auditors	Ernst & Young Hua Ming LLP 17/F, Ernst & Young Tower Oriental Plaza 1 East Chang'an Avenue Dongcheng District Beijing The PRC Zip Code:100738
Hong Kong Auditors	Ernst & Young *Registered Public Interest Entity Auditor* 27/F, One Taikoo Place 979 King's Road Quarry Bay, Hong Kong

LISTING INFORMATION

H Shares:	The Stock Exchange of Hong Kong Limited Stock Code: 902
A Shares:	Shanghai Stock Exchange Stock Code: 600011

PUBLICATIONS

The Company's 2023 interim report (A share version and H share version) was published in August 2023 and the 2023 annual report (A share version and H share version) will be published in April 2024. The Company shall, in compliance of the Shanghai Stock Exchange, prepare quarterly reports. Copies of the interim and annual reports will be made available at:

Beijing:	Huaneng Power International, Inc. Huaneng Building 6 Fuxingmennei Street Xicheng District Beijing The People's Republic of China Tel: (8610)-6322 6999 Fax: (8610)-6322 6888
Hong Kong:	Wonderful Sky Financial Group Limited 9th Floor, The Center 99 Queen's Road Central Hong Kong Tel: (852) 2851 1038 Fax: (852) 2815 1352
The website of the Company:	http://www.hpi.com.cn

GLOSSARY

Equivalent Availability Factor (EAF): Percentage on duration of usable hours on generating units in period hour, i.e.

$$EAF = \frac{\text{Available Hours (AH)} - \text{Equivalent Unit Derated Hours (EUNDH)}}{\text{Period Hour (PH)}} \times 100\%$$

Gross Capacity Factor (GCF):

$$GCF = \frac{\text{Gross Actual Generation (GAAG)}}{\text{Period Hour (PH)} \times \text{Gross Maximum Capacity (GMC)}} \times 100\%$$

Weighted Average Coal Consumption Rate for Power Sold: The standard of measurement on average consumption of coal for the production of every one kWh of electricity from a coal-fired generating unit. Unit: gram/kWh or g/kWh.

Weighted Average Coal Consumption Rate for Power Generated: The standard of measurement on average consumption of coal for the generation of every one kWh of electricity from a coal-fired generating unit. Unit: gram/kWh or g/kWh.

Weighted Average House Consumption: The rate of electricity consumption during power production versus power generating unit: %.

Utilization Hour: The operation hour coefficient converted from actual gross power generation of generating units to maximum gross capacity (or fixed capacity).

Capacity Rate: Ratio between average capacity and maximum capacity which indicates the difference in capacity. The larger the ratio, the more balanced the power production, and the higher the utilization of facilities.

Power Generation: Electricity generated by power plants (generating units) during the Reporting Period, or "power generation". It refers to the consumed generated electricity produced by generating units with power energy being processed and transferred, or the product of actual consumed electricity generated by generating units and actual operation hours of generating units.

Electricity Sold: Electricity sold by power plants to grid companies.

GW: Unit of power generation, = 10^9W, gigawatt
MW: = 10^6W, megawatt
kW: = 10^3W, kilowatt
kWh: Unit of power, kilowatt hour

INDEPENDENT AUDITOR'S REPORT

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To the shareholders of Huaneng Power International, Inc.
(Established in the People's Republic of China with limited liability)

OPINION

We have audited the consolidated financial statements of Huaneng Power International, Inc. (the "Company") and its subsidiaries (the "Group") set out on pages 132 to 385, which comprise the consolidated statement of financial position as at 31 December 2023, and the consolidated statement of comprehensive income, the consolidated statement of changes in equity and the consolidated statement of cash flows for the year then ended, and notes to the consolidated financial statements, including material accounting policy information.

In our opinion, the consolidated financial statements give a true and fair view of the consolidated financial position of the Group as at 31 December 2023, and of its consolidated financial performance and its consolidated cash flows for the year then ended in accordance with International Financial Reporting Standards ("IFRSs") issued by the International Accounting Standards Board ("IASB") and have been properly prepared in compliance with the disclosure requirements of the Hong Kong Companies Ordinance.

BASIS FOR OPINION

We conducted our audit in accordance with International Standards on Auditing ("ISAs") issued by the International Auditing and Assurance Standards Board ("IAASB"). Our responsibilities under those standards are further described in the *Auditor's responsibilities for the audit of the consolidated financial statements* section of our report. We are independent of the Group in accordance with the Code of Ethics for Professional Accountants (the "Code") issued by the Hong Kong Institute of Certified Public Accountants, and we have fulfilled our other ethical responsibilities in accordance with the Code. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

KEY AUDIT MATTERS

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the consolidated financial statements of the current period. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters. For each matter below, our description of how our audit addressed the matter is provided in that context.

We have fulfilled the responsibilities described in the *Auditor's responsibilities for the audit of the consolidated financial statements* section of our report, including in relation to these matters. Accordingly, our audit included the performance of procedures designed to respond to our assessment of the risks of material misstatement of the consolidated financial statements. The results of our audit procedures, including the procedures performed to address the matters below, provide the basis for our audit opinion on the accompanying consolidated financial statements.

INDEPENDENT AUDITOR'S REPORT

KEY AUDIT MATTERS *(Cont'd)*

Key audit matter	How our audit addressed the key audit matter
Impairment of property, plant and equipment	
At 31 December 2023, the Group held property, plant and equipment ("PPE") with the amount of RMB368,676 million, representing 80.22% of the Group's total non-current assets. As described in Notes 2(g), 2(l), 4(b) and 7 to the consolidated financial statements, the Group is required to review PPE for impairment whenever events or changes in circumstances indicate that their carrying amounts may not be recoverable. Management performed an impairment assessment on such PPE by determining the recoverable amounts of the cash-generating units ("CGUs") that the PPE were allocated to. As a result of the impairment assessment, impairment losses of RMB2,736 million were recognised by the Group for the year ended 31 December 2023. Auditing management's impairment assessment of PPE was complex due to the significant estimates and judgements involved in the projections of future cash flows, including the future sales volumes, fuel prices and discount rates applied to these forecasted future cash flows. These estimates and judgements may be significantly affected by changes in future market, policies or economic conditions.	We obtained an understanding of, evaluated the design of, and tested the operating effectiveness of controls over the PPE impairment assessment process including tests of controls over management's review of the significant assumptions used in the impairment assessment. Among other audit procedures performed, we evaluated management's assessment of impairment indicators, compared the methodology used by the Group to industry practice and tested the underlying data used in the projections. We also assessed the significant assumptions used in the calculations, which included, amongst others, the future sales volumes, fuel prices, and discount rates. We compared fuel prices to external industry outlook reports and analysed the history of management's estimates. In addition, we involved our valuation specialists to assist us with assessing the valuation methodologies and the assumptions used, including the discount rates. We evaluated the sensitivity of the significant assumptions described above by assessing the changes to the recoverable amounts of the CGUs resulting from changes in these assumptions. We also assessed the adequacy of the Group's disclosures regarding the impairment assessment.

KEY AUDIT MATTERS *(Cont'd)*

Key audit matter	How our audit addressed the key audit matter
Impairment of goodwill	
At 31 December 2023, the Group's goodwill was RMB14,510 million. As described in Notes 2(k), 2(l), 4(a) and 14 to the consolidated financial statements, the Group is required to, at least annually, perform impairment assessments of goodwill. Goodwill was allocated to each CGU or groups of CGUs for impairment testing. A goodwill impairment loss is recognised if the carrying amount of the CGU exceeds its recoverable amount. As a result of the impairment assessment, impairment losses of RMB295 million were recognised by the Group for the year ended 31 December 2023. Auditing management's goodwill impairment assessment was complex because the determination of the recoverable amount of the underlying CGUs involves significant estimates and judgements, including the future sales volumes, fuel prices, gross margins and terminal growth rates used to estimate future cash flows and discount rates applied to these forecasted future cash flows of the underlying CGUs. These estimates and judgements may be significantly affected by changes in future market, policies or economic conditions.	We obtained an understanding of, evaluated the design of, and tested the operating effectiveness of controls over the impairment assessment process, including testing controls over management's review of the key assumptions used in the goodwill impairment assessment. Among other audit procedures performed, we compared the methodology used by the Group to industry practice, and tested the underlying data used in the forecast. We evaluated management's key assumptions used in the calculations, which included, amongst others, the future sales volumes, fuel prices, gross margins, terminal growth rates and discount rates. We compared fuel prices to external industry outlook reports and analysed the history of management's estimates. In addition, we involved our valuation specialists to assist us with assessing the valuation methodologies and the assumptions used, including the discount rates. We evaluated the sensitivity of the key assumptions described above by assessing the changes to the recoverable amounts of the underlying CGUs resulting from changes in these assumptions. We also assessed the adequacy of the Group's disclosures regarding the impairment assessment.

INDEPENDENT AUDITOR'S REPORT

KEY AUDIT MATTERS *(Cont'd)*

Key audit matter	How our audit addressed the key audit matter
Recognition of deferred income tax assets	
At 31 December 2023, the Group had deferred income tax assets of RMB6,289 million from deductible temporary differences and tax losses carried forward before offsetting. At 31 December 2023, the Group did not recognise deferred income tax assets related to deductible temporary differences of RMB21,260 million and unused tax losses of RMB29,479 million. As described in Notes 2(x)(iii), 4(c) and 31 to the consolidated financial statements, the Group recognised deferred income tax assets to the extent that it is probable that future taxable profits and taxable temporary difference will be available to utilise the deductible temporary differences and tax losses carried forward. Auditing management's recognition of deferred income tax assets is complex because it requires significant estimation and judgement to evaluate management's significant assumptions, including future taxable profits, future tax rates, the reversal of deductible and taxable temporary differences, and the possible utilisation of tax losses carried forward that could be significantly affected by changes in tax law framework and future market, policies or economic conditions.	We obtained an understanding of, evaluated the design of, and tested the operating effectiveness of controls over the recognition of deferred income tax assets, including testing controls over management's review of the significant assumptions used in the taxable profit forecast. Among other audit procedures performed, we compared the future tax rates, the deductible and taxable temporary differences, and the possible utilisation of tax losses carried forward, with the tax law framework. We recalculated the Group's utilisation of tax losses carried forward and reversal of deductible temporary differences in management's calculation and compared these amounts to the taxable profit and taxable temporary differences for the respective years. Further, we evaluated management's significant assumptions in determining the future available taxable profits, for example, the future sales volumes and fuel prices. We compared fuel prices to external industry outlook reports and analysed the history of management's estimates. We also tested the underlying data used in the taxable profit forecast, and compared management's assumptions described above to the assumptions that management used to perform the impairment assessment of PPE and goodwill. We also assessed the adequacy of the Group's disclosures regarding the deferred income tax assets.

INDEPENDENT AUDITOR'S REPORT

OTHER INFORMATION INCLUDED IN THE ANNUAL REPORT

The directors of the Company are responsible for the other information. The other information comprises the information included in the Annual Report, other than the consolidated financial statements and our auditor's report thereon.

Our opinion on the consolidated financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

RESPONSIBILITIES OF THE DIRECTORS FOR THE CONSOLIDATED FINANCIAL STATEMENTS

The directors of the Company are responsible for the preparation of the consolidated financial statements that give a true and fair view in accordance with IFRSs issued by the IASB and the disclosure requirements of the Hong Kong Companies Ordinance, and for such internal control as the directors determine is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, the directors of the Company are responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors of the Company either intend to liquidate the Group or to cease operations or have no realistic alternative but to do so.

The directors of the Company are assisted by the Audit Committee in discharging their responsibilities for overseeing the Group's financial reporting process.

AUDITOR'S RESPONSIBILITIES FOR THE AUDIT OF THE CONSOLIDATED FINANCIAL STATEMENTS

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Our report is made solely to you, as a body, and for no other purpose. We do not assume responsibility towards or accept liability to any other person for the contents of this report.

INDEPENDENT AUDITOR'S REPORT

AUDITOR'S RESPONSIBILITIES FOR THE AUDIT OF THE CONSOLIDATED FINANCIAL STATEMENTS *(Cont'd)*

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with ISAs, we exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the directors.

- Conclude on the appropriateness of the directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

AUDITOR'S RESPONSIBILITIES FOR THE AUDIT OF THE CONSOLIDATED FINANCIAL STATEMENTS *(Cont'd)*

We communicate with the Audit Committee regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide the Audit Committee with a statement that we have complied with relevant ethical requirements regarding independence and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, actions taken to eliminate threats or safeguards applied.

From the matters communicated with the Audit Committee, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

The engagement partner on the audit resulting in this independent auditor's report is Wang Jun Ying.

Ernst & Young
Certified Public Accountants
Hong Kong

19 March 2024

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB, except per share data)

	Notes	For the year ended 31 December 2023	2022
Operating revenue	5	**254,396,695**	246,724,789
Tax and levies on operations		**(1,634,847)**	(1,442,438)
Operating expenses, net			
Fuel		**(156,569,158)**	(170,506,913)
Maintenance		**(4,456,767)**	(4,485,105)
Impairment losses on financial and contract assets		**(129,009)**	(48,257)
Depreciation	6	**(25,492,280)**	(24,380,204)
Labour	37	**(17,762,377)**	(16,147,626)
Service fees on transmission and transformer facilities of Huaneng International Power Development Company (the "HIPDC")		**(47,947)**	(47,947)
Purchase of electricity		**(11,978,026)**	(16,357,899)
Others, net	6	**(17,765,337)**	(15,683,187)
Total operating expenses		**(234,200,901)**	(247,657,138)
Profit/(loss) from operations		**18,560,947**	(2,374,787)
Interest income		**506,878**	339,258
Financial expenses, net			
Interest expense	6	**(8,938,084)**	(9,962,125)
Exchange (loss)/gain and bank charges, net		**(437,167)**	136,151
Total financial expenses, net		**(9,375,251)**	(9,825,974)
Share of profits less losses of associates and joint ventures	8	**854,156**	1,042,108
Other investment gain	6	**1,930,412**	5,438
Profit/(loss) before income tax expense	6	**12,477,142**	(10,813,957)
Income tax expense	33	**(3,707,733)**	(158,658)
Net Profit/(loss)		**8,769,409**	(10,972,615)

The notes on pages 145 to 385 are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB, except per share data)

	Notes	For the year ended 31 December 2023	2022
Other comprehensive loss, net of tax			
Items that will not be reclassified to profit or loss in subsequent periods:			
Fair value changes of other equity instrument investments		**(54,457)**	(12,782)
Share of other comprehensive income of joint ventures and associates		**(29,525)**	32,960
Income tax effect		**13,935**	3,324
Items that may be reclassified subsequently to profit or loss:			
Share of other comprehensive income of joint ventures and associates		**12,147**	25,616
Cash flow hedges:			
Effective portion of changes in fair value of hedging instruments		**(31,759)**	269,361
Reclassification adjustments for income/(losses) included in profit or loss		**162,362**	(1,401,283)
Exchange differences on translation of foreign operations		**(168,052)**	446,350
Income tax effect		**(22,203)**	192,427
Other comprehensive loss, net of tax		**(117,552)**	(444,027)
Total comprehensive income/(loss)		**8,651,857**	(11,416,642)

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB, except per share data)

	Notes	For the year ended 31 December 2023	2022
Net profit/(loss) attributable to:			
– Equity holders of the Company		8,357,460	(8,026,233)
– Non-controlling interests		411,949	(2,946,382)
		8,769,409	(10,972,615)
Total comprehensive income/(loss) attributable to:			
– Equity holders of the Company		8,653,954	(8,114,708)
– Non-controlling interests		(2,097)	(3,301,934)
		8,651,857	(11,416,642)
Earnings/(losses) per share attributable to the shareholders of the Company (expressed in RMB per share)			
– Basic and diluted	34	0.35	(0.65)

The notes on pages 145 to 385 are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENT OF FINANCIAL POSITION

AS AT 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB)

	Notes	As at 31 December 2023	2022
ASSETS			
Non-current assets			
Property, plant and equipment	7	**368,675,819**	336,126,522
Right-of-use assets	42	**21,024,661**	18,998,833
Investments in associates and joint ventures	8	**22,712,467**	24,015,630
Investment properties		**626,239**	632,565
Other equity instrument investments	10	**642,923**	708,912
Power generation licence	11	**4,312,514**	4,156,846
Mining rights	12	**1,609,115**	1,611,486
Deferred income tax assets	31	**4,150,104**	5,632,709
Derivative financial assets	13	**616**	3,570
Goodwill	14	**14,509,739**	14,384,909
Other non-current assets	15	**21,307,658**	19,227,929
Total non-current assets		**459,571,855**	425,499,911
Current assets			
Inventories	16	**11,899,339**	12,701,908
Other receivables and assets	17	**14,750,293**	14,076,384
Accounts and notes receivable	18	**47,140,674**	42,654,332
Contract assets	5(c)	**44,583**	68,738
Derivative financial assets	13	**59,411**	44,925
Bank balances and cash	35	**16,849,858**	17,175,575
Total current assets		**90,744,158**	86,721,862
Total assets		**550,316,013**	512,221,773

The notes on pages 145 to 385 are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENT OF FINANCIAL POSITION

AS AT 31 DECEMBER 2023

(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB)

	Notes	As at 31 December 2023	2022
EQUITY AND LIABILITIES			
Equity attributable to equity holders of the Company			
Share capital	20	**15,698,093**	15,698,093
Other equity instruments	21	**79,626,169**	62,083,704
Capital surplus		**23,571,376**	23,710,686
Surplus reserves	22	**8,140,030**	8,140,030
Reserve funds		**479,264**	117,308
Currency translation differences		**(366,687)**	(602,823)
Retained earnings		**11,614,870**	6,517,524
		138,763,115	115,664,522
Non-controlling interests	41	**40,591,363**	19,651,537
Total equity		**179,354,478**	135,316,059
Non-current liabilities			
Long-term loans	24	**162,347,839**	151,677,526
Long-term bonds	25	**28,038,374**	39,062,047
Lease liabilities	42	**6,714,600**	5,622,536
Deferred income tax liabilities	31	**2,593,143**	2,169,841
Derivative financial liabilities	13	**454,637**	245,613
Other non-current liabilities	26	**6,813,588**	6,794,804
Total non-current liabilities		**206,962,181**	205,572,367

The notes on pages 145 to 385 are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENT OF FINANCIAL POSITION

AS AT 31 DECEMBER 2023

(Prepared in accordance with International Financial Reporting Standards)

(Amounts expressed in thousands of RMB)

	Notes	As at 31 December 2023	2022
EQUITY AND LIABILITIES *(Continued)*			
Current liabilities			
Accounts payable and other liabilities	27	**59,851,144**	54,472,701
Contract liabilities	5(c)	**3,380,245**	3,348,828
Taxes payable	28	**2,363,028**	1,647,373
Dividends payable		**554,684**	617,576
Derivative financial liabilities	13	**240,177**	417,237
Short-term bonds	29	**6,110,228**	6,312,777
Short-term loans	30	**57,232,729**	83,573,497
Current portion of long-term loans	24	**21,076,582**	19,129,989
Current portion of long-term bonds	25	**11,829,844**	730,336
Current portion of lease liabilities	42	**1,279,447**	1,009,339
Current portion of other non-current liabilities	26	**81,246**	73,694
Total current liabilities		**163,999,354**	171,333,347
Total liabilities		**370,961,535**	376,905,714
Total equity and liabilities		**550,316,013**	512,221,773

These financial statements were approved for issue by the Board of Directors on 19 March 2024 and were signed on its behalf by.

Wang Kui
Director

Huang Lixin
Director

The notes on pages 145 to 385 are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

FOR THE YEAR ENDED 31 DECEMBER 2023

(Prepared in accordance with International Financial Reporting Standards)

(Amounts expressed in thousands of RMB)

	Attributable to equity holders of the Company														
			Capital surplus												
	Share capital	Other equity instruments	Share premium	Hedging reserve	Fair value reserve of financial assets at fair value through other comprehensive income	Other reserve in other comprehensive income	Other capital reserve	Subtotal	Surplus reserves	Reserve funds	Currency translation differences	Retained earnings	Total	Non-controlling interests	Total equity
Balance as at 1 January 2023	15,698,093	62,083,704	24,770,682	(570,194)	368,078	(81,735)	(776,145)	23,710,686	8,140,030	117,308	(602,823)	6,517,524	115,664,522	19,651,537	135,316,059
Profit for the year	-	2,916,280	-	-	-	-	-	-	-	-	-	5,441,180	8,357,460	411,949	8,769,409
Other comprehensive income/(loss) for the year:															
Fair value changes of other equity investment instruments, net of tax	-	-	-	-	(40,522)	-	-	(40,522)	-	-	-	-	(40,522)	-	(40,522)
Share of other comprehensive income of investees – accounted for under the equity method, net of tax	-	-	-	-	(29,525)	12,147	-	(17,378)	-	-	-	-	(17,378)	-	(17,378)
Changes in fair value of effective portion and reclassification of cash flow hedges, net of tax	-	-	-	118,258	-	-	-	118,258	-	-	-	-	118,258	(9,858)	108,400
Currency translation differences	-	-	-	-	-	-	-	-	-	-	236,136		236,136	(404,188)	(168,052)
Total comprehensive income/(loss) for the year	-	2,916,280	-	118,258	(70,047)	12,147	-	60,358	-	-	236,136	5,441,180	8,653,954	(2,097)	8,651,857

The notes on pages 145 to 385 are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

FOR THE YEAR ENDED 31 DECEMBER 2023

(Prepared in accordance with International Financial Reporting Standards)

(Amounts expressed in thousands of RMB)

	Attributable to equity holders of the Company														
			Capital surplus												
	Share capital	Other equity instruments	Share premium	Hedging reserve	Fair value reserve of financial assets at fair value through other comprehensive income	Other reserve in other comprehensive income	Other capital reserve	Subtotal	Surplus reserves	Reserve funds	Currency translation differences	Retained earnings	Total	Non-controlling interests	Total equity
2022 dividends	-	-	-	-	-	-	-	-	-	-	-	-	-	(680,385)	(680,385)
Issue of other equity instruments (Note 21)	-	34,000,000	-	-	-	-	(19,876)	(19,876)	-	-	-	-	33,980,124	-	33,980,124
Redemption of other equity instruments (Note 21)	-	(17,000,000)	-	-	-	-	-	-	-	-	-	-	(17,000,000)	-	(17,000,000)
Cumulative distribution of other equity instruments (Note 21)	-	(2,373,815)	-	-	-	-	-	-	-	-	-	-	(2,373,815)	(54,929)	(2,428,744)
Net capital injection from non-controlling interests of subsidiaries	-	-	-	-	-	-	(136,921)	(136,921)	-	-	-	-	(136,921)	21,683,544	21,546,623
Share of other capital reserve of investees accounted for under the equity method	-	-	-	-	-	-	(25,928)	(25,928)	-	-	-	-	(25,928)	-	(25,928)
Acquisition of non-controlling interests of subsidiaries	-	-	-	-	-	-	4,422	4,422	-	-	-	-	4,422	(4,422)	-
Disposal of equity investments at fair value through other comprehensive income	-	-	-	-	(16,559)	-	-	(16,559)	-	-	-	16,559	-	-	-
Transfer from retained earnings	-	-	-	-	-	-	-	-	-	361,956	-	(361,956)	-	-	-
Others	-	-	-	-	-	-	(4,806)	(4,806)	-	-	-	1,563	(3,243)	(1,885)	(5,128)
Balance as at 31 December 2023	15,698,093	79,626,169	24,770,682	(451,936)	281,472	(69,588)	(959,254)	23,571,376	8,140,030	479,264	(366,687)	11,614,870	138,763,115	40,591,363	179,354,478

The notes on pages 145 to 385 are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

FOR THE YEAR ENDED 31 DECEMBER 2023

(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB)

	Attributable to equity holders of the Company														
			Capital surplus												
	Share capital	Other equity instruments	Share premium	Hedging reserve	Fair value reserve of financial assets at fair value through other comprehensive income	Other reserve in other comprehensive income	Other capital reserve	Subtotal	Surplus reserves	Reserve funds	Currency translation differences	Retained earnings	Total	Non-controlling interests	Total equity
Balance as at 1 January 2022	15,698,093	48,417,977	24,770,682	407,974	349,680	(107,351)	246,517	25,667,502	8,140,030	–	(1,443,398)	16,846,951	113,327,155	20,509,045	133,836,200
Profit/(loss) for the year	–	2,191,950	–	–	–	–	–	–	–	–	–	(10,218,183)	(8,026,233)	(2,946,382)	(10,972,615)
Other comprehensive income/(loss) for the year:															
Fair value changes of other equity investment instruments, net of tax	–	–	–	–	(9,458)	–	–	(9,458)	–	–	–	–	(9,458)	–	(9,458)
Share of other comprehensive income of investees – accounted for under the equity method, net of tax	–	–	–	–	32,960	25,616	–	58,576	–	–	–	–	58,576	–	58,576
Changes in fair value of effective portion and reclassification of cash flow hedges, net of tax	–	–	–	(978,168)	–	–	–	(978,168)	–	–	–	–	(978,168)	38,673	(939,495)
Currency translation differences	–	–	–	–	–	–	–	–	–	–	840,575	–	840,575	(394,225)	446,350
Total comprehensive income/(loss) for the year	–	2,191,950	–	(978,168)	23,502	25,616	–	(929,050)	–	–	840,575	(10,218,183)	(8,114,708)	(3,301,934)	(11,416,642)

The notes on pages 145 to 385 are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

FOR THE YEAR ENDED 31 DECEMBER 2023

(Prepared in accordance with International Financial Reporting Standards)

(Amounts expressed in thousands of RMB)

	Attributable to equity holders of the Company														
			Capital surplus												
	Share capital	Other equity instruments	Share premium	Hedging reserve	Fair value reserve of financial assets at fair value through other comprehensive income	Other reserve in other comprehensive income	Other capital reserve	Subtotal	Surplus reserves	Reserve funds	Currency translation differences	Retained earnings	Total	Non-controlling interests	Total equity
2021 dividends	–	–	–	–	–	–	–	–	–	–	–	–	–	(919,634)	(919,634)
Issue of other equity instruments	–	22,550,000	–	–	–	–	–	–	–	–	–	–	22,550,000	–	22,550,000
Redemption of other equity instruments	–	(9,000,000)	–	–	–	–	–	–	–	–	–	–	(9,000,000)	–	(9,000,000)
Cumulative distribution of other equity instruments	–	(2,136,535)	–	–	–	–	–	–	–	–	–	–	(2,136,535)	–	(2,136,535)
Net capital injection from non-controlling interests of subsidiaries	–	–	–	–	–	–	–	–	–	–	–	–	–	3,316,945	3,316,945
Share of other capital reserve of investees accounted for under the equity method	–	–	–	–	–	–	170,701	170,701	–	–	–	–	170,701	–	170,701
Acquisition of non-controlling interests of subsidiaries	–	–	–	–	–	–	6,857	6,857	–	–	–	–	6,857	4,165	11,022
Disposal of equity investments at fair value through other comprehensive income	–	–	–	–	(5,104)	–	–	(5,104)	–	–	–	5,104	–	–	–
Transfer from retained earnings	–	–	–	–	–	–	–	–		117,308		(117,308)	–	–	–
Others	–	60,312	–	–	–	–	(1,200,220)	(1,200,220)	–	–	–	960	(1,138,948)	42,950	(1,095,998)
Balance as at 31 December 2022	15,698,093	62,083,704	24,770,682	(570,194)	368,078	(81,735)	(776,145)	23,710,686	8,140,030	117,308	(602,823)	6,517,524	115,664,522	19,651,537	135,316,059

The notes on pages 145 to 385 are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENT OF CASH FLOWS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB)

	Notes	For the year ended 31 December 2023	2022
OPERATING ACTIVITIES			
Profit/(loss) before income tax expense		**12,477,142**	(10,813,957)
Adjustments to reconcile profit/(loss) before income tax expense to net cash provided by operating activities:			
Depreciation of property, plant and equipment	6	**24,679,041**	23,372,667
Depreciation of investment property	6	**24,541**	21,791
Depreciation of right-of-use assets	6	**788,698**	985,746
Provision for impairment losses on property, plant and equipment	6	**2,735,886**	1,823,978
Provision for impairment of goodwill	6	**295,001**	897,524
Provision for impairment of other non-current assets	6	**65,234**	400,194
Amortisation of other non-current assets	6	**239,480**	107,638
Recognition of provision for loss allowance of receivables		**129,009**	48,257
Recognition of provision for inventory obsolescence	6	**40,781**	6,486
Other investment gain	6	**(1,930,412)**	(5,438)
Net loss/(gain) on disposal of non-current assets	6	**354,812**	(128,837)
Share of profits less losses of associates and joint ventures	8	**(854,156)**	(1,042,108)
Interest income		**(506,878)**	(339,258)
Interest expense	6	**8,938,084**	9,962,125
Others		**27,130**	(1,327,978)
Changes in working capital:			
Inventories		**755,677**	4,103,453
Other receivables and assets		**419,206**	(701,844)
Accounts and notes receivable		**(4,490,918)**	1,150,951
Contract assets		**(8,837)**	(166,487)
Restricted cash		**76,580**	(25,741)
Accounts payable and other liabilities		**(1,468,649)**	(1,230,816)
Contract liabilities		**31,737**	68,444
Taxes payable		**3,435,228**	5,257,370
Interest received		**506,878**	339,258
Income tax expense paid		**(1,263,177)**	(243,868)
Net cash provided by operating activities		**45,497,118**	32,519,550

CONSOLIDATED STATEMENT OF CASH FLOWS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB)

	Notes	For the year ended 31 December	
		2023	2022
INVESTING ACTIVITIES			
Cash dividends and investment gains received		**3,253,055**	697,287
Proceeds from disposal of investments in an associate and other equity instrument investments		**1,419,761**	7,376
Proceeds from disposal of property, plant and equipment, land use rights and other non-current assets		**162,012**	448,543
Payment for the purchase of property, plant and equipment		**(58,682,654)**	(40,584,836)
Capital injections for investments in associates and joint ventures		**(632,028)**	(452,010)
Others		**(49,195)**	53,762
Net cash used in investing activities		**(54,529,049)**	(39,829,878)

The notes on pages 145 to 385 are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENT OF CASH FLOWS

FOR THE YEAR ENDED 31 DECEMBER 2023

(Prepared in accordance with International Financial Reporting Standards)

(Amounts expressed in thousands of RMB)

	Notes	For the year ended 31 December 2023	2022
FINANCING ACTIVITIES			
Issuance of short-term bonds		**65,000,000**	41,800,000
Repayments of short-term bonds		**(65,200,000)**	(43,700,000)
Proceeds from short-term loans		**84,781,704**	149,806,702
Repayments of short-term loans		**(111,101,966)**	(158,059,984)
Proceeds from long-term loans		**70,943,748**	74,390,113
Repayments of long-term loans		**(58,692,960)**	(59,249,646)
Issuance of long-term bonds		**–**	9,300,000
Repayments of long-term bonds		**–**	(6,500,000)
Interest paid		**(11,657,624)**	(13,013,654)
Net proceeds from the issuance of other equity instruments		**33,980,124**	22,550,000
Redemption of other equity instruments		**(17,000,000)**	(9,000,000)
Net capital injection from non-controlling interests of subsidiaries		**21,683,544**	3,316,945
Dividends paid to non-controlling interests of subsidiaries		**(798,206)**	(1,343,510)
Lease payments		**(3,130,008)**	(2,327,866)
Others		**(88,822)**	(137,613)
Net cash provided by financing activities		**8,719,534**	7,831,487
Effect of foreign exchange rate changes, net		**(54,076)**	441,124
NET (DECREASE)/INCREASE IN CASH AND CASH EQUIVALENTS		**(366,473)**	962,283
Cash and cash equivalents as at beginning of the year		**16,517,108**	15,554,825
CASH AND CASH EQUIVALENTS AS AT END OF THE YEAR	35	**16,150,635**	16,517,108

The notes on pages 145 to 385 are an integral part of these consolidated financial statements.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

1 COMPANY ORGANISATION AND PRINCIPAL ACTIVITIES

Huaneng Power International, Inc. (the "Company") was established in the People's Republic of China (the "PRC") as a Sino-foreign joint stock limited company on 30 June 1994. The registered address of the Company is Huaneng Building, 6 Fuxingmennei Street, Xicheng District, Beijing, the PRC. The Company and its subsidiaries (collectively, the "Group") are principally engaged in the generation and sale of electric power to the respective regional or provincial grid companies in the PRC, the Republic of Singapore ("Singapore") and the Islamic Republic of Pakistan ("Pakistan"). The Company conducts its business in Singapore through SinoSing Power Pte Ltd. ("SinoSing Power") and its subsidiaries and in Pakistan through Huaneng Shandong Ruyi (Hong Kong) Energy Co., Ltd. ("Hong Kong Energy") and its subsidiaries.

The directors consider Huaneng International Power Development Corporation ("HIPDC") and China Huaneng Group Co., Ltd. ("Huaneng Group") as controlling shareholders of the Company, with HIPDC being the parent company and Huaneng Group being the ultimate parent company of the Company, respectively. Both HIPDC and Huaneng Group are established in the PRC.

2 MATERIAL ACCOUNTING POLICIES

The material accounting policies adopted in the preparation of these financial statements are set out below. These policies have been consistently applied to all the years presented, unless otherwise stated.

(a) Basis of preparation

These financial statements have been prepared in accordance with IFRSs as issued by the International Accounting Standards Board (the "IASB") and the disclosure requirements of the Hong Kong Companies Ordinance. These financial statements also comply with the applicable disclosure provisions of the Rules Governing the Listing of Securities on the Stock Exchange of Hong Kong Limited. These financial statements have been prepared under the historical cost convention, except for the financial assets at fair value through other comprehensive income, financial assets at fair value through profit or loss and derivative financial assets and liabilities.

As at 31 December 2023, the Group had net current liabilities of approximately RMB73.26 billion. Taking into consideration the unutilised banking facilities of exceeding approximately RMB310.0 billion as at 31 December 2023, the Group is expected to refinance certain of its short-term loans and bonds and also to consider alternative sources of financing, where applicable and when needed. Therefore, the directors of the Company are of the opinion that the Group will be able to meet its liabilities as and when they fall due within the next twelve months and accordingly, these consolidated financial statements are prepared on a going concern basis.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(b) Changes in accounting policies

The Group has adopted the following new and revised IFRSs for the first time for the current year's consolidated financial statements.

IFRS 17	*Insurance Contracts*
Amendments to IAS 1 and IFRS Practice Statement 2	*Disclosure of Accounting Policies*
Amendments to IAS 8	*Definition of Accounting Estimates*
Amendments to IAS 12	*Deferred Tax related to Assets and Liabilities arising from a Single Transaction*
Amendments to IAS 12	*International Tax Reform – Pillar Two Model Rules*

The nature and the impact of the new and revised IFRSs that are applicable to the Group are described below:

(i) Amendments to IAS 1 and IFRS Practice Statement 2 *Disclosure of Accounting Policies*

Amendments to IAS 1 require entities to disclose their material accounting policy information rather than their significant accounting policies. Accounting policy information is material if, when considered together with other information included in an entity's financial statements, it can reasonably be expected to influence decisions that the primary users of general purpose financial statements make on the basis of those financial statements. Amendments to IFRS Practice Statement 2 *Making Materiality Judgements* provide non-mandatory guidance on how to apply the concept of materiality to accounting policy disclosures. The Group has applied the amendments since 1 January 2023. The amendments did not have any significant impact on the measurement, recognition or presentation of any items in the Group's consolidated financial statements.

(ii) Amendments to IAS 8 *Definition of Accounting Estimates*

Amendments to IAS 8 clarify the distinction between changes in accounting estimates and changes in accounting policies. Accounting estimates are defined as monetary amounts in financial statements that are subject to measurement uncertainty. The amendments also clarify how entities use measurement techniques and inputs to develop accounting estimates. The Group has applied the amendments to changes in accounting policies and changes in accounting estimates that occur on or after 1 January 2023. Since the Group's approach and policy align with the amendments, the amendments had no impact on the Group's consolidated financial statements.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023

(Prepared in accordance with International Financial Reporting Standards)

(Amounts expressed in thousands of RMB unless otherwise stated)

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(b) Changes in accounting policies *(Cont'd)*

The nature and the impact of the new and revised IFRSs that are applicable to the Group are described below: *(Cont'd)*

(iii) Amendments to IAS 12 *Deferred Tax related to Assets and Liabilities arising from a Single Transaction*

Amendments to IAS 12 *Deferred Tax related to Assets and Liabilities arising from a Single Transaction* narrow the scope of the initial recognition exception in IAS 12 so that it no longer applies to transactions that give rise to equal taxable and deductible temporary differences, such as leases and decommissioning obligations. Therefore, entities are required to recognise a deferred tax asset (provided that sufficient taxable profit is available) and a deferred tax liability for temporary differences arising from these transactions. The Group has applied the amendments on temporary differences related to leases as at 1 January 2022, with no cumulative effect recognised as an adjustment to the balance of retained profits or other component of equity as appropriate at that date. The net allowance of deferred tax assets and liabilities was equal to the amount originally recognised on a net basis and had no effect on the items in the consolidated statement of financial position presented on a net allowance basis.

Details of the effect of the amendments on the notes of the financial statements are as follows:

	As at 1 January 2022	Effect of adoption of amendments to IAS 12	As at 1 January 2022 (Restated)
Deferred income tax assets before offsetting	6,301,920	305,719	6,607,639
Deferred income tax liabilities before offsetting	(3,694,927)	(305,719)	(4,000,646)
Offset amount	(1,394,839)	(305,719)	(1,700,558)
Deferred income tax assets after offsetting	4,907,081	–	4,907,081
Deferred income tax liabilities after offsetting	(2,300,088)	–	(2,300,088)

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(b) Changes in accounting policies *(Cont'd)*

The nature and the impact of the new and revised IFRSs that are applicable to the Group are described below: *(Cont'd)*

(iii) Amendments to IAS 12 *Deferred Tax related to Assets and Liabilities arising from a Single Transaction* *(Cont'd)*

	As at 31 December 2022	Effect of adoption of amendments to IAS 12	As at 31 December 2022 (Restated)
Deferred income tax assets before offsetting	7,261,129	341,641	7,602,770
Deferred income tax liabilities before offsetting	(3,798,261)	(341,641)	(4,139,902)
Offset amount	(1,628,420)	(341,641)	(1,970,061)
Deferred income tax assets after offsetting	5,632,709	–	5,632,709
Deferred income tax liabilities after offsetting	(2,169,841)	–	(2,169,841)

The adoption of amendments to IAS 12 did not have any material impact on the consolidated statement of comprehensive income for the years ended 31 December 2023 and 2022.

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(b) Changes in accounting policies *(Cont'd)*

The nature and the impact of the new and revised IFRSs that are applicable to the Group are described below: *(Cont'd)*

(iv) Amendments to IAS 12 *International Tax Reform – Pillar Two Model Rules*

Amendments to IAS 12 *International Tax Reform – Pillar Two Model Rules* introduce a mandatory temporary exception from the recognition and disclosure of deferred taxes arising from the implementation of the Pillar Two model rules published by the Organisation for Economic Co-operation and Development. The amendments also introduce disclosure requirements for the affected entities to help users of the financial statements better understand the entities' exposure to Pillar Two income taxes, including the disclosure of current tax related to Pillar Two income taxes separately in the periods when Pillar Two legislation is effective and the disclosure of known or reasonably estimable information of their exposure to Pillar Two income taxes in periods in which the legislation is enacted or substantively enacted but not yet in effect. Entities are required to disclose the information relating to their exposure to Pillar Two income taxes in annual periods beginning on or after 1 January 2023. The Group has not yet applied the temporary exception during the current year because certain of the entities comprising the Group are operating in jurisdictions in which the Pillar Two tax law has not yet been enacted or substantively enacted. The Group is in the process of assessing the potential exposure arising from Pillar Two legislation based on the information available for the financial year ended 31 December 2023. Based on the assessment carried out so far, the Group has identified certain countries where the Pillar Two effective tax rates are likely to be lower than 15%. Quantitative information to indicate potential exposure to Pillar Two income taxes is currently not known or reasonably estimable.

(c) Consolidation

The consolidated financial statements include the financial statements of the Company and its subsidiaries (collectively referred to as the "Group") for the year ended 31 December 2023. A subsidiary is an entity (including a structured entity), directly or indirectly, controlled by the Company. Control is achieved when the Group is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee (i.e., existing rights that give the Group the current ability to direct the relevant activities of the investee).

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(c) Consolidation *(Cont'd)*

Generally, there is a presumption that a majority of voting rights results in control. When the Company has less than a majority of the voting or similar rights of an investee, the Group considers all relevant facts and circumstances in assessing whether it has power over an investee, including:

(a) the contractual arrangement with the other vote holders of the investee;

(b) rights arising from other contractual arrangements; and

(c) the Group's voting rights and potential voting rights.

The financial statements of the subsidiaries are prepared for the same reporting period as the Company, using consistent accounting policies. The results of subsidiaries are consolidated from the date on which the Group obtains control, and continue to be consolidated until the date that such control ceases.

Profit or loss and each component of other comprehensive income are attributed to the owners of the parent of the Group and to the non-controlling interests, even if this results in the non-controlling interests having a deficit balance. All intra-group assets and liabilities, equity, income, expenses and cash flows relating to transactions between members of the Group are eliminated in full on consolidation.

The Group reassesses whether or not it controls an investee if facts and circumstances indicate that there are changes to one or more of the three elements of control described above. A change in the ownership interest of a subsidiary, without a loss of control, is accounted for as an equity transaction.

If the Group loses control over a subsidiary, it derecognises the related assets (including goodwill), liabilities, any non-controlling interest, and the exchange fluctuation reserve; and recognises the fair value of any investment retained and any resulting surplus or deficit in profit or loss. The Group's share of components previously recognised in other comprehensive income is reclassified to profit or loss or retained profits, as appropriate, on the same basis as would be required if the Group had directly disposed of the related assets or liabilities.

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(c) Consolidation *(Cont'd)*

(i) Business combinations

The acquisition method is used to account for the business combinations of the Group (including business combinations under common controls). The consideration transferred for the acquisition of a subsidiary is the fair values of the assets transferred, the liabilities incurred to the former owners of the acquiree and the equity interests issued by the Group. Any contingent consideration is measured at fair value at the date of acquisition. If an obligation to pay contingent consideration that meets the definition of a financial instrument is classified as equity, then it is not remeasured and settlement is accounted for within equity. Otherwise, other contingent consideration is remeasured at fair value at each reporting date and subsequent changes in the fair value of the contingent consideration are recognised in profit or loss. Acquisition-related costs are expensed as incurred. Identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are measured initially at their fair values at the acquisition date. On an acquisition-by-acquisition basis, the Group recognises any non-controlling interests in the acquiree either at fair value or at the non-controlling interest's proportionate share of the recognised amounts of acquiree's identifiable net assets. The excess of the consideration transferred, the amount of any non-controlling interest in the acquiree and the acquisition-date fair value of any previous equity interest in the acquiree over the fair value of the identifiable net assets acquired is recorded as goodwill (Note 2(k)). If this consideration is lower than the fair value of the net assets of the subsidiary acquired, the difference is recognised in profit or loss. In a business combination achieved in stages, the acquirer shall remeasure its previously held equity interest in the acquiree at its acquisition-date fair value and recognise the resulting gain or loss, if any, in profit or loss or other comprehensive income, as appropriate. In prior reporting periods, the acquirer may have recognised changes in the value of its equity interest in the acquiree in other comprehensive income. If so, the amount that was recognised in other comprehensive income shall be recognised on the same basis as would be required if the acquirer had directly disposed of the previously held equity interest.

The Group determines that it has acquired a business when the acquired set of activities and assets includes an input and a substantive process that together significantly contribute to the ability to create outputs. The Group may elect to apply, or not apply, an optional test (the concentration test) to permit a simplified assessment of whether an acquired set of activities and assets is not a business, and the Group makes such an election separately for each transaction or other event. The concentration test is met if substantially all of the fair value of the gross assets acquired is concentrated in a single identifiable asset or group of similar identifiable assets. If the concentration test is met, the set of activities and assets is determined not to be a business and no further assessment is needed. If the concentration test is not met, or if the entity elects not to apply the test, the Group then perform further assessment to determine whether an acquisition meet the minimum requirements to be a business.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(c) Consolidation *(Cont'd)*

(i) Business combinations *(Cont'd)*

When an acquisition does not constitute an integrated set of activities and assets that is capable of being conducted and managed for the purpose of providing goods or services to customers, generating investment income (such as dividends or interest) or generating other income from ordinary activities, it is not defined as a business and therefore is identified as an asset acquisition.

(ii) Changes in ownership interests in subsidiaries

Transactions with non-controlling interests that do not result in loss of control are accounted for as equity transactions – that is, as transactions with the equity owners in their capacity as owners. The difference between fair value of any consideration paid and the relevant share acquired of the carrying value of net assets of the subsidiary is recorded in equity. Gains or losses on disposals to non-controlling interests are also recorded in equity.

When the Group loses control of a subsidiary, it is accounted for as a disposal of the entire interest in that subsidiary, with a resulting gain or loss being recognised in profit or loss. Any interest retained in that former subsidiary at the date when control is lost is recognised at fair value and this amount is regarded as the fair value on initial recognition of a financial asset (Note 2(m)) or, when appropriate, the cost on initial recognition of an investment in an associate or joint venture (Note 2(c)(iii)).

(iii) Associates and joint ventures

Associates are investees over which the Group has significant influence on the financial and operating decisions. A joint venture is an arrangement whereby the Group and other parties contractually agree to share control of the arrangement, and have rights to the net assets of the arrangement.

Investments in associates and joint ventures are initially recognised at cost and are subsequently measured using the equity method of accounting, unless it is classified as held for sale (or included in a disposal group that is classified as held for sale). The excess of the initial investment cost over the proportionate share of the fair value of identifiable net assets of investee acquired is included in the initial investment cost (Note 2(k)). Any shortfall of the initial investment cost to the proportionate share of the fair value of identifiable net assets of investee acquired is recognised in the current period profit or loss and long-term investment cost is adjusted accordingly.

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(c) Consolidation *(Cont'd)*

(iii) Associates and joint ventures *(Cont'd)*

When applying the equity method, the Group adjusts net profit or loss of the investees, including the fair value adjustments on the net identifiable assets of the associates and joint ventures and the adjustments to align with the accounting policies of the Company and the Company's financial reporting periods. The current period investment income is then recognised based on the proportionate share of the Group in the investees' net profit or loss. Net losses of investees are recognised to the extent of the carrying value of long-term equity investments and any other constituting long-term equity investments in investees that in substance form part of the investments in the investees. The Group continues to recognise investment losses and provision if they bear additional obligations which meet the recognition criteria.

The Group adjusts the carrying amount of the investment and directly recognises it into related other comprehensive income based on the proportionate share on the movements of the investees' other comprehensive income.

When the investees appropriate profit or declare dividends, the carrying value of long-term equity investments is reduced correspondingly by the proportionate share of the distribution.

The Group determines at each reporting date whether there is any objective evidence that the investment in the associate or the joint venture is impaired. If this is the case, the Group calculates the amount of impairment as the difference between the recoverable amount of the associate or the joint venture and its carrying value and recognises the amount in the consolidated statement of comprehensive income.

Profits or losses resulting from transactions between the Group and the associates and joint ventures are recognised in the Group's financial statements only to the extent of the unrelated third party investor's interests in the associates and joint ventures. Loss from transactions between the Group and the associates and joint ventures is fully recognised and not eliminated when there is evidence for asset impairment.

If an investment in an associate becomes an investment in a joint venture or vice versa, retained interest is not remeasured. Instead, the investment continues to be accounted for under the equity method.

Gains and losses arising from dilution of investments in associates and joint ventures are recognised in the consolidated statement of comprehensive income.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(c) Consolidation *(Cont'd)*

(iii) Associates and joint ventures *(Cont'd)*

In the Company's statement of financial position, investments in associates and joint ventures are stated at cost less provision for impairment losses (Note 2(l)) unless classified as held for sale (or included in a disposal group that is classified as held for sale). Investment income from investments in associates and joint ventures is accounted for by the Company based on dividends received and receivable.

In all other cases, when the Group ceases to have significant influence over an associate or joint control over a joint venture, it is accounted for as a disposal of the entire interest in that investee, with a resulting gain or loss being recognised in profit or loss. Any interest retained in that former investee at the date when significant influence or joint control is lost is recognised at fair value and this amount is regarded as the fair value on initial recognition of a financial asset (Note 2(m)).

(d) Separate financial statements of the Company

Investments in subsidiaries are accounted for at cost less impairment unless classified as held for sale (or included in a disposal group that is classified as held for sale). Cost also includes direct attributable costs of investment. Investment income is recognised when the subsidiaries declare dividend.

(e) Segment reporting

The Group determines the operating segment based on the internal organisation structure, management requirement and internal reporting system for purposes of presenting reportable segment information.

An operating segment represents a component of the Group that meets all the conditions below: (i) the component earns revenue and incurs expenses in its daily operating activities; (ii) chief operating decision maker of the Group regularly reviews the operating results of the component in order to make decisions on allocating resources and assessing performance; (iii) the financial position, operating results, cash flows and other related financial information of the component are available. When two or more operating segments exhibit similar economic characteristics and meet certain conditions, the Group combines them as one reportable segment.

(f) Foreign currency translation

(i) Functional and presentation currency

Items included in the financial statements of each of the Group are measured using the currency of the primary economic environment in which the entity operates (the "functional currency"). The consolidated financial statements are presented in Renminbi ("RMB"), which is the Company's functional and presentation currency.

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(f) Foreign currency translation *(Cont'd)*

(ii) Transactions and balances

Foreign currency transactions recorded by the entities in the Group are initially recorded using their respective functional currency rates prevailing at the dates of the transactions.

As at the end of reporting period, foreign currency monetary items are translated into functional currency at the spot exchange rate as at the end of reporting period. Exchange differences are directly expensed in current period profit or loss unless they arises from foreign currency loans borrowed for purchasing or construction of qualifying assets which is eligible for capitalisation or they arise from monetary items that qualify as hedging instruments in cash flow hedges which are recorded in other comprehensive income to the extent that the hedge is effective.

(iii) Foreign subsidiaries

The operating results and financial position of the foreign subsidiaries are translated into presentation currency as follows:

Asset and liability items in each statement of financial position of foreign operations are translated at the closing rates at the end of reporting period; equity items excluding retained earnings are translated at the spot exchange rates at the date of the transactions. Income and expense items in the statement of comprehensive income of the foreign operations are translated at exchange rates that approximate to those prevailing at the dates of the transactions. All resulting translation differences are recognised in other comprehensive income, except to the extent that the differences are attributable to non-controlling interests.

The cash flows denominated in foreign currencies and cash flows of overseas subsidiaries are translated at average exchange rates approximating the rates at the dates when cash flows incurred. The effect of the foreign currency translation on the cash and cash equivalents is presented in the statement of cash flows separately.

On the disposal of a foreign operation (that is, a disposal of the Group's entire interest in a foreign operation, or a disposal involving loss of control over a subsidiary that includes a foreign operation, a disposal involving loss of joint control over a joint ventures that includes a foreign operation, or a disposal involving loss of significant influence over an associate that includes a foreign operation), all of the exchange differences accumulated in equity in respect of that operation attributable to the equity holders of the Company are reclassified to profit or loss.

In the case of a partial disposal that does not result in the Group losing control over a subsidiary that includes a foreign operation, the proportionate share of accumulated exchange differences is re-attributed to non-controlling interests and are not recognised in profit or loss. For all other partial disposals (that is, reductions in the Group's ownership interest in associates or joint venture that includes a foreign operation that do not result in the Group losing significant influence or joint control), the proportionate share of the accumulated exchange differences is reclassified to profit or loss.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(g) Property, plant and equipment

Property, plant and equipment consists of dams, port facilities, buildings, electric utility plant in service, transportation facilities, others and construction-in-progress ("CIP"). Property, plant and equipment acquired or constructed are initially recognised at cost and carried at the net value of cost less accumulated depreciation and accumulated impairment loss, unless classified as held for sale (or included in a disposal group that is classified as held for sale).

CIP is stated at cost less any impairment losses, and is not depreciated. It is reclassified to the appropriate category of property, plant and equipment when completed and ready for use.

Subsequent costs about property, plant and equipment are included in the asset's carrying amount only when it is probable that future economic benefits associated with the item will flow to the Group and the cost of the item can be measured reliably. The carrying amount of the replaced part is derecognised. Other subsequent expenditures not qualified for capitalisation are charged in the current period profit or loss when they are incurred.

Depreciation of property, plant and equipment is provided based on book value of the asset less estimated residual value over the estimated useful life using straight-line method. For those impaired property, plant and equipment, depreciation is provided based on book value after deducting impairment provision over the estimated useful life of the asset. The estimated useful lives are as follows:

	Estimated useful lives
Dams	8 – 50 years
Port facilities	20 – 40 years
Buildings	8 – 30 years
Electric utility plant in service	5 – 30 years
Transportation facilities	8 – 27 years
Others	5 – 14 years

Where parts of an item of property, plant and equipment have different useful lives, the cost of the item is allocated on a reasonable basis between the parts and each part is depreciated separately. At the end of each year, the Group reviews the estimated useful lives, residual values and the depreciation method of the property, plant and equipment and make adjustment when necessary.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(g) Property, plant and equipment *(Cont'd)*

Property, plant and equipment is derecognised when it is disposed of, or is not expected to bring economic benefit through use or disposal. The amount of disposal proceeds arising from sale, transfer, disposal or write-off of the property, plant and equipment less book value and related tax expenses is recorded in 'operating expenses – others' in the statement of comprehensive income.

The carrying amount of property, plant and equipment is written down immediately to their recoverable amount when their carrying amount is greater than their recoverable amount (Note 2(l)).

(h) Investment property

Investment properties are land and/or buildings which are owned or held under a leasehold interest (Note 2(ac)), including the leasehold property held as a right-of-use asset to earn rental income and/or for capital appreciation. These include land held for a currently undetermined future use and property that is being constructed or developed for future use as investment property.

Investment properties are stated at cost. Depreciation of investment properties is provided based on book value of the asset less estimated residual value over the estimated useful life using straight-line method. For those impaired investment properties, depreciation is provided based on book value after deducting impairment provision over the estimated useful life of the asset. The estimated useful lives are as follows:

	Estimated useful lives
Land use rights	40 – 50 years
Buildings	30 years

Rental income from investment properties is accounted for as described in Note 2(aa).

(i) Power generation licence

The Group acquired the power generation licence as part of the business combination with Tuas Power Ltd. ("Tuas Power"). The power generation licence is initially recognised at fair value at the acquisition date. The licence has an indefinite useful life and is not amortised. The assessment that the licence has an indefinite useful life is based on the expected renewal of power generation licence without significant restriction and cost, together with the consideration on related future cash flows generated and the expectation of continuous operations. It is tested annually for impairment and carried at cost less accumulated impairment loss. The useful life of the power generation licence is reviewed by the Group each financial period to determine whether events and circumstances continue to support the indefinite useful life assessment.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(j) Mining rights

Mining rights are stated at cost less accumulated amortisation and impairment losses (Note 2(l)) and are amortised based on the units of production method over estimated proved and probable reserves of the mines, unless the mining rights are classified as held for sale (or included in a disposal group that is classified as held for sale).

(k) Goodwill

After initial recognition, goodwill is measured at cost less accumulated impairment losses. Goodwill arising on a business combination is allocated to each cash-generating unit, or groups of cash generating units, that is expected to benefit from the synergies of the combination and is tested for impairment annually or more frequent if events or changes in circumstances indicate that the carrying value may be impaired (Note 2(l)).

On disposal of a cash-generating unit ("CGU") during the year, any attributable amount of purchased goodwill is included in the calculation of the profit or loss on disposal.

(l) Impairment of non-financial assets

The carrying amounts of property, plant and equipment, mining rights, intangible assets, right-of-use assets with definite useful lives and long-term equity investments not accounted for as financial assets are reviewed at each reporting date to determine whether there is any indication of impairment. If any such indication exists, then the asset's recoverable amount is estimated. Goodwill, indefinite life intangible assets and intangible assets not yet available for use are tested for impairment annually regardless of whether there are indications of impairment or more frequently if events or changes in circumstances indicate a potential impairment. An impairment loss is recognised if the carrying amount of an asset or CGU exceeds its recoverable amount.

The recoverable amount of an asset or CGU is the greater of its value in use and its fair value less cost to sell. For impairment testing, assets are grouped together into the smallest group of assets that generates cash inflows from continuing use that are largely independent of the cash inflows of other assets or CGUs. In testing a CGU for impairment, a portion of the carrying amount of a corporate asset (e.g., a headquarters building) is allocated to an individual CGU if it can be allocated on a reasonable and consistent basis or, otherwise, to the smallest group of CGUs.

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(l) Impairment of non-financial assets *(Cont'd)*

Subject to an operating segment ceiling test, CGUs to which goodwill has been allocated are aggregated so that the level at which impairment testing is performed reflects the lowest level at which goodwill is monitored for internal reporting purposes.

Goodwill acquired in a business combination is allocated to groups of CGUs that are expected to benefit from the synergies of the combination.

Impairment losses are recognised in profit or loss. Impairment losses recognised in respect of CGUs are allocated first to reduce the carrying amount of any goodwill allocated to the CGU (group of CGUs), and then to reduce the carrying amounts of the other assets in the CGU (group of CGUs) on a pro rata basis, except that the carrying value of an asset will not be reduced below its individual fair value less costs of disposal (if measurable) or value in use (if determinable).

An impairment loss in respect of goodwill is not reversed. Except for goodwill, all impaired non-financial assets are subject to review for possible reversal of impairment at each reporting date. A reversal of an impairment loss is limited to the asset's carrying amount that would have been determined had no impairment loss been recognised in prior years. Reversals of impairment losses are credited to profit or loss in the year in which the reversals are recognised.

(m) Financial instruments

(i) Recognition and initial measurement

All financial assets and financial liabilities are initially recognised when the Group becomes a party to the contractual provisions of the instrument.

A financial asset (unless it is a receivable without a significant financing component) or financial liability is initially measured at fair value plus, for an item not at FVTPL, transaction costs that are directly attributable to its acquisition or issue. A receivable without a significant financing component is initially measured at the transaction price.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(m) Financial instruments *(Cont'd)*

(ii) Classification and subsequent measurement of financial assets

(1) Classification of financial assets

On initial recognition, the Group categorises financial assets into three principal classification categories: measured at amortised cost, at fair value through other comprehensive income (FVOCI) and at fair value through profit or loss (FVTPL) based on the business model under which the financial asset is managed and its contractual cash flow characteristics.

Financial assets are not reclassified subsequent to their initial recognition unless the Group changes its business model for managing financial assets, in which case all affected financial assets are reclassified on the first day of the first reporting period following the change in the business model.

An entity's business model refers to how an entity manages its financial assets in order to generate cash flows. The entity's business model determines whether cash flows will result from collecting contractual cash flows, selling financial assets or both. The Group determines the business model for managing the financial assets according to the facts and based on the specific business objective determined by the Group's key management personnel.

On initial recognition of an equity investment that is not held for trading, the Group may make an irrevocable election to designate the investment at FVOCI (non-recycling) such that subsequent changes in fair value are recognised in other comprehensive income. Such elections are made on an instrument-by-instrument basis, but may only be made if the investment meets the definition of equity from the issuer's perspective.

The Group assesses the contractual cash flow characteristics of an financial asset whether contractual cash flows are solely payments of principal and interest("SPPI"). Principal is defined as the fair value of the financial asset on initial recognition. Interest is defined as consideration for the time value of money and for the credit risk associated with the principal amount outstanding during a particular period of time and for other basic lending risks and costs, as well as a profit margin. The Group assesses whether the financial assets contain a contractual term that could change the timing or amount of contractual cash flows such that it would not meet this condition. Financial assets with cash flows that are SPPI are classified and measured at amortised cost.

All financial assets not classified as measured at amortised cost or FVOCI as described in the above are measured at FVTPL. On initial recognition, the Group may irrevocably designate a financial asset that otherwise meets the requirements to be measured at amortised cost or at FVOCI or at FVTPL if doing so eliminates or significantly reduces an accounting mismatch that would otherwise arise.

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(m) Financial instruments *(Cont'd)*

(ii) Classification and subsequent measurement of financial assets *(Cont'd)*

(2) Subsequent measurement of financial assets

– Financial assets at FVTPL

These assets are subsequently measured at fair value. Net gains and losses, including any interest or dividend income, are recognised in profit or loss, unless the financial assets are part of a hedging relationship.

– Financial assets at amortised cost

These assets are subsequently measured at amortised cost using the effective interest method. A gain or loss on a financial asset that is measured at amortised cost and is not part of a hedging relationship shall be recognised in profit or loss when the financial asset is derecognised, through the amortisation process or in order to recognise impairment gains or losses.

– Debt investments at FVOCI

These assets are subsequently measured at fair value. Interest income calculated using the effective interest method, impairment and foreign exchange gains and losses are recognised in profit or loss. Other net gains and losses are recognised in other comprehensive income. On derecognition, gains and losses accumulated in other comprehensive income are reclassified to profit or loss.

– Equity investments at FVOCI

These assets are subsequently measured at fair value. Dividends are recognised as income in profit or loss. Other net gains and losses are recognised in other comprehensive income and are transferred to retained earnings on derecognition.

(iii) Classification and subsequent measurement of financial liabilities

Financial liabilities are classified as measured at FVTPL or measured at amortised cost.

– Financial liabilities at FVTPL

A financial liability is classified as at FVTPL if it is classified as held-for-trading (including derivative financial liability) or it is designated as such on initial recognition.

These liabilities are subsequently measured at fair value and net gains and losses, including any interest expense, are recognised in profit or loss, unless the financial liabilities are part of a hedging relationship.

– Financial liabilities at amortised cost

These liabilities are subsequently measured at amortised cost using the effective interest method.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(m) Financial instruments *(Cont'd)*

(iv) Offsetting

Financial assets and financial liabilities are separately presented in the statement of financial position without offsetting. However, financial assets and financial liabilities are offset when, and only when the Group:

– currently has a legally enforceable right to set off the amounts;

– intends either to settle them on a net basis or to realise the asset and settle the liability simultaneously.

(v) Derecognition

The Group derecognises a financial asset when one of the following conditions is met:

– the contractual rights to the cash flows from the financial asset expire;

– the Group transfers the rights to receive the contractual cash flows in a transaction in which substantially all of the risks and rewards of ownership of the financial asset are transferred; and

– the Group transfers the rights to receive the contractual cash flows in a transaction in which the Group neither transfers nor retains substantially all of the risks and rewards of ownership and does not retain control of the financial asset.

On derecognition of a financial asset in its entirety, the difference between the two amounts below is recognised in profit or loss:

– the carrying amount of the financial asset transferred (measured at the date of derecognition); and

– the consideration received, along with the cumulative gain or loss previously recognised in other comprehensive income, for the part derecognised.

The Group derecognises a financial liability (or part of it) when, and only when, its contractual obligation (or part of it) is discharged or cancelled, or expire.

Continuing involvement that takes the form of a guarantee over the transferred asset is measured at the lower of the original carrying amount of the asset and the maximum amount of consideration that the Group could be required to repay.

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(m) Financial instruments *(Cont'd)*

(vi) Credit losses

The Group recognises loss allowance for expected credit losses ("ECLs") on the following items:

– financial assets measured at amortised cost;

– contract assets as defined in IFRS 15;

– lease receivables; and

– debt investments measured at FVOCI.

Financial assets measured at fair value, including debt investments or equity investments measured at FVTPL, other equity investments designated at FVOCI (non-recycling) and derivative financial assets, are not subject to the ECL assessment.

Measurement of ECLs

ECLs are a probability-weighted estimate of credit losses. Credit losses are measured as the present value of all expected cash shortfalls (i.e. the difference between the cash flows due to the Group in accordance with the contract and the cash flows that the Group expects to receive).

The maximum period considered when estimating ECLs is the maximum contractual period over which the Group is exposed to credit risk.

In measuring ECLs, the Group takes into account reasonable and supportable information that is available without undue cost or effort. This includes information about past events, current conditions and forecasts of future economic conditions.

ECLs are measured on either of the following bases:

– 12-month ECLs: these are losses that are expected to result from possible default events within the 12 months after the reporting date; and

– lifetime ECLs: these are losses that are expected to result from all possible default events over the expected lives of the items to which the ECL model applies.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(m) Financial instruments *(Cont'd)*

(vi) Credit losses *(Cont'd)*

Measurement of ECLs *(Cont'd)*

Loss allowances for accounts receivable, lease receivables and contract assets are always measured at an amount equal to lifetime ECLs. ECLs on these financial assets are estimated using a provision matrix based on the Group's historical credit loss experience, adjusted for factors that are specific to the debtors and an assessment of both the current and forecast general economic conditions at the reporting date.

For all other financial instruments, the Group recognises a loss allowance equal to 12-month ECLs unless there has been a significant increase in credit risk of the financial instrument since initial recognition or the financial instrument is not determined to have low credit risk at the reporting date, in which cases the loss allowance is measured at an amount equal to lifetime ECLs.

Low credit risk

If the financial instrument has a low risk of default, the borrower has a strong capacity to meet its contractual cash flow obligations in the near term and adverse changes in economic and business conditions in the longer term may, but will not necessarily, reduce the ability of the borrower to fulfil its contractual cash flow obligations, the credit risk on a financial instrument is considered low.

Significant increases in credit risk

In assessing whether the credit risk of a financial instrument has increased significantly since initial recognition, the Group compares the risk of default occurring on the financial instrument assessed at the reporting date with that assessed at the date of initial recognition. The Group considers both quantitative and qualitative information that is reasonable and supportable, including historical experience and forward-looking information that is available without undue cost or effort.

In particular, the following information is taken into account when assessing whether credit risk has increased significantly since initial recognition:

– failure to make payments of principal or interest on their contractually due dates;

– an actual or expected significant deterioration in a financial instrument's external or internal credit rating (if available);

– an actual or expected significant deterioration in the operating results of the debtor; and

– existing or forecast changes in the technological, market, economic or legal environment that have a significant adverse effect on the debtor's ability to meet its obligation to the Group.

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(m) Financial instruments *(Cont'd)*

(vi) Credit losses *(Cont'd)*

Significant increases in credit risk *(Cont'd)*

Depending on the nature of the financial instruments, the assessment of a significant increase in credit risk is performed on either an individual basis or a collective basis. When the assessment is performed on a collective basis, the financial instruments are grouped based on shared credit risk characteristics, such as past due status and credit risk ratings.

The Group assumes that the credit risk on a financial asset has increased significantly if it is more than 30 days past due, unless the Group has reasonable and supportable information that is available without undue cost or effort, that demonstrates that the credit risk has not increased significantly since initial recognition even though the contractual payments are more than 30 days past due.

The Group considers a financial asset to be in default when the borrower is unlikely to pay its credit obligations to the Group in full, without recourse by the Group to actions such as realising security (if any is held).

Credit-impaired financial assets

At each reporting date, the Group assesses whether financial assets carried at amortised cost and debt investments at FVOCI are credit-impaired. A financial asset is credit-impaired when one or more events that have a detrimental impact on the estimated future cash flows of the financial asset have occurred.

Evidence that a financial asset is credit-impaired includes the following observable events:

– significant financial difficulties of the debtor;

– a breach of contract, such as a default or delinquency in interest or principal payments;

– for economic or contractual reasons relating to the borrower's financial difficulty, the Group having granted to the borrower a concession that would not otherwise consider;

– it becoming probable that the borrower will enter into bankruptcy or other financial reorganisation; and

– the disappearance of an active market for that financial asset because of financial difficulties of the issuer.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(m) Financial instruments *(Cont'd)*

(vi) Credit losses *(Cont'd)*

Presentation of allowance for ECLs

ECLs are remeasured at each reporting date to reflect changes in the financial instrument's credit risk since initial recognition. Any change in the ECL amount is recognised as an impairment gain or loss in profit or loss.

The Group recognises an impairment gain or loss for all financial instruments with a corresponding adjustment to their carrying amount through a loss allowance account, except for debt investments that are measured at FVOCI (recycling), for which the loss allowance is recognised in other comprehensive income.

Write-off policy

The gross carrying amount of a financial asset is written off (either partially or in full) to the extent that there is no realistic prospect of recovery. A write-off constitutes a derecognition event. This is generally the case when the Group determines that the debtor does not have assets or sources of income that could generate sufficient cash flows to repay the amounts subject to the write-off. However, financial assets that are written off could still be subject to enforcement activities in order to comply with the Group's procedures for recovery of amounts due.

Subsequent recoveries of an asset that was previously written off are recognised as a reversal of impairment in profit or loss in the period in which the recovery occurs.

(vii) Cash flow hedge

Cash flow hedge is a hedge of the exposure to variability in cash flows that is attributable to a particular risk associated with all, or a component of, a recognised asset or liability or a highly probable forecast transaction, and could affect profit or loss.

The hedged items of cash flow hedge are the designated items with respect to the risks associated with future cash flow changes, and can be reliably measurable. Hedging instruments are designated financial instruments for cash flow hedge whose cash flows are expected to offset changes in the cash flows of a hedged item.

When designating a hedging relationship and on an ongoing basis, the Group shall analyse the sources of hedge ineffectiveness that are expected to affect the hedging relationship during its term. If a hedging relationship ceases to meet the hedging effectiveness requirement relating to the hedge ratio, but the risk management objective for that designated hedging relationship remains the same, the Group shall adjust the hedge ratio of the hedging relationship, so that it meets the qualifying criteria again, which is referred to as rebalancing.

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(m) Financial instruments *(Cont'd)*

(vii) Cash flow hedge *(Cont'd)*

When a derivative is designated as a cash flow hedging instrument, the effective portion of changes in the fair value of the derivative is recognised in other comprehensive income and accumulated in the cash flow hedge reserve. The cash flow hedge reserve is adjusted to the lower of the following:

– the cumulative gain or loss on the hedging instrument from inception of the hedge; and

– the present value of the cumulative change in the hedged expected future cash flows from inception of the hedge.

The portion of the gain or loss on the hedging instrument that is determined to be an effective hedge shall be recognised in other comprehensive income. Any remaining gain or loss on the hedging instrument is hedge ineffectiveness that shall be recognised in profit or loss.

On rebalancing, the hedge ineffectiveness of the hedging relationship is determined and recognised immediately before adjusting the hedging relationship. Adjusting the hedge ratio allows an entity to respond to changes in the relationship between the hedging instrument and the hedged item that arise from their underlying or risk variables. The Group adjusts the hedge ratio by increasing the volume of the hedged items or hedging instruments. Hence, increases in volumes refer to the quantities that are part of the hedging relationship, and decreases in volumes are not part of the hedging relationship.

The amount accumulated in the hedging reserve and the cost of hedging reserve is reclassified to profit or loss in the same period or periods during which the hedged expected future cash flows affect profit or loss.

When the hedged forecast transaction subsequently results in the recognition of a non-financial item, the amount accumulated in the hedging reserve and the cost of hedging reserve is included directly in the initial cost of the non-financial item when it is recognised.

If the amount that has been accumulated in the cash flow hedge reserve is a loss and the Group expects that all or a portion of that loss will not be recovered in one or more future periods, the Group immediately reclassifies the amount that is not expected to be recovered in profit or loss.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(m) Financial instruments *(Cont'd)*

(vii) Cash flow hedge *(Cont'd)*

When the Group discontinues hedge accounting for a cash flow hedge, the Group accounts for the amount that has been accumulated in the cash flow hedge reserve as follows:

– if the hedged future cash flows are still expected to occur, that amount shall remain in the cash flow hedge reserve until the future cash flows occur;

– if the hedged future cash flows are no longer expected to occur, that amount shall be immediately reclassified from the cash flow hedge reserve to profit or loss. A hedged future cash flow that is no longer highly probable to occur may still be expected to occur.

When the future cash flows occur, the amounts accumulated in the hedging reserve of the effective portion are reclassified to profit or loss or included directly in the initial cost of the non-financial item. If the hedged future cash flows are no longer expected to occur, then the amounts that have been accumulated in the hedging reserve and the cost of hedging reserve are immediately reclassified to profit or loss.

(n) Dividend distribution

Final dividends are recognised as a liability when they are approved by the shareholders in a general meeting. Proposed final dividends are disclosed in the notes to the financial statements. Interim dividends are simultaneously proposed and declared, because the Company's memorandum and articles of association grant the directors the authority to declare interim dividends. Consequently, interim dividends are recognised immediately as a liability when they are proposed and declared.

(o) Inventories

Inventories include fuel for power generation, materials for repairs and maintenance and spare parts, and are stated at lower of cost and net realisable values.

Inventories are initially recorded at cost and are charged to fuel costs or repairs and maintenance, respectively when used, or capitalized to property, plant and equipment when installed, as appropriate, using weighted average cost basis. Cost of inventories includes costs of purchase and transportation costs.

When the forecast transaction that is hedged results in the recognition of the inventory, the gains and losses previously deferred in equity are transferred from equity and included in the initial measurement of the cost of the inventory.

Provision for inventory obsolescence is determined by the excess of cost over net realisable value. Net realisable values are determined based on the estimated selling price less estimated conversion costs during power generation, selling expenses and related taxes in the ordinary course of business.

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(p) Related parties

A party is considered to be related to the Group if:

(a) the party is a person or a close member of that person's family and that person

- (i) has control or joint control over the Group;
- (ii) has significant influence over the Group; or
- (iii) is a member of the key management personnel of the Group or of a parent of the Group;

or

(b) the party is an entity where any of the following conditions applies:

- (i) the entity and the Group are members of the same group;
- (ii) one entity is an associate or joint venture of the other entity (or of a parent, subsidiary or fellow subsidiary of the other entity);
- (iii) the entity and the Group are joint ventures of the same third party;
- (iv) one entity is a joint venture of a third entity and the other entity is an associate of the third entity;
- (v) the entity is a post-employment benefit plan for the benefit of employees of either the Group or an entity related to the Group;
- (vi) the entity is controlled or jointly controlled by a person identified in (a);
- (vii) a person identified in (a)(i) has significant influence over the entity or is a member of the key management personnel of the entity (or of a parent of the entity); and
- (viii) the entity, or any member of a group of which it is a part, provides key management personnel services to the Group or to the parent of the Group.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(q) Cash and cash equivalents

Cash and cash equivalents in the statement of financial position comprise cash on hand and at banks, and short-term highly liquid deposits with a maturity of generally within three months that are readily convertible into known amounts of cash, subject to an insignificant risk of changes in value and held for the purpose of meeting short-term cash commitments.

For the purpose of the consolidated statement of cash flows, cash and cash equivalents comprise cash on hand and at banks, and short-term deposits as defined above, less bank overdrafts which are repayable on demand and form an integral part of the Group's cash management.

(r) Provisions

A provision is recognised when a present obligation (legal or constructive) has arisen as a result of a past event and it is probable that a future outflow of resources will be required to settle the obligation, provided that a reliable estimate can be made of the amount of the obligation.

When the Group expects some or all of a provision to be reimbursed, the reimbursement is recognised as a separate asset, but only when the reimbursement is virtually certain. The expense relating to a provision is presented in the statement of comprehensive income net of any reimbursement.

When the effect of discounting is material, the amount recognised for a provision is the present value at the end of the reporting period of the future expenditures expected to be required to settle the obligation. The increase in the discounted present value amount arising from the passage of time is included in finance costs in the statement of comprehensive income.

(s) Borrowings

Borrowings are recognised initially at fair value less transaction costs and subsequently measured at amortised cost using the effective interest method. Borrowings are classified as current liabilities unless the Group has an unconditional right to defer settlement of the liability for at least 12 months after the end of the reporting period.

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(t) Borrowing costs

General and specific borrowing costs directly attributable to the acquisition, construction or production of qualifying assets, which are assets that necessarily take a substantial period of time to get ready for their intended use or sale, are added to the cost of those assets. The capitalisation of borrowing costs as part of the cost of a qualifying asset commences when expenditure for the asset is being incurred, borrowing costs are being incurred and activities that are necessary to prepare the asset for its intended use or sale are in progress. Capitalisation of borrowing costs is suspended or ceases when substantially all the activities necessary to prepare the qualifying asset for its intended use or sale are interrupted or complete.

The amount of specific borrowing costs capitalised is net of the investment income on any temporary investment of the funds pending expenditure on the asset.

All other borrowing costs are recognised in profit or loss in the period in which they are incurred.

(u) Share capital

Ordinary shares are classified as equity. Incremental costs directly attributable to the issue of new shares are shown in equity as a deduction, net of tax, from the proceeds.

(v) Other equity instruments

Perpetual corporate bonds and other equity instruments are classified as equity if they are non-redeemable, or redeemable only at the Company's option, and any interests or dividends are discretionary. Interests or dividends on such instruments classified as equity are recognised as distributions within equity. When these equity instruments are redeemed according to the contractual terms, the redemption price is charged to equity.

(w) Payables

Payables primarily include accounts payable and other liabilities, and are recognised initially at fair value and subsequently measured at amortised cost using the effective interest method.

(x) Taxation

(i) Value-added tax ("VAT")

The domestic sales of power, heat and goods of the Group are subject to VAT. VAT payable is determined by applying 13%, 9% and 6% on the taxable revenue after offsetting deductible input VAT of the period.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(x) Taxation *(Cont'd)*

(ii) Goods and service tax ("GST")

The power sales of the subsidiaries in Singapore are subject to goods and service tax of the country where they operate. GST payable is determined by applying 7% on the taxable revenue after offsetting deductible GST of the period.

The subsidiaries in Pakistan are subject to goods and service tax of the country where they operate. The applicable tax rates in respect of capacity payment, operation and maintenance services and sales of power are 0%, 16% and 17% respectively on the taxable revenue.

(iii) Current and deferred income tax

Income tax comprises current and deferred tax. Income tax relating to items recognised outside profit or loss is recognised outside profit or loss, either in other comprehensive income or directly in equity.

Current tax assets and liabilities are measured at the amount expected to be recovered from or paid to the taxation authorities, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period, taking into consideration interpretations and practices prevailing in the countries in which the Group operates.

Deferred tax is provided, using the liability method, on all temporary differences at the end of the reporting period between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes, except that deferred tax is not recognised for the Pillar Two income taxes.

Deferred tax liabilities are recognised for all taxable temporary differences, except:

(1) when the deferred tax liability arises from the initial recognition of goodwill or an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss and does not give rise to equal taxable and deductible temporary differences; and

(2) in respect of taxable temporary differences associated with investments in subsidiaries, associates and joint ventures, when the timing of the reversal of the temporary differences can be controlled and it is probable that the temporary differences will not reverse in the foreseeable future.

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(x) Taxation *(Cont'd)*

(iii) Current and deferred income tax *(Cont'd)*

Deferred tax assets are recognised for all deductible temporary differences, and the carryforward of unused tax credits and any unused tax losses. Deferred tax assets are recognised to the extent that it is probable that taxable profit will be available against which the deductible temporary differences, and the carryforward of unused tax credits and unused tax losses can be utilised, except:

(1) when the deferred tax asset relating to the deductible temporary differences arises from the initial recognition of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss and does not give rise to equal taxable and deductible temporary differences; and

(2) in respect of deductible temporary differences associated with investments in subsidiaries, associates and joint ventures, deferred tax assets are only recognised to the extent that it is probable that the temporary differences will reverse in the foreseeable future and taxable profit will be available against which the temporary differences can be utilised.

The carrying amount of deferred tax assets is reviewed at the end of each reporting period and reduced to the extent that it is no longer probable that sufficient taxable profit will be available to allow all or part of the deferred tax asset to be utilised. Unrecognised deferred tax assets are reassessed at the end of each reporting period and are recognised to the extent that it has become probable that sufficient taxable profit will be available to allow all or part of the deferred tax asset to be recovered.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply to the period when the asset is realised or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period.

Deferred tax assets and deferred tax liabilities are offset if and only if the Group has a legally enforceable right to set off current tax assets and current tax liabilities and the deferred tax assets and deferred tax liabilities relate to income taxes levied by the same taxation authority on either the same taxable entity or different taxable entities which intend either to settle current tax liabilities and assets on a net basis, or to realise the assets and settle the liabilities simultaneously, in each future period in which significant amounts of deferred tax liabilities or assets are expected to be settled or recovered.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(y) Employee benefits

Employee benefits include all expenditures relating to the employees for their services. The Group recognises employee benefits as liabilities during the accounting period when employees render services and allocate to related cost of assets and expenses based on different beneficiaries.

In connection with pension obligations, the Group operates various defined contribution plans in accordance with the local conditions and practices in the countries and provinces in which it operate. A defined contribution plan is a pension plan under which the Group pays fixed contributions into a separate publicly administered pension insurance plan on mandatory and voluntary bases. The Group has no legal or constructive obligations to pay further contributions if the fund does not hold sufficient assets to pay all employees the benefits relating to employee service in the current and prior periods. The contributions are recognised as employee benefits when incurred. Prepaid contributions are recognised as assets to the extent that a cash refund or a reduction in the future payment is available.

(z) Government grants

Government grants are recognised at their fair value where there is reasonable assurance that the grant will be received and all attaching conditions will be complied with. When government grants are received in the form of monetary assets, they are measured at the amount received or receivable. When the grant is in the form of non-monetary assets, it is measured at fair value. When fair value cannot be measured reliably, a nominal amount is assigned.

Asset-related government grant is recognised as deferred income and is amortised evenly in profit or loss over the useful lives of related assets.

Income-related government grant that is used to compensate subsequent related expenses or losses of the Group is recognised as deferred income and recorded in profit or loss when related expenses or losses are incurred. When the grant is used to compensate expenses or losses that were already incurred, they are directly recognised in the current period profit or loss.

(aa) Revenue and other income

Income is increases in economic benefits during the accounting period in the form of inflows or enhancements of assets or decreases of liabilities that result in an increase in equity, other than those relating to contributions from equity participants.

Revenue is recognised when (or as) the Group satisfies a performance obligation in the contract by transferring the control over a promised good or service to a customer.

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(aa) Revenue and other income *(Cont'd)*

When two or more performance obligations are identified, the Group allocates the transaction price to each performance obligation identified in the contract on a relative stand-alone selling price basis at contract inception and recognises as revenue the amount of the transaction price that is allocated to that performance obligation.

Transaction price is the amount of consideration to which the Group expects to be entitled in exchange for transferring promised goods or services to a customer, excluding amounts collected on behalf of third parties. Revenue is only recognised to the extent that it is highly probable that a significant reversal in the amount of cumulative revenue recognised will not occur. The Group recognises a refund liability if the entity receives consideration from a customer and expects to refund some or all of that consideration to the customer. Where the contract contains a significant financing component, the Group recognises revenue at an amount that reflects the price that a customer would have paid for the promised goods or services if the customer had paid cash for those goods or services when (or as) they transfer to the customer. The difference between the promised amount of consideration and its present value is amortised using the effective interest rate. The Group will not adjust the promised amount of consideration for the effects of a significant financing component if the Group expects, at contract inception, that the period between when the Group transfers a promised good or service to a customer and when the customer pays for that good or service will be one year or less.

A performance obligation is satisfied over time if one of the following criteria is met:

– When the customer simultaneously receives and consumes the benefits provided by the Group's performance, as the Group performs;

– When the Group's performance creates or enhances an asset that the customer controls as the asset is created or enhanced;

– When the Group's performance does not create an asset with an alternative use to the entity and the Group has an enforceable right to payment for performance completed to date.

For performance obligations satisfied over time, revenue is recognised on the basis of direct measurements of the value to the customer of the goods or services transferred to date relative to the remaining goods or services promised under the contract. When the outcome of the contract cannot be reasonably measured, revenue is recognised only to the extent of contract costs incurred that are expected to be recovered.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(aa) Revenue and other income *(Cont'd)*

For performance obligations satisfied at a point in time, revenue is recognised when the customer obtains control of the promised good or service in the contract. The Group considers indicators of the transfer of control, which include, but are not limited to, the following:

– The Group has a present right to payment for the asset;

– The Group has transferred physical possession of the asset;

– The customer has legal title to the asset or the significant risks and rewards of ownership of the asset; or

– The customer has accepted the asset.

If the Group performs by transferring goods or services to a customer before being unconditionally entitled to the consideration under the contract terms, a contract asset is recognised for the earned consideration that is conditional. Contract assets are subject to impairment assessment, details of which are included in the accounting policies for impairment of financial assets (Note 2(m)(vi)). They are reclassified to trade receivables when the right to the consideration becomes unconditional. The Group's obligation to transfer goods or services to a customer for which the Group has received consideration (or the amount is due) from the customer is presented as a contract liability.

Further details of revenue and income recognition policies are as follows:

(i) Sale of power

Revenue is recognised upon transmission of electricity to the power grid when the control of the electricity is transferred at the same time.

(ii) Sale of heat

Revenue is recognised upon transmission of heat to the customers when the control of the heat is transferred at the same time.

(iii) Service revenue

Service revenue refers to amounts received from port service, transportation service, maintenance service and heating pipeline service that is recognised over time during the provision of service, using an input method to measure progress towards complete satisfaction of the service, because the customer simultaneously receives and consumes the benefits provided by the Group. Revenue is recognised on a straight-line basis because the entity's inputs are expended evenly throughout the performance period.

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(aa) Revenue and other income *(Cont'd)*

(iv) Coal and raw material sales revenue

Revenue is recognised when the control of the fuel and materials is transferred to the customers.

(v) Rental income from operating leases

Rental income receivable under operating leases is recognised in profit or loss in equal instalments over the periods covered by the lease term, except where an alternative basis is more representative of the pattern of benefits to be derived from the use of the leased asset. Lease incentives granted are recognised in profit or loss as an integral part of the aggregate net lease payments receivable. Contingent rentals are recognised as income in the accounting period in which they are earned.

(vi) Dividend income

Dividend income is recognised when the shareholders' right to receive payment has been established, it is probable that the economic benefits associated with the dividend will flow to the Group and the amount of the dividend can be measured reliably.

(vii) Interest income

Interest income from deposits is recognised on a time proportion basis using the effective interest method. Interest income from finance leases is recognised on a basis that reflects a constant periodic rate of return on the net investment in the finance lease.

(ab) Contract costs

Other than the costs which are capitalised as inventories, property, plant and equipment and intangible assets, costs incurred to fulfil a contract with a customer are capitalised as an asset if all of the following criteria are met:

(i) The costs relate directly to a contract or to an anticipated contract that the entity can specifically identify.

(ii) The costs generate or enhance resources of the entity that will be used in satisfying (or in continuing to satisfy) performance obligations in the future.

(ii) The costs are expected to be recovered.

The capitalised contract costs are amortised and charged to the statement of comprehensive income on a systematic basis that is consistent with the transfer to the customer of the goods or services to which the asset relates. Other contract costs are expensed as incurred.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(ab) Contract costs *(Cont'd)*

Impairment losses are recognised to the extent that the carrying amount of the contract cost asset exceeds the net of:

(i) remaining amount of consideration that the Group expects to receive in exchange for the goods or services to which the asset relates, less

(ii) any costs that relate directly to providing those goods or services that have not yet been recognised as expenses.

(ac) Leases

The Group assesses at contract inception whether a contract is, or contains, a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration.

Group as a lessee

The Group applies a single recognition and measurement approach for all leases, except for short-term leases and leases of low-value assets. The Group recognises lease liabilities to make lease payments and right-of-use assets representing the right to use the underlying assets.

At inception or on reassessment of a contract that contains a lease component and non-lease component(s), the Group adopts the practical expedient not to separate non-lease component(s) and to account for the lease component and the associated non-lease component(s) (e.g., property management services for leases of properties) as a single lease component.

(i) Right-of-use assets

Right-of-use assets are recognised at the commencement date of the lease (that is the date the underlying asset is available for use). Right-of-use assets are measured at cost, less any accumulated depreciation and any impairment losses, and adjusted for any remeasurement of lease liabilities. The cost of right-of-use assets includes the amount of lease liabilities recognised, initial direct costs incurred, and lease payments made at or before the commencement date less any lease incentives received. Right-of-use assets are depreciated on a straight-line basis over the shorter of the lease terms and the estimated useful lives of the assets as follows:

Buildings	2.5 – 10 years
Electric utility plant in service	8 – 25 years
Transportation facilities	30 years
Land use rights	10 – 50 years
Others	5 – 30 years

If ownership of the leased asset transfers to the Group by the end of the lease term or the cost reflects the exercise of a purchase option, depreciation is calculated using the estimated useful life of the asset.

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(ac) Leases *(Cont'd)*

Group as a lessee *(Cont'd)*

(ii) Lease liabilities

Lease liabilities are recognised at the commencement date of the lease at the present value of lease payments to be made over the lease term. The lease payments include fixed payments (including in-substance fixed payments) less any lease incentives receivable, variable lease payments that depend on an index or a rate, and amounts expected to be paid under residual value guarantees. The lease payments also include the exercise price of a purchase option reasonably certain to be exercised by the Group and payments of penalties for termination of a lease, if the lease term reflects the Group exercising the option to terminate the lease. The variable lease payments that do not depend on an index or a rate are recognised as an expense in the period in which the event or condition that triggers the payment occurs.

In calculating the present value of lease payments, the Group uses its incremental borrowing rate at the lease commencement date because the interest rate implicit in the lease is not readily determinable. After the commencement date, the amount of lease liabilities is increased to reflect the accretion of interest and reduced for the lease payments made. In addition, the carrying amount of lease liabilities is remeasured if there is a modification, a change in the lease term, a change in lease payments (e.g., a change to future lease payments resulting from a change in an index or rate) or a change in assessment of an option to purchase the underlying asset.

(iii) Short-term leases and leases of low-value assets

The Group has elected not to recognise right-of-use assets and lease liabilities for its short-term leases (elected by class of underlying asset) of certain offices and apartments for employees (that is those leases that have a lease term of 12 months or less from the commencement date and do not contain a purchase option). It also applies the recognition exemption for leases of low-value assets to leases of office equipment and laptop computers that are considered to be of low value. Instead, the Group recognises the lease payments associated with those leases as an expense on a straight-line basis over the lease term.

Group as a lessor

When the Group acts as a lessor, it classifies at lease inception (or when there is a lease modification) each of its leases as either an operating lease or a finance lease.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(ac) Leases *(Cont'd)*

Group as a lessor *(Cont'd)*

Leases in which the Group does not transfer substantially all the risks and rewards incidental to ownership of an asset are classified as operating leases. When a contract contains lease and non-lease components, the Group allocates the consideration in the contract to each component on a relative stand-alone selling price basis. Rental income is accounted for on a straight-line basis over the lease terms and is included in revenue in the statement of comprehensive income due to its operating nature. Initial direct costs incurred in negotiating and arranging an operating lease are added to the carrying amount of the leased asset and recognised over the lease term on the same basis as rental income. Contingent rents are recognised as revenue in the period in which they are earned.

Leases that transfer substantially all the risks and rewards incidental to ownership of an underlying asset to the lessee are accounted for as finance leases. At the commencement date, the cost of the leased asset is capitalised at the present value of the lease payments and related payments (including the initial direct costs), and presented as a receivable at an amount equal to the net investment in the lease. The finance income of such leases is recognised in the statement of comprehensive income so as to provide a constant periodic rate of charge over the lease terms.

(ad) Contingencies

Contingent liabilities are not recognised in the financial statements. They are disclosed unless the possibility of an outflow of resources embodying economic benefits is remote. Contingent assets are not recognised in the financial statements but disclosed when an inflow of economic benefit is probable.

(ae) Fair value management

The Group measures its equity investments at fair value at the end of each reporting period. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value measurement is based on the presumption that the transaction to sell the asset or transfer the liability takes place either in the principal market for the asset or liability, or in the absence of a principal market, in the most advantageous market for the asset or liability. The principal or the most advantageous market must be accessible by the Group. The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest.

A fair value measurement of a non-financial asset takes into account a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another market participant that would use the asset in its highest and best use.

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(ae) Fair value management *(Cont'd)*

The Group uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximising the use of relevant observable inputs and minimising the use of unobservable inputs.

All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorised within the fair value hierarchy, described as follows, based on the lowest level input that is significant to the fair value measurement as a whole:

Level 1 – based on quoted prices (unadjusted) in active markets for identical assets or liabilities

Level 2 – based on valuation techniques for which the lowest level input that is significant to the fair value measurement is observable, either directly or indirectly

Level 3 – based on valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable

For assets and liabilities that are recognised in the financial statements on a recurring basis, the Group determines whether transfers have occurred between levels in the hierarchy by reassessing categorisation (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period.

(af) Research and development costs

All research costs are charged to the statement of profit or loss as incurred.

Expenditure incurred on projects to develop new products is capitalised and deferred only when the Group can demonstrate the technical feasibility of completing the intangible asset so that it will be available for use or sale, its intention to complete and its ability to use or sell the asset, how the asset will generate future economic benefits, the availability of resources to complete the project and the ability to measure reliably the expenditure during the development. Product development expenditure which does not meet these criteria is expensed when incurred.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(ag) Issued but not yet effective International Financial Reporting Standards

The Group has not applied the following revised IFRSs, that have been issued but are not yet effective, in these financial statements. The Group intends to apply these revised IFRSs, if applicable, when they become effective.

Amendments to IFRS 10 and IAS 28	*Sale or Contribution of Assets between an Investor and its Associate or Joint Venture* [3]
Amendments to IFRS 16	*Lease Liability in a Sale and Leaseback* [1]
Amendments to IAS 1	*Classification of Liabilities as Current or Non-current (the "2020 Amendments")* [1]
Amendments to IAS 1	*Non-current Liabilities with Covenants (the "2022 Amendments")* [1]
Amendments to IAS 7 and IFRS 7	*Supplier Finance Arrangements* [1]
Amendments to IAS 21	*Lack of Exchangeability* [2]

1 Effective for annual periods beginning on or after 1 January 2024
2 Effective for annual periods beginning on or after 1 January 2025
3 No mandatory effective date yet determined but available for adoption

Further information about those IFRSs that are expected to be applicable to the Group is described below.

(i) Amendments to IFRS 10 and IAS 28 *Sale or Contribution of Assets between an Investor and its Associate or Joint Venture*

The amendments address an inconsistency between the requirements in IFRS 10 and in IAS 28 in dealing with the sale or contribution of assets between an investor and its associate or joint venture. The amendments require a full recognition of a gain or loss resulting from a downstream transaction when the sale or contribution of assets constitutes a business. For a transaction involving assets that do not constitute a business, a gain or loss resulting from the transaction is recognised in the investor's profit or loss only to the extent of the unrelated investor's interest in that associate or joint venture. The amendments are to be applied prospectively. The previous mandatory effective date of amendments to IFRS 10 and IAS 28 was removed by the IASB. However, the amendments are available for adoption now. The Group is currently assessing the impact that the amendments will have on current practice.

(ii) Amendments to IFRS 16 *Lease Liability in a Sale and Leaseback*

The amendments specify the requirements that a seller-lessee uses in measuring the lease liability arising in a sale and leaseback transaction to ensure the seller-lessee does not recognise any amount of the gain or loss that relates to the right of use it retains. The amendments are effective for annual periods beginning on or after 1 January 2024 and shall be applied retrospectively to sale and leaseback transactions entered into after the date of initial application of IFRS 16 (i.e., 1 January 2019). Earlier application is permitted. The amendments are not expected to have any significant impact on the Group's consolidated financial statements.

2 MATERIAL ACCOUNTING POLICIES *(Cont'd)*

(ag) Issued but not yet effective International Financial Reporting Standards *(Cont'd)*

(iii) Amendments to IAS 1 *the 2020 Amendments and 2022 Amendments*

The 2020 Amendments clarify the requirements for classifying liabilities as current or non-current, including what is meant by a right to defer settlement and that a right to defer must exist at the end of the reporting period. Classification of a liability is unaffected by the likelihood that the entity will exercise its right to defer settlement. The amendments also clarify that a liability can be settled in its own equity instruments, and that only if a conversion option in a convertible liability is itself accounted for as an equity instrument would the terms of a liability not impact its classification. The 2022 Amendments further clarify that, among covenants of a liability arising from a loan arrangement, only those with which an entity must comply on or before the reporting date affect the classification of that liability as current or non-current. Additional disclosures are required for non-current liabilities that are subject to the entity complying with future covenants within 12 months after the reporting period. The amendments shall be applied retrospectively with early application permitted.

An entity that applies the 2020 Amendments early is required to apply simultaneously the 2022 Amendments, and vice versa. The Group is currently assessing the impact of the amendments and whether existing loan agreements may require revision. Based on a preliminary assessment, the amendments are not expected to have any significant impact on the Group's consolidated financial statements.

(iv) Amendments to IAS 21 *Lack of Exchangeability*

Amendments to IAS 21 specify how an entity shall assess whether a currency is exchangeable into another currency and how it shall estimate a spot exchange rate at a measurement date when exchangeability is lacking. The amendments require disclosures of information that enable users of financial statements to understand the impact of a currency not being exchangeable. Earlier application is permitted. When applying the amendments, an entity cannot restate comparative information. Any cumulative effect of initially applying the amendments shall be recognised as an adjustment to the opening balance of retained profits or to the cumulative amount of translation differences accumulated in a separate component of equity, where appropriate, at the date of initial application. The Group is currently assessing the impact that the amendments will have on current practice.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

3 FINANCIAL AND CAPITAL RISKS MANAGEMENT

(a) Financial risk management

Risk management, including the management of financial risks, is carried out under the instructions of the Strategic Committee of the Board of Directors and the Risk Management Team. The Group works out general principles for overall management as well as management policies covering specific areas. In considering the importance of risks, the Group identifies and evaluates risks at head office and individual power plant level, and requires analysis and proper communication of the information collected periodically.

SinoSing Power and its subsidiaries and Huaneng Shandong Ruyi (Pakistan) Energy (Private) Co., Ltd. ("Ruyi Pakistan Energy") and Shandong Huatai Electric Power Operation & Maintenance (Private) Co., Ltd. ("Huatai Power"), the subsidiaries of Hong Kong Energy, are subject to financial risks that are different from the entities operating within the Chinese Mainland. They have a series of controls in place to maintain the cost of risks occurring and the cost of managing the risks at an acceptable level. Management continually monitors the risk management process to ensure that an appropriate balance between risk and control is achieved. SinoSing Power and its subsidiaries, Ruyi Pakistan Energy and Huatai Power have their written policies and financial authorisation limits in place which are reviewed periodically. These financial authorisation limits seek to mitigate and eliminate operational risks by setting approval thresholds required for entering into contractual obligations and investments.

(i) Market risk

(1) Foreign exchange risk

Foreign exchange risk of the entities operating within the Chinese Mainland primarily arises from loans denominated in foreign currencies of the Group. SinoSing Power and its subsidiaries are exposed to foreign exchange risk on bank balances, accounts receivable, other receivables and assets, accounts payable, long-term bonds and other liabilities that are denominated primarily in US$, a currency other than the Singapore dollar ("S$"), their functional currency. Ruyi Pakistan Energy is exposed to foreign exchange risk on bank balances, financial lease receivables, accounts payable and other liabilities and long-term loans that are denominated primarily in US$, a currency other than Pakistan rupee ("PKR"), their functional currency. The Group manages exchange risk through closely monitoring the interest and exchange market.

3 FINANCIAL AND CAPITAL RISKS MANAGEMENT *(Cont'd)*

(a) Financial risk management *(Cont'd)*

(i) Market risk *(Cont'd)*

(1) ***Foreign exchange risk*** *(Cont'd)*

As at 31 December 2023, if RMB had weakened/strengthened by 5% (2022: 5%) against US$ with all other variables constant, the Group would further recognise an exchange gain/loss amounting to RMB0.50 million (2022: RMB9 million). The ranges of such sensitivity disclosed above were based on the observation on the historical trend of related exchange rates during the previous year under analysis.

As at 31 December 2023, if S$ had weakened/strengthened by 10% against US$ with all other variables constant, SinoSing Power and its subsidiaries would further recognise exchange gain/loss amounting to RMB6 million. The range of such sensitivity disclosed above was based on the management's experience and forecast.

SinoSing Power and its subsidiaries also are exposed to foreign exchange risk on fuel purchases that are denominated primarily in US$. They substantially hedge their estimated foreign currency exposure in respect of forecast fuel purchases over the next three months using primarily foreign currency contracts.

As at 31 December 2023, if PKR had weakened/strengthened by 5% (2022: 5%) against US$ with all other variables constant, Ruyi Pakistan Energy would further recognise an exchange loss/gain amounting to RMB23 million (2022: RMB49 million). The range of such sensitivity disclosed above was based on the management's experience and forecast.

Ruyi Pakistan Energy is exposed to foreign exchange risk on payments of long-term loans that are denominated primarily in US$. Ruyi Pakistan Energy entered into an agreement on a tariff adjustment mechanism with Central Power Purchasing Agency (Guarantee) Limited ("CPPA-G") and the tariff adjustment mechanism was approved by the National Electric Power Regulatory Authority. The mechanism mitigates foreign exchange risk by decreasing or increasing electricity tariff when PKR strengthens or weakens against US$.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

3 FINANCIAL AND CAPITAL RISKS MANAGEMENT *(Cont'd)*

(a) Financial risk management *(Cont'd)*

(i) Market risk *(Cont'd)*

(2) Price risk

The other equity instrument investments of the Group designated as at FVOCI are exposed to equity security price risk.

Detailed information relating to the other equity instrument investments is disclosed in Note 10. The Group closely monitors the pricing trends in the open market in determining its long-term strategic stakeholding decisions.

The Group is exposed to fuel price risk on fuel purchases. In particular, SinoSing Power and its subsidiaries use fuel oil swaps to hedge against such a risk and designate them as cash flow hedges. Please refer to Note 13 for details.

(3) Cash flow interest rate risk

The interest rate risk of the Group primarily arises from loans. Loans borrowed at variable rates expose the Group to cash flow interest rate risk. The exposures of these risks are disclosed in Notes 24 and 30 to the financial statements. The Group has entered into interest rate swap agreements with banks to hedge against a portion of cash flow interest rate risk.

As at 31 December 2023, if interest rates on RMB-denominated borrowings had been 50 basis points higher/lower with all other variables held constant, interest expense for the year would have been RMB1,029 million (2022: RMB1,036 million) higher/lower. If interest rates on US$-denominated borrowings had been 50 basis points higher/lower with all other variables held constant, interest expense for the year would have been RMB38 million (2022: RMB52 million) higher/lower. If interest rates on S$-denominated borrowings had been 100 basis points higher/lower with all other variables held constant, interest expense for the year would have been RMB8 million (2022: RMB50 million) higher/lower. The ranges of such sensitivity disclosed above were based on the observation on the historical trend of related interest rates during the previous year under analysis.

TP-STM Water Resources Pte. Ltd. ("TPSTMWR") also entered into a number of floating-to-fixed interest rate swap agreements to hedge against cash flow interest rate risk of loans.

According to the interest rate swap agreements, TPSTMWR agrees with the counterparty to settle the difference between fixed contract rates and floating-rate interest amounts calculated by reference to the agreed notional amount quarterly until 2044. Please refer to Note 13 for details.

3 FINANCIAL AND CAPITAL RISKS MANAGEMENT *(Cont'd)*

(a) Financial risk management *(Cont'd)*

(ii) Credit risk

Credit risk arises from bank deposits, accounts receivable, contract assets, other receivables and assets and other non-current assets. The maximum exposures of contract assets, other non-current assets, other receivables and assets, accounts receivable and bank deposits are disclosed in Notes 5(c), 15, 17, 18 and 35 to the financial statements, respectively.

Bank deposits are placed with reputable banks and financial institutions. In addition, a significant portion is deposited with a non-bank financial institution which is a related party of the Group. The Group has a director on the Board of this non-bank financial institution and exercises influence. Corresponding maximum exposures of these bank deposits are disclosed in Note 36 (a)(i) to the financial statements.

The majority of the power plants of the Group operating within the PRC sell electricity generated to their sole customers, the power grid companies of their respective provinces or regions where the power plants operate. These power plants communicate with their individual grid companies periodically and believe that adequate provision for loss allowance on accounts receivable has been made in the financial statements.

Pursuant to Cai Jian [2020] No. 4 Opinions on the Promotion of Healthy Development over Non-water Renewable Energy Power Generation jointly issued by the Ministry of Finance, the National Development and Reform Commission and the National Energy Administration in January 2020, the application process of renewable energy tariff premium has been further simplified to file the project tariff supplementary information on the National Renewable Energy Information Management Platform. The tariff premium receivables are settled in accordance with prevailing government policies and prevalent payment trends of the Ministry of Finance. There is no due date for settlement. The directors are of the opinion that the application process will be completed in due course and these trade receivables from tariff premium are fully recoverable considering there were no bad debt experiences with the grid companies in the past and such tariff premium is funded by the PRC government. On 20 January 2020, the Ministry of Finance, the National Development and Reform Commission and the National Energy Administration jointly issued Cai Jian [2020] No. 5 Notice on the Measures for Administration of Funds for Tariff Premium of Renewable Energy and abolished the Notice on the Interim Measures for Administration of Subsidy Funds for Tariff Premium of Renewable Energy issued in 2012. The new measures clarified that the total amount of funds for tariff premium will be determined by the Ministry of Finance in accordance with the principle of determining expenditure by revenue, and the capacity of newly installed renewable energy projects within the premium scope will be determined by the National Development and Reform Commission and the Energy Administration. At the same time, the stock projects included in the annual construction plan could be enrolled in the list of subsidies after approved by the power grid company. As at 31 December 2023, most relevant projects of the Group have been approved for renewable energy subsidies, and some projects are under application for approval.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

3 FINANCIAL AND CAPITAL RISKS MANAGEMENT *(Cont'd)*

(a) Financial risk management *(Cont'd)*

(ii) Credit risk *(Cont'd)*

Singapore subsidiaries derive revenue mainly from the sale of electricity to the National Electricity Market of Singapore operated by Energy Market Company Pte. Ltd., which does not have high credit risk. Singapore subsidiaries also derive revenue mainly from retailing electricity to consumers with monthly consumption of more than 2,000kWh. These customers engage in a wide spectrum of manufacturing and commercial activities in a variety of industries. Singapore subsidiaries also entered into a build-operate-transfer agreement with a Singapore government related entity for certain water related projects, the contract assets were recognised accordingly, and the Singapore government related entity does not have high credit risk.

Ruyi Pakistan Energy derives revenue from the sale of electricity to CPPA-G, which is measured on the basis of lifetime ECLs.

The Group measures loss allowances for accounts and notes receivable and contract assets at an amount equal to lifetime ECLs, which is calculated using a provision matrix. As at 31 December 2023, for accounts receivable amounting to RMB2,276 million with specific credit risk, the Group measures their credit risk individually and recognised loss allowances amounting to RMB122 million. For other accounts and notes receivable and contract assets, the Group measures loss allowances based on the past due status and further distinguish them by the Group's different customer bases and business types into five categories. The Group's historical credit loss experience does not indicate significantly different loss patterns for these five categories.

Accounts and notes receivable and contract assets	Gross carrying amount	ECL	Loss allowance
Receivables from domestic sales of power	40,172,070	0.00%	–
Receivables from domestic sales of heat	2,815,970	0.00%	–
Receivables from overseas sales of power	1,804,116	0.47%	8,487
Receivables from domestic sales of others	221,280	0.00%	–
Receivables from overseas sales of others	1,100,035	0.00%	–
Total	46,113,471		8,487

Finance lease receivables are mainly from a domestic related party, business enterprises in Singapore and CPPA-G in Pakistan. As the related party and Singapore local enterprises have a good track of records and no historical losses have been incurred, the Group concluded that these receivables have low credit risk and remote possibility of default. The finance lease receivables from CPPA-G are secured against the sovereign guarantee issued by the Government of Pakistan pursuant to the designated agreement. The ECLs of the finance lease receivables are measured on the basis of lifetime ECLs, and a 0.03% of risk of default against the Government of Pakistan is considered during the assessment. The ECLs relating to the finance lease receivables recognised during the year were RMB0.29 million.

(Amounts expressed in thousands of RMB unless otherwise stated)

3 FINANCIAL AND CAPITAL RISKS MANAGEMENT *(Cont'd)*

(a) Financial risk management *(Cont'd)*

(ii) Credit risk *(Cont'd)*

The Group measures loss allowances for other receivables at an amount equal to 12-month ECLs unless there has been a significant increase in credit risk.

Other receivables	Gross carrying amount	Loss allowance
Within 1 year	2,253,648	232,941
1-2 years	597,718	98
2-3 years	144,702	700
3-4 years	83,869	81
4-5 years	77,215	–
Over 5 years	194,193	81,796
Total	3,351,345	315,616

Expected loss rates are based on actual loss experience over the past 5 years. These rates are adjusted to reflect differences between economic conditions during the period over which the historic data has been collected, the current conditions, and the Group's view of economic conditions over the expected lives of the receivables.

(iii) Liquidity risk

Liquidity risk management is to primarily ensure the ability of the Group to meet its liabilities as and when they are fall due. The liquidity reserve comprises the undrawn borrowing facility and cash and cash equivalents available as at each month end in meeting the Group's liabilities.

The Group maintains flexibility in funding by cash generated by their operating activities and availability of committed credit facilities.

Financial liabilities due within 12 months are presented as current liabilities in the statement of financial position. The cash flows of derivative financial liabilities and repayment schedules of the long-term loans, long-term bonds, other non-current liabilities and lease liabilities are disclosed in Notes 13, 24, 25, 26 and 42, respectively.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

3 FINANCIAL AND CAPITAL RISKS MANAGEMENT *(Cont'd)*

(b) Fair value estimation

(i) Fair value measurements

The following table presents the assets and liabilities that are measured at fair value at 31 December 2023 on a recurring basis.

	Level 1	Level 2	Level 3	Total
Recurring fair value measurements				
Assets				
Derivatives used for hedging (Note 13)	–	60,027	–	60,027
Other equity instrument investments (Note 10)	–	–	642,923	642,923
Total assets	–	60,027	642,923	702,950
Liabilities				
Derivatives used for hedging (Note 13)	–	694,814	–	694,814
Total liabilities	–	694,814	–	694,814

The following table presents the assets and liabilities that are measured at fair value at 31 December 2022 on a recurring basis.

	Level 1	Level 2	Level 3	Total
Recurring fair value measurements				
Assets				
Derivatives used for hedging (Note 13)	–	48,495	–	48,495
Other equity instrument investments (Note 10)	–	–	708,912	708,912
Total assets	–	48,495	708,912	757,407
Liabilities				
Derivatives used for hedging (Note 13)	–	662,850	–	662,850
Total liabilities	–	662,850	–	662,850

3 FINANCIAL AND CAPITAL RISKS MANAGEMENT *(Cont'd)*

(b) Fair value estimation *(Cont'd)*

(i) Fair value measurements *(Cont'd)*

The fair value of financial instruments traded in active markets is based on quoted market prices at the end of the reporting period. A market is regarded as active if quoted prices are readily and regularly available from an exchange, dealer, broker, industry group, pricing service, or regulatory agency, and those prices represent actual and regularly occurring market transactions on an arm's length basis. The quoted market price used for financial assets held by the Group is the current bid price. These instruments are included in level 1. As at 31 December 2023, instruments included in level 1 were equity instruments in listed securities designated as financial assets measured at fair value through other comprehensive income.

The fair value of financial instruments that are not traded in an active market is determined by using valuation techniques. These valuation techniques maximise the use of relevant observable inputs and minimise the use of unobservable inputs. If all significant inputs required to fair value an instrument are observable, the instrument is included in level 2.

If one or more of the significant inputs is not based on observable market data, the instrument is included in level 3.

Specific valuation techniques used to value financial instruments include:

- The forward exchange contracts and fuel oil swaps are both valued using quoted market prices or dealer quotes for similar instruments.

- The fair value of interest rate swaps is calculated as the present value of the estimated future cash flows based on observable yield curves.

- The model incorporates various market observable inputs including the annualised yields of similar securitisation products and interest rate curves. The carrying amounts of accounts receivable are the same as their fair values.

- The material other equity instrument investments in unlisted securities are valued using a market-base valuation technique based on assumptions that are not supported by observable market prices or rates. The Group determines comparable public companies based on industry, size, leverage and strategy and calculates an appropriate price multiple, such as price to book ("P/B") multiple for each comparable company identified.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

3 FINANCIAL AND CAPITAL RISKS MANAGEMENT *(Cont'd)*

(b) Fair value estimation *(Cont'd)*

(i) Fair value measurements *(Cont'd)*

Below is a summary of significant unobservable inputs to the valuation of financial instruments together with a quantitative sensitivity analysis as at 31 December 2023:

	Valuation technique	Significant unobservable input	Range	Sensitivity of fair value to the input
Unlisted equity investments	Valuation multiples	Average P/B	1.15-1.27	10% increase/decrease in multiple would result in increase/decrease in fair value by RMB38.06 million.
		Discount for lack of marketability	18.05%-19.85%	10% increase/decrease in multiple would result in decrease/increase in fair value by RMB8.38 million.

The discount for lack of marketability represents the amounts of premiums and discounts determined by the Group that market participants would take into account when pricing the investments.

During the years ended 31 December 2023 and 2022, there were no transfers of financial instruments between level 1 and level 2, or transfers into or out of level 3.

The movements during the year in the balance of the level 3 fair value measurements are as follows:

	2023	2022
Other equity instrument investments		
Beginning of the year	**708,912**	722,205
Addition	**605**	–
Disposal	**(12,137)**	–
Fair value changes	**(54,457)**	(13,293)
End of the year	**642,923**	708,912
Changes in fair value recognised in other comprehensive income for the year, net of tax	**(40,522)**	(9,971)

3 FINANCIAL AND CAPITAL RISKS MANAGEMENT *(Cont'd)*

(b) Fair value estimation *(Cont'd)*

(ii) Fair value disclosures

The carrying value less provision for loss allowances on accounts receivable, other receivables and assets, accounts payable and other liabilities, short-term bonds and short-term loans approximated to their fair values. The fair value of financial liabilities for disclosure purposes is estimated by discounting the future contractual cash flows at the current market interest rate that is available to the Group for similar financial instruments.

The estimated fair values of long-term loans and long-term bonds (both including current maturities) were approximately RMB182.88 billion and RMB40.10 billion as at 31 December 2023 (31 December 2022: RMB170.52 billion and RMB40.19 billion), respectively. The aggregate book values of these liabilities were approximately RMB183.42 billion and RMB39.87 billion as at 31 December 2023 (31 December 2022: RMB170.81 billion and RMB39.79 billion), respectively.

(c) Capital risk management

The objectives of the Group for managing capital are to safeguard the ability of the Group in continuing as a going concern in order to provide returns for shareholders and benefits for other stakeholders and to maintain an optimal capital structure to reduce the cost of capital.

The Group monitors capital by using debt ratio analysis. This ratio is calculated as total liabilities (sum of current liabilities and non-current liabilities) divided by total assets as shown in the consolidated statement of financial position. During 2023, the strategy of the Group's capital management remained unchanged from 2022. The debt ratio of the Group as at 31 December 2023 was 67.41% (2022: 73.58%).

4 CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS

Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

The Group makes estimates and assumptions concerning the future. The resulting accounting estimates will, by definition, seldom equal the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are discussed below.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

4 CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS *(Cont'd)*

(a) Accounting estimates on impairment of goodwill

In accordance with the accounting policies stated in Note 2(l), the Group performs annual tests on whether goodwill has suffered any impairment or more frequently if events or changes in circumstances indicate that the carrying value may be impaired. The recoverable amounts of CGU or CGUs to which goodwill has been allocated are determined based on value-in-use calculations. The annual goodwill impairment assessment is complex because the determination of the recoverable amount of the underlying CGUs involves significant estimates and judgements, including the future sales volumes, fuel prices, gross margin and terminal growth rate used to estimate future cash flows and discount rates applied to these forecasted future cash flows of the underlying CGUs. These estimates and judgements may be significantly affected by changes in future market or economic conditions.

(b) Accounting estimates on impairment of property, plant and equipment

In accordance with the accounting policies stated in Note 2(l), the Group reviews at each reporting date to determine whether there is any indication of impairment on property, plant and equipment. If any such indication exists, then the recoverable amount of property, plant and equipment is estimated. The impairment assessment is by determining the recoverable amounts of the CGUs that the PPE are allocated to. The impairment assessment of property, plant and equipment was complex due to the significant estimates and judgements involved in the projections of future cash flows, including the future sales volumes, fuel prices, and discount rates applied to these forecasted future cash flows. These estimates and judgements may be significantly affected by changes in future market or economic conditions.

(c) Deferred income tax assets

The Group recognises the deferred income tax assets to the extent that it is probable that future taxable profit and taxable temporary differences will be available against which the deductible temporary differences and tax losses carried forward can be utilised, using tax rates that are expected to be applied in the period when the asset is recovered. Recognition of deferred income tax assets was complex because it requires significant estimation and judgement, and it involves significant assumptions, including future taxable profits, future tax rates, the reversal of deductible and taxable temporary differences, and the possible utilisation of tax losses carried forward that could be significantly affected by changes in the tax law framework and future market or economic conditions.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

5 REVENUE AND SEGMENT INFORMATION

(a) Disaggregation of revenue

In the following table, revenue is disaggregated by major products and/or service lines of revenue recognition. The table also includes a reconciliation of the disaggregated operating revenue to the Group's reportable segments (Note 5(b)).

For the year ended 31 December 2023	PRC power segment	Overseas segment Note 1	All other segments	Inter-segment revenue	Total
– Sales of power and heat	219,284,800	26,871,236	–	–	246,156,036
– Sales of coal ash, coal and raw materials	1,407,527	1,852	–	–	1,409,379
– Port service	–	–	663,581	(420,442)	243,139
– Transportation service	–	–	209,485	(145,948)	63,537
– Lease income	83,800	2,180,415	–	–	2,264,215
– Others	2,181,284	2,068,487	32,878	(22,260)	4,260,389
Total	222,957,411	31,121,990	905,944	(588,650)	254,396,695
Revenue:					
– From contracts with customers within the scope of IFRS 15					252,132,480
– From other sources					2,264,215

For the year ended 31 December 2022	PRC power segment	Overseas segment Note 1	All other segments	Inter-segment revenue	Total
– Sales of power and heat	207,923,505	28,167,697	–	–	236,091,202
– Sales of coal ash, coal and raw materials	1,763,278	1,640	–	–	1,764,918
– Port service	–	–	605,072	(346,149)	258,923
– Transportation service	–	–	228,019	(183,609)	44,410
– Lease income	108,211	1,220,675	–	–	1,328,886
– Others	2,444,212	4,781,394	31,421	(20,577)	7,236,450
Total	212,239,206	34,171,406	864,512	(550,335)	246,724,789
Revenue:					
– From contracts with customers within the scope of IFRS 15					245,395,903
– From other sources					1,328,886

Note 1: The overseas segment mainly consists of the operations in Singapore and Pakistan.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

5 REVENUE AND SEGMENT INFORMATION *(Cont'd)*

(a) Disaggregation of revenue *(Cont'd)*

The revenue from the sale of power and heat and the sale of coal ash, coal and raw materials is recognised at the point in time upon the transfer of products, whereas the revenue from port service, transportation service, maintenance service, and heating pipeline service is recognised over time during the provision of such services. Lease income is recognised over the lease term.

(b) Segment information

Directors and certain senior management of the Company perform the function as the chief operating decision maker (collectively referred to as the "senior management"). The senior management reviews the internal reporting of the Group in order to assess performance and allocate resources. The Company has determined the operating segments based on these reports. The reportable segments of the Group are the PRC power segment, overseas segment and all other segments (mainly including port and transportation operations). No operating segments have been aggregated to form a reportable segment.

Senior management assesses the performance of the operating segments based on a measure of profit before income tax expense under China Accounting Standards for Business Enterprises ("PRC GAAP") excluding dividend income received from other equity instrument investments, share of profits of China Huaneng Finance Co., Ltd. ("Huaneng Finance") and operating results of the centrally managed and resource allocation functions of headquarters ("segment results"). Other information provided, except as noted below, to the senior management of the Company is measured under PRC GAAP.

Segment assets exclude prepaid income tax, deferred income tax assets, other equity instrument investments, investment in Huaneng Finance and assets related to the centrally managed and resource allocation functions of the headquarters that are not attributable to any operating segment ("corporate assets"). Segment liabilities exclude current income tax liabilities, deferred income tax liabilities and liabilities related to the centrally managed and resource allocation functions of the headquarters that are not attributable to any operating segment ("corporate liabilities"). These are part of the reconciliation to total assets and liabilities of the consolidated statement of financial position.

(Amounts expressed in thousands of RMB unless otherwise stated)

5 REVENUE AND SEGMENT INFORMATION *(Cont'd)*

(b) Segment information *(Cont'd)*

All sales among the operating segments have been eliminated as internal transactions when preparing the consolidated financial statements.

(Under PRC GAAP)

	PRC power segment	Overseas segment	All other segments	Total
For the year ended 31 December 2023				
Total revenue	222,957,411	31,121,990	905,944	254,985,345
Intersegment revenue	–	–	(588,650)	(588,650)
External revenue	222,957,411	31,121,990	317,294	254,396,695
Segment results	8,147,698	4,987,181	115,510	13,250,389
Interest income	194,896	310,227	1,755	506,878
Interest expense	(7,645,067)	(1,154,473)	(114,778)	(8,914,318)
Impairment loss	(2,968,495)	(3,698)	–	(2,972,193)
Credit loss	(26,773)	(51,089)	(49,012)	(126,874)
Depreciation and amortisation	(24,099,983)	(707,643)	(257,549)	(25,065,175)
Net (loss)/gain on disposal of non-current assets	(314,464)	482	(11)	(313,993)
Share of profits less losses of associates and joint ventures	636,743	–	90,825	727,568
Income tax expense	(3,087,238)	(810,683)	(21,447)	(3,919,368)

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023

(Prepared in accordance with International Financial Reporting Standards)

(Amounts expressed in thousands of RMB unless otherwise stated)

5 REVENUE AND SEGMENT INFORMATION *(Cont'd)*

(b) Segment information *(Cont'd)*

(Under PRC GAAP)

	PRC power Segment	Overseas segment	All other segments	Total
For the year ended 31 December 2022				
Total revenue	212,239,206	34,171,406	864,512	247,275,124
Intersegment revenue	–	–	(550,335)	(550,335)
External revenue	212,239,206	34,171,406	314,177	246,724,789
Segment results	(12,554,462)	2,493,091	520,002	(9,541,369)
Interest income	203,093	133,871	2,294	339,258
Interest expense	(8,892,309)	(934,676)	(125,096)	(9,952,081)
Impairment loss	(2,726,262)	(5,834)	–	(2,732,096)
Credit loss	46,465	(94,722)	–	(48,257)
Depreciation and amortisation	(22,916,308)	(684,862)	(260,314)	(23,861,484)
Net gain/(loss) on disposal of non-current assets	164,415	(585)	(4)	163,826
Share of profits less losses of associates and joint ventures	423,159	–	522,934	946,093
Income tax expense	(26,205)	(335,157)	(20,844)	(382,206)

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

5 REVENUE AND SEGMENT INFORMATION *(Cont'd)*

(b) Segment information *(Cont'd)*

(Under PRC GAAP)

	PRC power segment	Overseas segment	All other segments	Total
31 December 2023				
Segment assets	**481,211,396**	**42,142,777**	**10,483,831**	**533,838,004**
Including:				
Additions to non-current assets (excluding financial assets and deferred income tax assets)	**68,329,270**	**235,865**	**101,597**	**68,666,732**
Investments in associates	**13,100,088**	**–**	**5,501,131**	**18,601,219**
Investments in joint ventures	**1,320,945**	**–**	**893,971**	**2,214,916**
Segment liabilities	**(343,289,950)**	**(21,690,531)**	**(1,876,151)**	**(366,856,632)**

	PRC power segment	Overseas segment	All other segments	Total
31 December 2022				
Segment assets	438,449,391	44,394,771	10,779,389	493,623,551
Including:				
Additions to non-current assets (excluding financial assets and deferred income tax assets)	44,492,820	240,565	53,207	44,786,592
Investments in associates	14,748,090	–	5,320,368	20,068,458
Investments in joint ventures	1,208,183	–	1,145,430	2,353,613
Segment liabilities	(344,746,791)	(27,166,963)	(2,015,618)	(373,929,372)

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

5 REVENUE AND SEGMENT INFORMATION *(Cont'd)*

(b) Segment information *(Cont'd)*

A reconciliation of external revenue to operating revenue is provided as follows:

	For the year ended 31 December	
	2023	2022
External revenue (PRC GAAP)	**254,396,695**	246,724,789
Operating revenue per IFRSs consolidated statement of comprehensive income	**254,396,695**	246,724,789

A reconciliation of segment results to profit before income tax expense is provided as follows:

	For the year ended 31 December	
	2023	2022
Segment results (PRC GAAP)	**13,250,389**	(9,541,369)
Reconciling items:		
Loss related to the headquarters	**(342,414)**	(287,484)
Share of profits of Huaneng Finance	**93,024**	125,340
Dividend income of other equity instrument investments	**835**	832
Impact of IFRSs adjustments*	**(524,692)**	(1,111,276)
Profit/(loss) before income tax expense per IFRSs consolidated statement of comprehensive income	**12,477,142**	(10,813,957)

(Amounts expressed in thousands of RMB unless otherwise stated)

5 REVENUE AND SEGMENT INFORMATION *(Cont'd)*

(b) Segment information *(Cont'd)*

Reportable segment assets are reconciled to total assets as follows:

	As at 31 December	
	2023	2022
Total segment assets (PRC GAAP)	**533,838,004**	493,623,551
Reconciling items:		
Investment in Huaneng Finance	**1,869,349**	1,476,326
Deferred income tax assets	**4,401,902**	6,322,055
Prepaid income tax	**148,075**	124,575
Other equity instrument investments	**642,923**	708,912
Corporate assets	**259,028**	350,560
Impact of IFRSs adjustments*	**9,156,732**	9,615,794
Total assets per IFRSs consolidated statement of financial position	**550,316,013**	512,221,773

Reportable segment liabilities are reconciled to total liabilities as follows:

	As at 31 December	
	2023	2022
Total segment liabilities (PRC GAAP)	**(366,856,632)**	(373,929,372)
Reconciling items:		
Current income tax liabilities	**(940,307)**	(331,928)
Deferred income tax liabilities	**(1,284,155)**	(1,086,765)
Corporate liabilities	**(715,626)**	(713,863)
Impact of IFRSs adjustments*	**(1,164,815)**	(843,786)
Total liabilities per IFRSs consolidated statement of financial position	**(370,961,535)**	(376,905,714)

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

5 REVENUE AND SEGMENT INFORMATION *(Cont'd)*

(b) Segment information *(Cont'd)*

Other material items:

	Reportable segment total	Headquarters	Share of profits of Huaneng Finance	Impact of IFRSs adjustments*	Total
For the year ended 31 December 2023					
Total revenue	**254,396,695**	**–**	**–**	**–**	**254,396,695**
Interest expense	**(8,914,318)**	**(23,766)**	**–**	**–**	**(8,938,084)**
Depreciation and amortisation	**(25,065,175)**	**(65,752)**	**–**	**(600,833)**	**(25,731,760)**
Impairment loss	**(2,972,193)**	**–**	**–**	**(164,709)**	**(3,136,902)**
Credit loss	**(126,874)**	**–**	**–**	**(2,135)**	**(129,009)**
Share of profits less losses of associates and joint ventures	**727,568**	**–**	**93,024**	**33,564**	**854,156**
Net loss on disposal of non-current assets	**(313,993)**	**–**	**–**	**(40,819)**	**(354,812)**
Income tax expense	**(3,919,368)**	**–**	**–**	**211,635**	**(3,707,733)**
For the year ended 31 December 2022					
Total revenue	246,724,789	–	–	–	246,724,789
Interest expense	(9,952,081)	(10,044)	–	–	(9,962,125)
Depreciation and amortisation	(23,861,484)	(51,809)	–	(574,549)	(24,487,842)
Impairment loss	(2,732,096)	–	–	(396,086)	(3,128,182)
Credit loss	(48,257)	–	–	–	(48,257)
Share of profits less losses of associates and joint ventures	946,093	–	125,340	(29,325)	1,042,108
Net gain on disposal of non-current assets	163,826	–	–	(34,989)	128,837
Income tax expense	(382,206)	–	–	223,548	(158,658)

* IFRSs adjustments above primarily represented the reclassification adjustments and adjustments related to business combination, borrowing cost and reserve fund. Other than the reclassification adjustments, the differences will be gradually eliminated following subsequent depreciation and amortisation of related assets or the extinguishment of liabilities.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

5 REVENUE AND SEGMENT INFORMATION *(Cont'd)*

(b) Segment information *(Cont'd)*

Geographical information (Under IFRSs):

(i) External revenue generated from the following countries:

	For the year ended 31 December 2023	2022
PRC	223,274,705	212,553,383
Overseas	31,121,990	34,171,406
Total	254,396,695	246,724,789

The geographical locations of customers are based on the locations at which the electricity was transferred, goods were delivered, and services were provided.

(ii) Non-current assets (excluding financial assets and deferred income tax assets) are located in the following countries:

	As at 31 December 2023	2022
PRC	422,749,621	386,751,134
Overseas	22,934,605	22,586,601
Total	445,684,226	409,337,735

The non-current asset information above is based on the locations of the assets.

The information on sales to major customers of the Group which accounted for 10% or more of external revenue is as follows:

In 2023, the revenue from grid companies under common control of State Grid Corporation of China within the PRC power segment in total accounted for 79% of external revenue (2022: 78%). The sales to a subsidiary of State Grid Corporation of China which accounted for 10% or more of external revenue are as follows:

	For the year ended 31 December 2023		2022	
	Amount	Proportion	Amount	Proportion
State Grid Shandong Electric Power Company	36,748,949	14%	37,348,460	15%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

5 REVENUE AND SEGMENT INFORMATION *(Cont'd)*

(c) Contract assets and liabilities

The contract assets primarily relate to the Group's rights to consideration for service completed but not billed at the reporting date. The contract assets are transferred to receivables when the rights become unconditional according to the contract.

The contract liabilities primarily relate to the advance received from customers for heat sales and heating pipeline upfront fees. The contract liabilities of RMB309 million (2022: RMB323 million) at the beginning of the year has been recognised as revenue of heating pipeline service in 2023. The contract liabilities of RMB2,745 million (2022: RMB2,712 million) at the beginning of the year has been recognised as revenue of heat sales in 2023.

(i) The transaction prices allocated to remaining performance obligations (unsatisfied or partially unsatisfied) related to heating pipeline upfront fees are as follows:

	As at 31 December	
	2023	2022
Within 1 year	**327,640**	148,671
Over 1 year	**2,478,695**	2,749,993
Total (Note 26)	**2,806,335**	2,898,664

The transaction prices allocated to the above remaining performance obligations expected to be recognised in more than one year relate to the provision of heating pipeline services, of which the performance obligations are to be satisfied within 17 years. All the other amounts of transaction prices allocated to the remaining performance obligations are expected to be recognised as revenue within one year. The amount disclosed above does not include variable consideration which is constrained.

(ii) Performance obligations

The Group has elected the practical expedient of not disclosing the remaining obligation excluding heating pipeline upfront fees. As allowed by IFRS 15, no information is provided about the performance obligations at 31 December 2023 that have an original expected duration of one year or less.

(Amounts expressed in thousands of RMB unless otherwise stated)

6 PROFIT/(LOSS) BEFORE INCOME TAX EXPENSE

Profit/(loss) before income tax expense was determined after charging/(crediting) the following:

	For the year ended 31 December	
	2023	2022
Total interest expense	**9,626,031**	10,955,940
Less: amounts capitalised in PPE	**687,947**	993,815
Interest expense charged to the consolidated statement of comprehensive income	**8,938,084**	9,962,125
Including: Interest expense on lease liabilities	**255,306**	298,798
Depreciation of property, plant and equipment	**24,679,041**	23,372,667
Depreciation of investment properties	**24,541**	21,791
Depreciation of right-of-use assets	**788,698**	985,746
	25,492,280	24,380,204
Included in other investment gain		
– Proceeds from disposal of investments in an associate and an subsidiary (Notes 8 and 40)	**(1,926,775)**	–
– Dividends on other equity instrument investments	**(835)**	(832)
– Others	**(2,802)**	(4,606)
	(1,930,412)	(5,438)

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

6 PROFIT/(LOSS) BEFORE INCOME TAX EXPENSE *(Cont'd)*

	For the year ended 31 December	
	2023	2022
Included in other operating expenses:		
– Operating expense of Ruyi Pakistan Energy	**2,365,674**	4,612,008
– Service concession construction cost	**3,802**	89,048
– Other materials expense	**1,805,231**	1,641,319
– Electricity charges	**919,282**	758,112
– Cost of sales of raw materials	**758,320**	631,590
– Water charges	**577,699**	594,212
– Insurance expense	**483,186**	490,155
– Cleaning, greening and fire protection expense	**399,362**	434,833
– Purchase of power generation quota	**29,338**	708
– Transportation allowance	**208,975**	194,367
– Pollutant charge	**85,528**	127,015
– Water conservancy fund and disabled security fund	**118,746**	107,873
– Test and inspection expense	**310,665**	343,754
– Service charge	**961,806**	545,375
– Heating pipeline related cost	**147,874**	158,520
– Auditors' remuneration-audit services	**44,025**	40,326
– Other consulting expense	**131,176**	161,004
– Office expense	**303,218**	278,921
– Minimum lease payments under operating leases, lease payments not included in the measurement of lease liabilities	**294,148**	327,003
– Amortisation of other non-current assets	**239,480**	107,638
– Property management expense	**145,124**	138,110
– Information technology maintenance expense	**278,885**	254,415
– Travel expense	**181,276**	90,300
– Business entertainment expense	**36,476**	34,318
– Research and development expenditure	**1,532,921**	1,607,847
– Net loss on disposal of materials and supplies	**–**	185
– Net loss/(gain) on disposal of non-current assets	**354,812**	(128,837)
– Recognition of provision for inventory obsolescence (Note 16)	**40,781**	6,486
– Impairment loss on property, plant and equipment	**2,735,886**	1,823,978
– Impairment loss on goodwill	**295,001**	897,524
– Impairment loss on other non-current assets*	**65,234**	400,194
– Gain on Three Supplies and Property Management	**(11,048)**	(139,094)
– Government grants**	**(1,231,671)**	(1,722,363)
– Donations	**73,060**	36,400
– Safety production expense	**1,784,442**	131,536
– Others	**1,296,623**	608,407
Total	**17,765,337**	15,683,187

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023

(Prepared in accordance with International Financial Reporting Standards)

(Amounts expressed in thousands of RMB unless otherwise stated)

6 PROFIT/(LOSS) BEFORE INCOME TAX EXPENSE *(Cont'd)*

* In 2023, the impairment loss on other non-current assets included impairment losses of RMB59.25 million on pre-construction cost and an impairment loss of RMB5.98 million on the Company's investment in an associate.

** In 2023, the government grants related to income mainly included heat supply subsidy of RMB234 million (2022: RMB435 million), shutdown standby compensation of RMB11 million (2022: RMB389 million), thermal coal subsidy of RMB368 million (2022: RMB312 million), VAT reduction and rebate of RMB165 million (2022: RMB204 million), the post stabilization subsidy of RMB9 million (2022: RMB14 million) and the coal guarantee fund received by each company of RMB27 million (2022: RMB10 million).

7 PROPERTY, PLANT AND EQUIPMENT

	Dams	Port facilities	Buildings	Electric utility plant in service	Transportation facilities	Others	CIP	Total
As at 1 January 2022								
Cost	2,222,549	3,973,839	15,716,208	549,679,065	1,352,671	9,152,056	52,448,424	634,544,812
Accumulated depreciation	(440,062)	(777,556)	(5,884,746)	(274,985,597)	(681,129)	(5,688,837)	–	(288,457,927)
Accumulated impairment losses	(459,602)	(439,190)	(331,790)	(21,605,225)	(782)	(103,016)	(2,327,401)	(25,267,006)
Net book value	1,322,885	2,757,093	9,499,672	253,088,243	670,760	3,360,203	50,121,023	320,819,879
Year ended 31 December 2022								
Beginning of the year	1,322,885	2,757,093	9,499672	253,088,243	670,760	3,360,203	50,121,023	320,819,879
Acquisition	–	–	66,458	1,284,296	–	9,207	–	1,359,961
Additions	–	151	–	1,517,890	1,447	97,816	37,629,702	39,247,006
Transfer from CIP	–	6,969	483,609	43,672,179	9,272	456,482	(44,628,511)	–
Other additions	–	–	26,867	97,060	–	52,383	–	176,310
Reclassification to investment property	–	–	(4,111)	–	–	–	–	(4,111)
Disposals/write-off	–	–	(3,294)	(237,484)	(42)	1,479	–	(239,341)
Depreciation charge	(37,357)	(116,643)	(516,543)	(22,153,551)	(69,439)	(492,290)	–	(23,385,823)
Impairment charge	–	–	(42,614)	(1,769,329)	–	(7,882)	(4,153)	(1,823,978)
Reclassification	–	–	8,396	(26,239)	(223)	18,066	–	–
Other decrease	–	–	(63,352)	(512,115)	–	(3,798)	–	(579,265)
Currency translation differences	–	–	–	538,799	–	6,623	10,462	555,884
End of the year	1,285,528	2,647,570	9,455,088	275,499,749	611,775	3,498,289	43,128,523	336,126,522
As at 1 January 2023								
Cost	2,222,549	3,980,959	16,286,556	596,521,418	1,353,432	9,796,770	45,323,413	675,485,097
Accumulated depreciation	(477,419)	(894,199)	(6,440,023)	(297,442,573)	(740,875)	(6,188,936)	–	(312,184,025)
Accumulated impairment losses	(459,602)	(439,190)	(391,445)	(23,579,096)	(782)	(109,545)	(2,194,890)	(27,174,550)
Net book value	1,285,528	2,647,570	9,455,088	275,499,749	611,775	3,498,289	43,128,523	336,126,522

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

7 PROPERTY, PLANT AND EQUIPMENT *(Cont'd)*

	Dams	Port facilities	Buildings	Electric utility plant in service	Transportation facilities	Others	CIP	Total
Year ended 31 December 2023								
Beginning of the year	1,285,528	2,647,570	9,455,088	275,499,749	611,775	3,498,289	43,128,523	336,126,522
Additions	–	261	25,836	2,112,028	338	114,985	58,701,682	60,955,130
Transfer from CIP	–	13,443	251,116	43,400,805	2,837	350,256	(44,018,457)	–
Other additions	–	–	32,803	189,181	–	28,636	–	250,620
Reclassification to investment property	–	–	(7,645)	–	–	–	–	(7,645)
Disposals/write-off	–	–	(3,427)	(314,908)	(153)	(3,746)	–	(322,234)
Disposal of a subsidiary	–	–	–	(116,199)	–	(2,556)	–	(118,755)
Depreciation charge	(33,788)	(116,350)	(498,342)	(23,686,475)	(56,634)	(575,051)	–	(24,966,640)
Impairment charge	–	–	(27,732)	(2,673,398)	–	(11,167)	(23,589)	(2,735,886)
Reclassification	81,534	8,811	(1,017,168)	1,043,630	(132,204)	15,397	–	–
Other decrease	–	(27,756)	(61,540)	(629,340)	–	(1,986)	–	(720,622)
Currency translation differences	–	–	–	213,111	–	65	2,153	215,329
End of the year	1,333,274	2,525,979	8,148,989	295,038,184	425,959	3,413,122	57,790,312	368,675,819
As at 31 December 2023								
Cost	2,353,642	4,038,384	15,403,101	638,861,202	1,178,155	10,073,054	59,971,856	731,879,394
Accumulated depreciation	(560,766)	(1,073,215)	(6,866,260)	(318,463,566)	(751,413)	(6,554,750)	–	(334,269,970)
Accumulated impairment losses	(459,602)	(439,190)	(387,852)	(25,359,452)	(783)	(105,182)	(2,181,544)	(28,933,605)
Net book value	1,333,274	2,525,979	8,148,989	295,038,184	425,959	3,413,122	57,790,312	368,675,819

Interest capitalisation

Interest expense of approximately RMB688 million (2022: RMB994 million) arising on borrowings for the construction of property, plant and equipment was capitalised during the year and was included in 'Additions' in property, plant and equipment. The weighted average capitalisation rate was approximately 3.01% (2022: 3.56%) per annum.

Security

As at 31 December 2023 and 2022, certain property, plant and equipment were pledged to banks as collateral for short-term loans (Note 30) and long-term loans (Note 24).

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

7 PROPERTY, PLANT AND EQUIPMENT *(Cont'd)*

Buildings without ownership certificates

At 31 December 2023, the Group was in the process of applying for the ownership certificates for certain buildings (buildings for power generation were included in electric utility plant in service) with an aggregate net book value of RMB3,433 million (2022: RMB4,675 million). Management is of the opinion that the Group is entitled to lawfully and validly occupy and use of the abovementioned buildings. There have been no litigations, claims or assessments against the Group for compensation with respect to the use of these buildings as at the date of approval of these financial statements.

Impairment

Note 1: Impairment of CGUs

For each CGU with indicator of impairment, the Company determines the recoverable amount based on the discounted future cash flows of the CGU and makes provision for impairment of each CGU accordingly. In 2023, impairment losses of PPE amounting to RMB2,736 million were recognised, including RMB2,167 million of PPE for six CGUs disclosed in below table and RMB569 million for individual assets. The details are as follows:

Company name	31 December 2023 Net book value of CGUs before impairment (RMB million)	31 December 2023 Recoverable amount (RMB million)	Impairment provision (RMB million) 2023	Impairment provision (RMB million) 2022
Huaneng Liaocheng Co-generation Limited Company ("Liaocheng Co-Generation") (a)	849	738	111	328
Huaneng Linyi Power Generation Limited Company ("Linyi Power") (a)	1,871	1,438	433	141
Huaneng Jining Yunhe Power Generation Co., Ltd. ("Jining Yunhe ") (a)	1,068	899	169	–
Huaneng Shandong Power Generation Co., Ltd. Zhongtai Power Plant ("Zhongtai Power Plant") (a)	211	54	157	–
Huaneng Chaohu Power Generation Co., Ltd. ("Chaohu Power Generation") (b)	1,703	1,237	466	–
Huaneng (Dalian) Thermal Power Co., Ltd. ("Dalian Thermal Power") (c)	4,335	3,504	831	–
Total	10,037	7,870	2,167	469

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

7 PROPERTY, PLANT AND EQUIPMENT *(Cont'd)*

Impairment *(Cont'd)*

Note 1: Impairment of CGUs *(Cont'd)*

(a) The four subsidiaries of Shandong Region: Liaocheng Co-generation, Linyi Power, Jining Yunhe and Zhongtai Power Plant

1) Background of CGUs with impairment recognised during the year

Liaocheng Co-generation operates 2x140MW and 2x330MW cogeneration coal-fired power generation units, with a total installed capacity of 940MW. The 2x140MW generation units commenced production in May and October 2003 respectively. The 2x330MW generation units commenced production in January and September 2006 respectively.

Linyi Power operates 4x140MW and 2x350MW cogeneration coal-fired power generation units, with a total installed capacity of 1,260MW. The 4x140MW generation units commenced production in December 1997 (3#), April 2003 (5#), September 2003 (6#) and April 2005 (7#) respectively. The 2x350MW generation units commenced production in December 2012 and October 2013 respectively. In 2023, Linyi Power 3# unit was shut down.

Jining Yunhe operates 4×145MW and 2×330MW cogeneration coal-fired power generation units, with a total installed capacity of 1,240MW. The 4×145MW units commenced production in 2000 (1#, 2#), 2003 (3#) and 2004 (4#) respectively. The 2×330MW units commenced production in 2006. In 2022, Jining Yunhe 3# and 4# units were shut down.

Zhongtai Power Plant operates 2×150MW cogeneration coal-fired power generation units, with a total installed capacity of 300MW. The 2×150MW units commenced production in May 2007 and December 2007 respectively.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

7 PROPERTY, PLANT AND EQUIPMENT *(Cont'd)*

Impairment *(Cont'd)*

Note 1: Impairment of CGUs *(Cont'd)*

(a) *The four subsidiaries of Shandong Region: Liaocheng Co-generation, Linyi Power, Jining Yunhe and Zhongtai Power Plant* *(Cont'd)*

2) Reasons for impairment

Provision for impairment in 2022

Due to the sharp rise in fuel prices since the fourth quarter of 2021, Liaocheng Co-generation, Linyi Power and Zhongtai Power Plant have suffered operating losses for two consecutive years in 2021 and 2022, impairment indicators thus incurred for the three companies in 2022. The Company engaged Beijing Tianjian Xingye Asset Evaluation Co., Ltd., an independent appraiser, to independently assess the recoverable amount of the above CGUs. According to the evaluation results, the Company made provisions for impairment of fixed assets of Liaocheng Co-generation and Linyi Power of RMB328 million and RMB141 million respectively as at 31 December 2022. As the recoverable amount of the Zhongtai Power Plant's CGU exceeded the carrying amount, no impairment was recognised.

In 2022, Jining Yunhe maintained its operating profit by leveraging its unique advantages in fuel procurement to keep prices at a relatively low level, thus no indicator of impairment emerged and therefore impairment testing was not performed.

Reasons for impairment recognised in 2023

To further implement the policy requirements about carbon emission peak and carbon neutrality, the Chinese government has vigorously developed non fossil fuels in recent years, promoted the continuous optimisation of energy structure, and steadily promoted low-carbon transformation. In the fourth quarter of 2023, in accordance with the relevant policy requirements of the country and Shandong Province, after considering the continuity factors of local residents' heating supply and communicating with the relevant government authorities of Shandong Province, the Company made a decision to gradually shut down 13 coal-fired power units below 300MW in the Shandong region of the Company from 2025 to 2026, indicators of impairments thus incurred.

The above-mentioned 13 coal-fired power units in the Shandong region of the Company, with a total installed capacity of 1,880MW, including two 140MW units from Liaocheng Co-generation, with a total installed capacity of 280MW, three 140MW units from Linyi Power with a total installed capacity of 420MW, two 145MW units from the Jining Yunhe with a total installed capacity of 290MW, two 150MW units from Zhongtai Power Plant with a total installed capacity of 300MW, one 110MW unit and three 160MW units from Yantai Power with a total installed capacity of 590MW.

For the coal-fired power plants mentioned above, after evaluation, the Company identified the impairment indicators for the CGUs related to the power generation units of Liaocheng Co-generation, Linyi Power, Jining Yunhe and Zhongtai Power Plant, and performed impairment assessments. The main situation of Yantai Power is that all four units of Yantai Power are located in Yantai urban area, and Yantai Power will be shut down in advance for relocation in other places according to the plan. After communication with the relevant government departments, the Company estimated the expected compensation for early shutdown, and there was no need to make provision for impairment in the test of Yantai Power.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

7 PROPERTY, PLANT AND EQUIPMENT *(Cont'd)*

Impairment *(Cont'd)*

Note 1: Impairment of CGUs *(Cont'd)*

(a) The four subsidiaries of Shandong Region: Liaocheng Co-generation, Linyi Power, Jining Yunhe and Zhongtai Power Plant *(Cont'd)*

3) Assumptions of impairment assessment

In 2023, the Company performed impairment assessments of the above mentioned 4 CGUs. The key assumptions used in estimating the recoverable amounts of the CGUs include future sales volume (power generation hours), fuel prices and discount rate (Note 2). Other main assumptions applied in the impairment assessments is average tariff. Key assumptions are listed in the following table:

Company name	Sales volume (power generation hours) Unit: hours/year		Tariff (excluding tax) Unit: RMB/MWh		Fuel prices (price of standard coal into the furnace) Unit: RMB/ton	
	Forecast period	2023 actual	Forecast period	2023 actual	Forecast period	2023 actual
Liaocheng Co-generation 2 × 330MW units	2024 and afterwards: 4,527	4,194	2024: 425.99 2025: 409.07 2026: 392.16 2027: 375.24 2028 and afterwards: 358.32	442.91	2024: 984.76 2025: 926.28 2026: 867.80 2027: 809.32 2028 and afterwards: 750.84	1,046.68
Liaocheng Co-generation 2 × 140MW units	2024: 2,837 2025: 2,837	2,265	2024: 489.09 2025: 456.40	521.78	2024: 984.76 2025: 926.28	1,046.68
Linyi Power 2 × 350MW units	2024 and afterwards: 4,650	4,500	2024: 413.77 2025: 408.18 2026: 402.58 2027: 396.99 2028 and afterwards: 391.39	431.61	2024: 1,136.21 2025: 1,068.05 2026: 999.89 2027: 931.73 2028 and afterwards: 863.59	1,174.82
Linyi Power 3 × 140MW units	2024: 2,450 2025: 2,450 2026: 604	2,484	2024: 461.09 2025: 443.66 2026: 426.24	487.63	2024: 1,136.21 2025: 1,068.05 2026: 999.89	1,174.82
Jining Yunhe 2 × 330MW units	2024 and afterwards: 4,617	4,593	2024: 440.81 2025: 420.19 2026: 399.56 2027: 378.94 2028 and afterwards: 358.32	458.17	2024: 899.12 2025: 853.02 2026: 806.93 2027: 760.83 2028 and afterwards: 714.73	941.29
Jining Yunhe 2 × 145MW units	2024: 3,324 2025: 3,324	3,763	2024: 438.20 2025: 418.23	461.43	2024: 899.12 2025: 853.02	941.29
Zhongtai Power Plant 2 × 150MW units	2024: 2,187 2025: 2,187 2026: 539	1,920	2024: 539.82 2025: 507.43 2026: 476.99	562.97	2024: 905.00 2025: 855.48 2026: 810.00	909.71

Note: The Group set a single power plant as a CGU, and forecasted the impairment assumptions by each power generation unit in the CGU.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

7 PROPERTY, PLANT AND EQUIPMENT *(Cont'd)*

Impairment *(Cont'd)*

Note 1: Impairment of CGUs *(Cont'd)*

(a) The four subsidiaries of Shandong Region: Liaocheng Co-generation, Linyi Power, Jining Yunhe and Zhongtai Power Plant *(Cont'd)*

3) Assumptions of impairment assessment *(Cont'd)*

Sales volume (power generation hours)

The Company estimated the power generation hours in the forecast period based on the market condition and the relevant power trading policies, as well as the generation efficiency of the units.

According to the "14th Five-Year Plan" of Electrical Power Development in Shandong Province, the incremental electricity consumption of the whole society in Shandong Province during the forecast period shall demonstrate an annual incremental rate of about 4.1%. Although the proportion of coal-fired power generation in the total social power generation is expected to decrease from 68.5% in 2020 to 60% in 2025, the total electricity volume of coal-fired power generation in 2025 is still expected to demonstrate an upward trend compared to that of 2020. Meanwhile, according to the "14th Five-Year Plan" of Electrical Power Development in Shandong Province, by 2025, the total installed coal-fired capacity shall be kept at around 100 million kW, which was expected to remain basically unchanged with the installation amount of 103 million kW as of year 2020. Therefore, the electricity volume generated by incremental installation capacity from new energy power plants and power supply from the outside of the province can be compensated from the incremental demand of electricity consumption in Shandong Province, thus coal-fired power units can maintain stable power generation hours during the forecast period.

As a result, the power generation hours of the above mentioned four power plants are expected to maintain stable average power generation hours during the forecast period. Meanwhile, these four power plants forecasted the power generation hours after fully considering the operation and condition of the existing power generation units, and the factors that resulting in changes in power generation hours in 2023, such as special maintenance, special scheduling by power grid, etc..

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

7 PROPERTY, PLANT AND EQUIPMENT *(Cont'd)*

Impairment *(Cont'd)*

Note 1: Impairment of CGUs *(Cont'd)*

(a) The four subsidiaries of Shandong Region: Liaocheng Co-generation, Linyi Power, Jining Yunhe and Zhongtai Power Plant *(Cont'd)*

3) Assumptions of impairment assessment *(Cont'd)*

Fuel prices (price of standard coal into the furnace)

The Company estimated the fuel prices in the forecast period based on the coal's source structure, supply and demand situation, as well as the relevant industry policies.

In 2023, domestic coal prices fell in the first half of the year and rebounded in the second half of the year. In the first half of the year, the supply and demand eased, and the price of thermal coal fell rapidly, with the price of 5500 kcal thermal coal in Qinhuangdao port declining from a high of RMB1,214/ton at the beginning of 2023 to RMB785/ton by mid-June, with a decline of 35.34%.Since the third quarter, the supply side disturbance superimposed non-electricity demand release, thermal coal prices rebounded at a low level. The price of 5500 kcal thermal coal in Qinhuangdao port rose from RMB785/ton to RMB1,035/ton in October, increased by 31.85%. Since November 2023, supply and demand have gradually eased, and the price of thermal coal has fallen slightly. At the end of 2023, the price of 5500 kcal thermal coal in Qinhuangdao port has fallen back to RMB921/ton. In 2023, the average price of 5500 kcal thermal coal in Qinhuangdao port was RMB965/ton, decreased by 23.99% year on year.

In 2023, the coal prices were much higher than the rational price range of RMB570-770/ton specified in Circular on *Further Improving the Coal Market Price Formation Mechanism* in February 2022 (NDRC Price [2022] No.303) (hereinafter referred to as "Document No.303") issued by the National Development and Reform Commission (the "NDRC"). The Company expected that the price of thermal coal will gradually return to the above rational range in the long run for the following reasons:

i In terms of coal supply, from the perspective of the current market and policy environment, the safe and stable supply of energy in line with the national conditions has been paid more attention. With the approval of the capacity increase of coal production and the intensity of the putting into production of new coal mines kept unchanged, the capacity and output of coal will be both enhanced, and the supply capacity of coal will increase in the future. For the year of 2023, the cumulative production of raw coal in China was 4.66 billion tons, increased by 2.9% year on year. In 2023, China imported 474 million tons of coal, reaching a new high record in history with an increase of 61.8% than last year.

7 PROPERTY, PLANT AND EQUIPMENT *(Cont'd)*

Impairment *(Cont'd)*

Note 1: Impairment of CGUs *(Cont'd)*

(a) The four subsidiaries of Shandong Region: Liaocheng Co-generation, Linyi Power, Jining Yunhe and Zhongtai Power Plant *(Cont'd)*

3) Assumptions of impairment assessment *(Cont'd)*

Fuel prices (price of standard coal into the furnace) *(Cont'd)*

ii In terms of coal consumption, although coal fired power generation being treated as ballast stones has become valuable gradually, the growth rate of coal consumption will be restrained under the trend of rapid development of clean energy. According to Modern Energy System Plan of 14th Five-Year Plan issued by the NDRC and National Energy Administration (the "NEA") on 29 January 2022, the growth of coal consumption will be strictly controlled. And according to the Opinions of the Central Committee of the CPC and the State Council on Comprehensively Promoting the Construction of a Beautiful China released on 11 January 2024, which put forward a plan to implement carbon emission peak and carbon neutrality, to strive to achieve carbon emission peak before 2030 in steps, and to lay the foundation for efforts to achieve carbon neutrality before 2060, we will focus on controlling the consumption of coal and other fossil fuels, strengthen the clean and efficient use of coal, vigorously develop non-fossil fuels, and speed up the construction of a new power system. Under the background of increasing supply and controlled consumption, the coal supply and demand will gradually improve.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

7 PROPERTY, PLANT AND EQUIPMENT *(Cont'd)*

Impairment *(Cont'd)*

Note 1: Impairment of CGUs *(Cont'd)*

(a) The four subsidiaries of Shandong Region: Liaocheng Co-generation, Linyi Power, Jining Yunhe and Zhongtai Power Plant *(Cont'd)*

3) Assumptions of impairment assessment *(Cont'd)*

Fuel prices (price of standard coal into the furnace) *(Cont'd)*

iii In recent years, the government authorities had implemented a series of policies to ensure supply and stabilize prices of coal market. For example, by expanding coverage of medium and long-term coal contracts and strengthening the supervision and inspection of the implementation of medium and long-term coal contracts, it was expected to promote rational coal prices decrease.

The Company took a holistic view on factors such as the implementation period of the aforementioned national policies, and the time for the commencement of the operation of the newly increased coal production capacities, combining factors such as the coal consumption structure, coal sources, and transportation modes of individual power plants, and estimated that even though there may be repeated imbalances between the coal supply and demand, expecting that coal prices would gradually fall from the current high level to the rational range as specified in Document No.303.

Regarding the coal prices in the long run, the Company reckoned that the domestic coal market can achieve a balanced supply and demand in the future. According to the statistics, there existed a strong correlation and fitting degree between the historical price trend of thermal coal in various regions of the Company in the past decade and the price index of Qinhuangdao port thermal coals (5500 kcal) in the past decade. From the perspective of a longer period, the coal in the past decade have experienced a period that featured the combination of relatively loose supply and relatively tight supply. As coal prices are intricate and are subject to periodic fluctuation, the forecasted long-term coal prices were based on the past average 10-year historical coal procurement prices of individual power plant, and adjusted according to special factors such as coal quality requirements, transportation mode and transportation distance of each power plant.

7 PROPERTY, PLANT AND EQUIPMENT *(Cont'd)*

Impairment *(Cont'd)*

Note 1: Impairment of CGUs *(Cont'd)*

(a) The four subsidiaries of Shandong Region: Liaocheng Co-generation, Linyi Power, Jining Yunhe and Zhongtai Power Plant *(Cont'd)*

3) Assumptions of impairment assessment *(Cont'd)*

Tariff (excluding tax)

Based on relevant national policies and regional electricity trading policies, the Company estimated the average tariff in the forecast period with reference to the current tariff level and the floating range of benchmark tariff. Referring to the terms in Document No.303 that encouraged to set reasonable terms on on-grid electricity tariff in medium and long-term electricity transaction contracts, to form price linkage between electricity tariff and coal prices in the medium and long-term contracts, achieving the effective transmission between coal prices and electricity tariffs. At the same time, the Company fully considers the guidance of the *Circular on the Establishment of a Coal-fired Power Capacity Electricity Tariff Mechanism* in November 2023 (NDRC Price [2023] No.1501) (hereinafter referred to as "Document No.1501") issued by NDRC and NEA, and comprehensively considers the impact of adjusting the current single-system electricity tariff of coal power to the two-part tariff system in future. The Company believes that under the two-part tariff system, the future tariff is expected to fully reflect the support and adjustment role of coal-power to the whole power grid, and with the decrease of fuel prices to a reasonable range and tend to remain stable, comprehensive tariff during the forecast period is expected to gradually fall from the current basis back to a stable level.

In 2023, the recoverable amounts were determined based on the discounted future cash flows of the 4 CGUs (Liaocheng Co-generation, Linyi Power, Jining Yunhe and Zhongtai Power Plant) using the assumptions above, and total amounts of impairment losses of RMB870 million for PPE and RMB295 million for goodwill were recognised respectively. The Company engaged Beijing Tianjian Xingye Asset Evaluation Co., Ltd. to independently estimate the recoverable amounts of the above CGUs, and valuation reports on the impairment assessment of the CGUs and goodwill of Jining Yunhe were issued.

(b) Chaohu Power Generation

1) Background of CGUs that recognised impairment during the year

Chaohu Power Generation operates two 600MW coal-fired generation units, which were put into operation in August 2008 and November 2008, respectively.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

7 PROPERTY, PLANT AND EQUIPMENT *(Cont'd)*

Impairment *(Cont'd)*

Note 1: Impairment of CGUs *(Cont'd)*

(b) Chaohu Power Generation *(Cont'd)*

2) Reasons for impairment

Reasons for no impairment recognised in 2022

In 2022, due to large amounts of losses of Chaohu Power Generation for two consecutive years, there was impairment indicators, and impairment assessments were performed by the Company with no impairment loss recognised.

The NDRC has intensively introduce relevant industry policies since the fourth quarter of 2021 to ensure energy security. The Company fully considered these policies when performing the impairment assessment in 2022:

i In terms of the signing of long-term fuel contracts, since the fourth quarter of 2022, the NDRC and NEA arranged for the deployment of signing and executing the medium and long-term thermal coal contracts in 2023, which would further strengthen the signing, execution, and supervision of medium and long-term contracts for thermal coal, aiming to achieve the realisation of the "Three 100%", namely, 100% coverage rate of medium and long-term thermal coal contracts to cover annual coal consumption amount by power generation and heat supply companies; 100% monthly fulfillment of medium and long-term thermal coal contracts, and 100% implementation of medium and long-term thermal coal contract price policies. At the end of 2022, with the support of the Anhui Provincial Government, Chaohu Power Generation actively seized the opportunity and signed medium and long-term contracts for thermal coal with the coal producers in Shaanxi and Shanxi, and actively reported the demand for imported coal. It was expected that the proportion of medium and long-term contracts for thermal coal in 2023 would be 100% fully covered.

ii In terms of fuel prices, Document No.303 was aiming to provide guidelines on the price of coal (thermal coal, similarly hereinafter) to operate within a reasonable range, and improve the price transmission mechanism between coal prices and electricity tariff, specifying that the reasonable range of the medium and long-term trading prices of thermal coal (5500 kcal) at Qinhuangdao port was adjusted from the previous floating price of RMB535/ton to the range from RMB570/ton to RMB770/ton. The Document No.303 also aimed to provide guidelines on the formation of coal prices and on-grid tariffs through the way of medium and long-term transactions and encouraged to set reasonable terms on on-grid tariff in medium and long-term electricity transaction contracts, so as to form price linkage between electricity tariff and coal prices in the medium and long-term contracts, achieving the effectively transmission between coal prices and electricity tariffs. And also aimed to improve the ability to adjust supply and demand in the coal market, to further improve the coal production, supply, storage and marketing system, to ensure reasonable and sufficient coal production capacity, to improve the medium and long-term contract system for coal, to further enhance the government's ability to dispatch and store coal, and to improve the reserve adjustment mechanism by timely storage and circulation of coal so as to promote the operation of coal prices within a reasonable range. At the same time, it also improved the fuel prices regulation mechanism and took measures to provide guidelines on fuel prices back to a reasonable range when significant price fluctuations occur.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

7 PROPERTY, PLANT AND EQUIPMENT *(Cont'd)*

Impairment *(Cont'd)*

Note 1: Impairment of CGUs *(Cont'd)*

(b) Chaohu Power Generation *(Cont'd)*

2) Reasons for impairment *(Cont'd)*

Reasons for no impairment recognised in 2022 *(Cont'd)*

iii In terms of electricity tariff, in October 2021, the NDRC issued the *Circular on Further Stepping up the Market-oriented Reform of On-grid Tariffs for Coal-fired Power Generation* (NDRC Price [2021] No.1439) (hereinafter referred to as "Document No.1439"), which stipulated that all coal-fired power generation would, in principle, enter the electricity market, and the on-grid tariff would be formed through market transactions within the range of "benchmark tariff plus floating range". The Document No.1439 stipulated that the range of fluctuations of the market prices for the coal-fired powers would be adjusted from the current rates of not more than 10% upward and not more than 15% downward to not more than 20% upward or downward, in principle, while high energy-consuming enterprises could break the 20% upward ceiling. And the spot price of electricity would not be limited by the above range. After the issuance of the Document No.1439, 344 coal-fired power generation enterprises and 99 power sales companies in Anhui Province participated in the transaction in 2022, with a turnover of 170.669 billion kWh. The average price rose by 19.83% than the benchmark electricity tariff. Based on relevant national policies and regional electricity trading policies, the Company estimated the average tariff in the forecast period with reference to the current tariff level and the floating range of benchmark tariff.

In conclusion, the Company estimated the operating performance in the coming years would be greatly improved compared with that in 2022, and through impairment assessment, no impairment loss was recognised for the year ended 31 December 2022.

Reasons for impairment recognised in 2023

As mentioned above, when the Company performed impairment assessment in 2022, it is expected that Chaohu Power Generation would achieve 100% coverage of the medium and long-term contract ratio of thermal coal in 2023. However, in 2023, due to the constraints of some suppliers by their own performance capacity, coal transport capacity, market fluctuations, coal origin policies and other multiple factors, the coverage rate of Chaohu Power generation's actual medium and long-term contract was seriously insufficient (less than 40%). In addition, affected by changes in the international situation, the price of imported coal in 2023 has fluctuated. The above factors led to the actual fuel price of Chaohu Power Generation in 2023 higher than expected, and there were large losses made in 2023. In this way, there was indicator of impairment.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

7 PROPERTY, PLANT AND EQUIPMENT *(Cont'd)*

Impairment *(Cont'd)*

Note 1: Impairment of CGUs *(Cont'd)*

(b) ***Chaohu Power Generation*** *(Cont'd)*

3) Assumptions of impairment assessment

In 2023, the Company performed impairment assessment on the above-mentioned CGUs. The key assumptions used in estimating the recoverable amounts of the CGUs include future sales volume (power generation hours), fuel prices and discount rate (Note 2). Other main assumptions applied in the impairment assessment is average tariff. Key assumptions are listed in the following table:

	Sales volume (power generation hours) Unit: hours/year		Tariff (excluding tax) Unit: RMB/MWh		Fuel prices (price of standard coal into the furnace) Unit: RMB/ton	
Company name	**Forecast period**	**Actual in 2023**	**Forecast period**	**Actual in 2023**	**Forecast period**	**Actual in 2023**
Chaohu Power Generation	2024: 4,917 2025: 4,729 2026: 4,542 2027: 4,354 2028 and afterwards: 4,167	5,165	2024: 391.15 2025: 384.28 2026: 377.41 2027: 370.53 2028 and afterwards: 363.66	408.81	2024: 1,090.91 2025: 1,051.09 2026: 1,011.26 2027: 971.44 2028 and afterwards: 931.62	1,190.17

Note: The Group set a single power plant as a CGU, and forecasted the impairment assumptions by each power generation unit in the CGU.

7 PROPERTY, PLANT AND EQUIPMENT *(Cont'd)*

Impairment *(Cont'd)*

Note 1: Impairment of CGUs *(Cont'd)*

(b) Chaohu Power Generation *(Cont'd)*

3) Assumptions of impairment assessment *(Cont'd)*

Sales volume (power generation hours)

The Company estimated the power generation hours in the forecast period based on the market condition, the relevant power trading policies and the efficiency of power generation units. According to the "*14th Five-Year Plan*" of Electrical Power Development in Anhui Province, the incremental electricity consumption of the whole society in Anhui Province during the forecast period shall demonstrate an annual incremental rate of about 6% to 6.6%. During the "*14th Five-Year Plan*" period, Anhui Province plans to add about 18 million kW of grid-connected wind power and photovoltaic power generation capacity. However, by the end of 2023, the installed capacity of the whole society in Anhui Province was 105 million kW, with an increase of 27 million kW over 2020. Among them, the installed capacity of wind power and photovoltaic power generation increased by 19.8 million kW or 111.62%, 13.08% higher than the total installed capacity of the province, reaching the 14th Five-Year new grid-connected construction scale of Anhui Province two years and one quarter ahead of schedule. The installed capacity of new energy exceeded expectations which will lead to the decrease of future power generation hours of coal-fire power plant. Chaohu Power Generation completed power generation of 6.2 billion kWh in 2023 which was basically the same as that in 2022. There were special reasons for maintaining high power generation utilization hours in the past two years. Since 2022, affected by extreme weather, high temperature and drought, the hydropower generation in Southwest China has been greatly reduced, the power from other provinces into Anhui Province has been reduced as well, and the power shortage in the province has been tense in stages, Chaohu Power Generation actively undertook the responsibility to maintain power supply, resulting in a higher volume power generation in 2022 and 2023, and the future power generation hours might be lower than that of 2022 and 2023. In addition, the number of large-capacity thermal power units planned in Anhui Province has increased, and with the implementation of the "Xinjiang Power into Anhui" and "Shaanxi Power into Anhui" projects (striving to be put into operation in 2025), the future thermal power generation hours will be further compressed. As a result, the Company expects a steady decline in the number of generation hours in the future, from 4,917 hours in 2024 to 4,167 hours in 2028.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

7 PROPERTY, PLANT AND EQUIPMENT *(Cont'd)*

Impairment *(Cont'd)*

Note 1: Impairment of CGUs *(Cont'd)*

(b) ***Chaohu Power Generation*** (Cont'd)

3) Assumptions of impairment assessment *(Cont'd)*

Fuel prices (price of standard coal into the furnace)

The Company estimated the fuel prices in the forecast period based on the coal's source structure, supply and demand situation, as well as the relevant industry policies.

As mentioned earlier in part a), fuel prices (price of standard coal into the furnace), the Company comprehensively considers the implementation time of national policies, the construction and operation time of new coal production capacity, combined with the coal structure, coal source and transportation of the power plant itself, it is expected that there may be repeated games between coal supply and demand, so the fuel prices will gradually fall back to the reasonable range as specified in Document No.303.

The Company reckoned that the domestic coal market can achieve a balanced supply and demand in the future. According to the statistics, there existed a strong correlation and fitting degree between the historical price trend of thermal coal in various regions of the Company in the past decade and the price index of Qinhuangdao port thermal coals (5500 kcal) in the past decade. From the perspective of a longer period, the coal in the past decade has experienced a period that featured the combination of relatively loose supply and relatively tight supply. As coal prices are intricate and are subject to periodic fluctuation, the forecasted long-term coal prices were based on the past average 10-year historical coal procurement prices of individual power plants, and it is expected that the coal price will gradually decline to RMB931.62/ton.

Tariff (excluding tax)

Based on relevant national policies and regional electricity trading policies, the Company estimated the average tariff in the forecast period with reference to the current tariff level and the floating range of benchmark tariff. Referring to the terms in Document No.303 that encouraged to set reasonable terms on on-grid electricity tariff in medium and long-term electricity transaction contracts, to form price linkage between electricity tariff and coal prices in the medium and long-term contracts, achieving the effective transmission between coal prices and electricity tariffs. At the same time, the Company fully considers the guidance of Document No.1501, and comprehensively considers the impact of adjusting the current single-system electricity tariff of coal power to two-part tariff system in future. The Company believes that under the two-part tariff system, the future tariff is expected to fully reflect the support and adjustment role of coal-power to the whole power grid, and with the decrease of fuel prices to a reasonable range and tend to remain stable, comprehensive tariff during the forecast period is expected to gradually fall from the current basis back to a stable level.

7 PROPERTY, PLANT AND EQUIPMENT *(Cont'd)*

Impairment *(Cont'd)*

Note 1: Impairment of CGUs *(Cont'd)*

(b) Chaohu Power Generation *(Cont'd)*

3) Assumptions of impairment assessment *(Cont'd)*

Tariff (excluding tax) *(Cont'd)*

In 2023, the recoverable amounts were determined based on the discounted future cash flows of the CGUs using the assumptions above, and RMB466 million impairment losses of PPE were recognised. The Company engaged Beijing Tianjian Xingye Asset Evaluation Co., Ltd. to independently estimate the recoverable amounts of the above CGU and a valuation report on the impairment assessment of above CGU were issued.

(c) Dalian Thermal Power

1) Background of CGUs with impairment recognised during the year

Dalian Thermal Power operates 2×50MW and 2×350MW cogeneration coal-fired units with a total installed capacity of 800MW. The 2×50MW units commenced production in November 2020 and December 2020 respectively; and the 2×350MW units commenced production in June 2022 and December 2022 respectively.

2) Reasons for impairment

After the 2×350MW units of Dalian Thermal Power were put into operation in 2022, and due to the lower power generation hours and higher coal price, Dalian Thermal Power suffered total operating losses of RMB300 million and RMB275 million in 2022 and 2023 respectively, large losses for two consecutive years after normal commissioning, impairment indicators thus incurred.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

7 PROPERTY, PLANT AND EQUIPMENT *(Cont'd)*

Impairment *(Cont'd)*

Note 1: Impairment of CGUs *(Cont'd)*

(c) Dalian Thermal Power *(Cont'd)*

3) Assumptions of impairment assessment

In 2023, the Company performed impairment assessments of the above-mentioned CGU. Key assumptions used in estimating the recoverable amounts include future sales volume (power generation hours), fuel prices and discount rate (Note 2). Other assumptions applied in the impairment assessments is the average tariff. Key assumptions are listed in the following table:

	Sales volume (power generation hours) Unit: hours/year		Tariff (excluding tax) Unit: RMB/MWh		Fuel prices (price of standard coal into the furnace) Unit: RMB/ton	
Company name	Forecast period	Actual in 2023	Forecast period	Actual in 2023	Forecast period	Actual in 2023
Dalian Thermal Power 2 × 350MW units	2024: 2,891 2025 and afterwards: 3,400	2,963	2024: 442.79 2025: 438.94 2026: 435.09 2027: 420.27 2028 and afterwards: 405.46	450.32	2024: 1,007.19 2025: 956.98 2026: 906.78 2027: 856.57 2028 and afterwards: 806.37	1,157.28
Dalian Thermal Power 2 × 50MW units	2024 and afterwards: 1,296	991	2024: 398.12 2025: 396.46 2026: 394.81 2027: 379.99 2028 and afterwards: 365.18	409.39	2024: 1,007.19 2025: 956.98 2026: 906.78 2027: 856.57 2028 and afterwards: 806.37	1,157.28

Note: The Group set a single power plant as a CGU, and forecasted the impairment assumptions by each power generation unit in the CGU.

7 PROPERTY, PLANT AND EQUIPMENT *(Cont'd)*

Impairment *(Cont'd)*

Note 1: Impairment of CGUs *(Cont'd)*

(c) Dalian Thermal Power *(Cont'd)*

3) Assumptions of impairment assessment *(Cont'd)*

Sales volume (power generation hours)

Due to the relevant short commissioning time, the operation status of the 2×350MW generation units of Dalian Thermal Power await further stability and the power generation hours of 2,891 hours in 2024 was forecasted. Since 2025, according to the "*14th Five-Year Plan for Energy Development*" of Liaoning Province ("the Plan"), the incremental electricity consumption of the whole society in Liaoning Province during the forecast period shall demonstrate an annual incremental rate of about 5%, and the electricity consumption of the whole society is expected to reach 309.3 billion kWh in 2025. According to the Plan, by 2025, non-fossil energy generation will account for 47.3% of Liaoning Province's electricity generation, the installed capacity of electricity will reach 90.36 million kW, and the proportion of non-fossil energy installed capacity will exceed 50%. After considering the external electricity, it is inferred that the average power generation hours of thermal power generation in Liaoning Province will be around 3,100 hours starting from 2025. Base on above factors, the Company estimated 3,400 hours of power generation in 2025 and beyond due to the following reasons. On the one hand, in accordance with the guidance of Document No.1501, considering the relatively low energy consumption of the generation units of Dalian Thermal Power and its strong willingness to generate more electricity in the case of marginal contribution. On the other hand, due to the fact that Dalian power grid is located at the end of the power grid and unable to absorb excessive external electricity, it is necessary to ensure the output of power plants in the Dalian area. Dalian Thermal is expected to participate more in market-oriented transactions.

The 2×50MW generation units of Dalian Thermal Power are mainly used for heating business. Due to the special scheduling by power grid, the power generation hours of these two units were relatively low with single-unit operation in some periods in 2023. Considering the historical power generation hours, 1,395 hours in 2021 and 1,472 hours in 2022, and the future heating arrangement, the Company estimated that the power generation hours will be 1,296 hours since 2024 and beyond.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

7 PROPERTY, PLANT AND EQUIPMENT *(Cont'd)*

Impairment *(Cont'd)*

Note 1: Impairment of CGUs *(Cont'd)*

(c) Dalian Thermal Power *(Cont'd)*

3) Assumptions of impairment assessment *(Cont'd)*

Fuel prices (price of standard coal into the furnace)

The Company estimated the fuel prices in the forecast period based on the coal's source structure, supply and demand situation, as well as the relevant industry policies.

As mentioned earlier in part a), fuel prices (price of standard coal into the furnace), the Company comprehensively considers the implementation time of national policies, the construction and operation time of new coal production capacity, combined with the coal structure, coal source and transportation of the power plant itself, it is expected that there may be repeated games between coal supply and demand, so the fuel prices will gradually fall back to the reasonable range specified in Document No.303.

The Company reckoned that the domestic coal market can achieve a balanced supply and demand in the future. According to the statistics, there existed a strong correlation and fitting degree between the historical price trend of thermal coal in various regions of the Company in the past decade and the price index of Qinhuangdao port thermal coals (5,500 kcal) in the past decade. From the perspective of a longer period, the coal in the past decade have experienced a period that featured the combination of relatively loose supply and relatively tight supply. As coal prices are intricate and are subject to periodic fluctuation, the forecasted long-term coal prices were based on the past average 10-year historical coal procurement prices of individual power plant, and it is expected that the coal price will gradually decline to RMB806.37/ton.

Tariff (excluding tax)

Based on relevant national policies and regional electricity trading policies, the Company estimated the average tariff in the forecast period with reference to the current tariff level and the floating range of benchmark tariff. In combination with the reasonable setting of the on-grid tariff and the coal medium and long-term transaction price linkage clause in the medium and long-term power transaction contracts mentioned in No.303 Document, the requirements for coal and tariff transmission are effectively realized. At the same time, the Company fully considers the spirit of Document 1501, and comprehensively considers the impact of adjusting the current single-system electricity tariff of coal power to the two-part tariff system on future sales electricity tariff. The Company believes that under the two-part tariff system, the future tariff is expected to fully reflect the support and adjustment role of coal-power to the whole power Grid, and with the decrease of fuel prices to a reasonable range and tend to remain stable, comprehensive tariff during the forecast period is expected to gradually fall from the current basis back to a stable level.

In 2023, the recoverable amount was determined based on the discounted future cash flows of the CGUs using the assumptions above and impairment losses of RMB831 million of PPE were recognised. The Company engaged Beijing Tianjian Xingye Asset Evaluation Co., Ltd. to independently estimate the recoverable amount of the above CGU, and a valuation report on the impairment assessment of the CGU was issued.

(Amounts expressed in thousands of RMB unless otherwise stated)

7 PROPERTY, PLANT AND EQUIPMENT *(Cont'd)*

Impairment *(Cont'd)*

Note 2: Discount rate

The Company determines the after-tax discount rate based on the weighted average cost of capital (WACC) when performing the impairment assessments of the above CGUs and the goodwill of Chinese Mainland power generations.

The calculating formula of the WACC is: WACC = Ke × (E/(D+E)) + Kd × (1-T) × (D/(D+E)). D is the value of debt and E is the value of equity. Among which, the cost of equity is calculated by using the capital asset pricing model ("CAPM"), equals to risk-free return on investment ("risk-free rate") plus the return premium reflecting an entity's risk ("risk premium"), namely: Ke = Rf + β × ERP + ε. The value of each parameter is shown in the table below:

Parameters		Amount	Remarks
Rf	Risk-free interest rate	2.56%	Select China treasury bonds with a remaining maturity over 10 years from the base date (31 December 2023) of assets valuation and calculate their yield to maturity rate provided by China Central Depository & Clearing Co., Ltd., as the risk-free interest rate through the China Appraisal Society website: http://www.cas.org.cn/.
β	β Coefficient	0.3002	Based on the average value (31 December 2023) of the beta coefficient of comparable companies without financial leverage.
ERP	Equity Risk Premiums	7.17%	Use historical CSI 300 index to estimate the rate of return on investment of the Chinese stock market; select monthly CSI 300 index as at the base date (31 December 2023) of valuation through Wind information market database, use the 10-year moving arithmetic average method in the calculation.
ε	Specific Risk Premium Rate	5.00%	Use the comprehensive analysis method to determine the specific risk return rate ε, which means to consider all these factors of the assessed entities such as its asset scale, development stage, market competition status, internal governance structure and capital structure, etc.
Kd	Cost of Debt	4.20%	Take the five-year loan prime rate (LPR) (31 December 2023) as the cost of debt.
T	Income Tax Rate	25%, etc.	Determine the applicable income tax rate according to the Corporate Income Tax Law.

When the after-tax discount rate is calculated, the pre-tax discount rate is determined through an iterative loop calculation based on the assumption of "present value of cash flow before tax = present value of cash flow after tax". As a result of the calculation, the Company adopts pre-tax discount rates ranging from 7.32% to 8.20%.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

7 PROPERTY, PLANT AND EQUIPMENT *(Cont'd)*

Impairment *(Cont'd)*

Note 3: Impairment losses for individual asset

Each year, the Company performs impairment assessment of the PPE in a timely manner, based on arrangements of current year industry policies, such as the shutting down of certain power plants, demolition of certain generation units for the purpose of technical transformation. The details for impairment losses recognised for such kind of PPE in 2023 are as follows:

Company name	Impairment recognised (RMB million)	Reasons for impairment and operational status before decommissioning
Huaneng Power International, Inc. Jining Power Plant ("Jining Power Plant")	188	In the fourth quarter of 2023, the Company planed to scrap 5# and 6# generation units of Jining Power Plant. Based on the impairment assessment conducted by Beijing Tianjian Xingye Asset Evaluation Co., Ltd., impairment losses of RMB188 million were recognised for the decommissioned assets after considering their recoverable amounts.
Huaneng Hainan Power Inc. Wenchang Wind Farm ("Wenchang Wind Farm")	111	According to the requirements of *the Management Measures for Wind Farm Renovation, Upgrading and Retirement* issued by the NEA, Wenchang Wind Farm was expected to implement a "replacing small with large" capacity expansion and renovation project, which was approved with a filing certificate in November 2023. The Company planned to dismantle the power generation, transmission and transformation equipment, and firefighting equipment of Wenchang Wind Farm early. Based on the impairment assessment conducted by Beijing Tianjian Xingye Asset Evaluation Co., Ltd., impairment losses of RMB111 million were recognised for the decommissioned assets after considering their recoverable amounts. The generation units were in normal operational status before dismantlement.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

7 PROPERTY, PLANT AND EQUIPMENT *(Cont'd)*

Impairment *(Cont'd)*

Note 3: Impairment losses for individual asset *(Cont'd)*

Company name	Impairment recognised (RMB million)	Reasons for impairment and operational status before decommissioning
Huaneng Shandong Power Generation Co., Ltd. Baiyanghe Power Plant ("Baiyanghe Power Plant")	81	4# and 5# generation units of Baiyanghe Power Plant were officially shut down in September 2023. Based on the impairment assessment conducted by Beijing Tianjian Xingye Asset Evaluation Co., Ltd., impairment losses of RMB81 million were recognised for the decommissioned assets after considering their recoverable amounts. The generation units were in normal operational status before shutting down.
Linyi Power	73	No. 3 generation unit of Linyi Power was officially shut down in December 2023. Based on the impairment assessment conducted by Beijing Tianjian Xingye Asset Evaluation Co., Ltd., impairment losses of RMB73 million were recognised for the decommissioned assets after considering their recoverable amount. The generation unit was in normal operational status before shutting down.
Subtotal of other 9 items	116	
Total	569	

For the impairment test of above individual assets, the Company determined the recoverable amount based on the fair value less costs to sell. The key assumption used in determining the recoverable amount include the price of copper, steel, aluminum, etc., which have been queried by the market. Based on the results of the impairment test, the Company made an impairment loss of RMB569 million on the above-mentioned individual assets.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

8 INVESTMENTS IN ASSOCIATES AND JOINT VENTURES

	2023	2022
Beginning of the year	**24,015,630**	23,085,837
Capital injections in associates and joint ventures	**632,028**	452,010
A joint venture transformed into a subsidiary*	**(1,600)**	(14,707)
Disposal**	**(2,080,810)**	–
Share of profit less loss	**854,156**	1,042,108
Share of other comprehensive (loss)/income	**(17,378)**	58,576
Share of other capital reserve	**(25,928)**	170,701
Dividends	**(657,649)**	(778,895)
Provision of impairment	**(5,982)**	–
End of the year	**22,712,467**	24,015,630

* Huaneng Shuifa (Dashiqiao) New Energy Co., Ltd. ("Shuifa Dashiqiao") was previously a joint venture established by a subsidiary of the Company, Huaneng Yingkou Co-generation Limited Liability Company ("Yingkou Co-generation") and the other shareholder with 50%:50% equity interests.

In August 2023, Shuifa Dashiqiao held a shareholders' meeting to approve a capital injection plan whereby Yingkou Co-generation's interests in Shuifa Dashiqiao increased to 51% after capital injection of RMB65.30 thousand. According to the capital injection plan and the updated articles of association of Shuifa Dashiqiao, Shuifa Dashiqiao was controlled by Yingkou Co-generation and therefore it was included in the consolidated financial statements since the acquisition date as at 28 August 2023.

** In 2023, in order to optimize the Company's asset management and accelerate the return of funds from the Company's equity investment, the Company disposed of 49% of the entire equity interest in Sichuan Huaneng Hydropower Development Co., Ltd. ("Sichuan Energy Development") to Huaneng Lancang River Hydropower Inc.. The above-mentioned transaction was agreed by all parties with a consideration of RMB4.203 billion based on the appraisal value in the *Asset Appraisal Report on the Value of All Shareholders' Equity of Sichuan Energy Development Involved in Huaneng Lancang River Hydropower Inc. (Dazheng Ping Bao Zi (2023) No. 222A)* issued by Beijing Guoyou Dazheng Asset Evaluation Co., Ltd. The above transaction was completed in September 2023 resulting in a gain of RMB1.961 billion recorded in other investment gain, including the share of other capital reserve on Sichuan Energy Development amounting to RMB4.81 million transferred to other investment gain upon the disposal. And the Company has received the disposal consideration in full during the year.

(Amounts expressed in thousands of RMB unless otherwise stated)

8 INVESTMENTS IN ASSOCIATES AND JOINT VENTURES *(Cont'd)*

As at 31 December 2023, investments in associates and joint ventures of the Group are unlisted except for Shenzhen Energy Corporation Limited ("SECL"), which is listed on the Shenzhen Stock Exchange. The following list contains only the particulars of material associates and joint ventures.

Name	Country of incorporation	Registered capital	Business nature and scope of operation	Percentage of equity interest held Direct	Indirect
Associates:					
SECL (Note 1)	PRC	RMB4,757,389,916	Energy and investment in related industries	25.02%	–
Hebei Hanfeng Power Generation Limited Liability Company ("Hanfeng Power")	PRC	RMB1,975,000,000	Power generation	40%	–
Huaneng Finance	PRC	RMB7,000,000,000	Provision of financial service, including fund deposit and lending services, finance lease arrangements, notes discounting and entrusted loans and investment arrangements within Huaneng Group	20%	–
China Huaneng Group Fuel Co., Ltd. ("Huaneng Group Fuel Company") (Note 2)	PRC	RMB3,000,000,000	Wholesale of coal, import and export of coal	50%	–

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

8 INVESTMENTS IN ASSOCIATES AND JOINT VENTURES *(Cont'd)*

Name	Country of incorporation	Registered capital	Business nature and scope of operation	Percentage of equity interest held Direct	Indirect
Hainan Nuclear Power Limited Liability Company ("Hainan Nuclear")	PRC	RMB5,141,810,000	Construction and operation of nuclear power plants; production and sales of electricity and related products	30%	–
Huaneng Shidaowan Nuclear Power Development Co., Ltd. ("Shidaowan Nuclear Power")	PRC	RMB5,310,000,000	Construction of nuclear power plants; production and sales of electricity	22.5%	–
Huaneng Tiancheng Financial Leasing Corporation Limited ("Tiancheng Financial Leasing")	PRC	RMB4,050,000,000	Financial leasing business	20%	–

Note 1 As at 31 December 2023, the fair value of the Group's shares in SECL was RMB7,676 million (31 December 2022: RMB7,569 million).

Note 2 In accordance with the articles of association of the investee, the Group could only exercise significant influence on the investee and therefore accounted for the investment under the equity method.

All the above associates and joint ventures are accounted for under the equity method in the consolidated financial statements.

(Amounts expressed in thousands of RMB unless otherwise stated)

8 INVESTMENTS IN ASSOCIATES AND JOINT VENTURES *(Cont'd)*

Summarised financial information of the material associates, adjusted for any differences in accounting policies and acquisition adjustments, and reconciliation to the carrying amounts in the consolidated financial statements, are disclosed below:

	Sichuan Energy Development		SECL		Huaneng Finance		Hanfeng Power		Huaneng Group Fuel Company		Hainan Nuclear	
	2023	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023	2022
Gross amounts of the associates:												
Current assets	N/A	1,100,688	34,722,450	31,058,240	28,171,167	38,444,363	1,339,929	1,008,534	9,976,253	10,073,828	2,204,762	2,159,709
Non-current assets	N/A	17,371,782	118,994,830	111,192,570	31,425,785	18,015,029	1,372,213	1,362,576	3,118,367	980,822	17,159,329	17,971,114
Current liabilities	N/A	(2,639,797)	(33,457,630)	(31,039,120)	(50,210,748)	(49,029,551)	(538,413)	(371,539)	(8,397,360)	(6,571,152)	(4,602,365)	(5,049,211)
Non-current liabilities	N/A	(10,825,208)	(64,718,920)	(55,924,080)	(39,457)	(48,213)	(85,162)	(115,648)	(812,199)	(1,012,966)	(9,786,755)	(10,251,039)
Equity	N/A	5,007,465	55,540,730	55,287,610	9,346,747	7,381,628	2,088,567	1,883,923	3,885,061	3,470,532	4,974,971	4,830,573
– Equity attributable to shareholders	N/A	3,755,599	28,885,969	28,575,742	9,346,747	7,381,628	2,088,567	1,883,923	3,481,786	3,587,178	4,974,971	4,830,573
– Non-controlling interests	N/A	1,251,866	26,654,761	26,711,868	–	–	–	–	403,275	(116,646)	–	–
Revenue	1,785,943	2,439,280	40,581,740	37,452,650	1,575,390	1,734,020	2,373,016	2,396,883	69,912,647	48,584,073	3,821,747	3,728,229
Gross profit/(loss)	922,048	1,207,814	9,076,170	6,508,080	888,153	993,187	253,212	422,447	281,016	222,107	852,694	871,212
Net profit/(loss)	580,489	651,064	2,545,415	2,434,670	465,119	626,699	204,644	279,830	(100,162)	4,323	147,897	143,002
Profit/(loss) attributable to shareholders	393,793	397,787	1,123,155	2,178,560	465,119	658,708	204,644	234,609	(118,452)	16,009	147,897	143,002
Other comprehensive income/(loss) attributable to shareholders	(7,985)	–	(102,390)	(159,960)	–	–	–	–	13,060	11,456	–	–

(Amounts expressed in thousands of RMB unless otherwise stated)

8 INVESTMENTS IN ASSOCIATES AND JOINT VENTURES *(Cont'd)*

Summarised financial information of the material associates, adjusted for any differences in accounting policies and acquisition adjustments, and reconciliation to the carrying amounts in the consolidated financial statements, are disclosed below: *(Cont'd)*

	Sichuan Energy Development		SECL		Huaneng Finance		Hanfeng Power		Huaneng Group Fuel Company		Hainan Nuclear	
	2023	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023	2022
Total comprehensive income/(loss) attributable to shareholders	385,808	397,787	1,020,765	2,018,600	465,119	658,708	204,644	234,609	(105,392)	27,465	147,897	143,002
Dividend received from the associates	168,922	173,901	166,613	208,266	100,000	76,000	–	–	–	–	–	–
Reconciled to the interests in the associates:												
Gross amounts of net assets attributable to shareholders of the associates	N/A	3,755,599	28,885,969	28,575,742	9,346,747	7,381,628	2,088,567	1,883,923	3,481,786	3,587,178	4,974,971	4,830,573
The Group's effective interest	N/A	49%	25.02%	25.02%	20%	20%	40%	40%	50%	50%	30%	30%
The Group's share of net assets attributable to shareholders of the associates	N/A	1,840,243	7,225,825	7,149,651	1,869,349	1,476,326	835,427	753,570	1,740,893	1,793,589	1,492,491	1,449,172
Impact of adjustments	N/A	207,586	1,161,810	1,161,810	–	–	293,082	293,082	16,521	16,521	14,076	14,076
Carrying amount in the consolidated financial statements	N/A	2,047,829	8,387,635	8,311,461	1,869,349	1,476,326	1,128,509	1,046,652	1,757,414	1,810,110	1,506,567	1,463,248

(Amounts expressed in thousands of RMB unless otherwise stated)

8 INVESTMENTS IN ASSOCIATES AND JOINT VENTURES *(Cont'd)*

Summarised financial information of the material associates, adjusted for any differences in accounting policies and acquisition adjustments, and reconciliation to the carrying amounts in the consolidated financial statements, are disclosed below: *(Cont'd)*

	Shidaowan Nuclear Power		Tiancheng Financial Leasing	
	2023	2022	2023	2022
Gross amounts of the associates:				
Current assets	17,459	27,627	13,615,397	16,472,465
Non-current assets	15,521,364	12,753,701	47,276,930	35,984,429
Current liabilities	(6,952,332)	(1,174,448)	(23,947,514)	(20,717,916)
Non-current liabilities	(3,241,000)	(6,856,880)	(28,068,686)	(23,446,342)
Equity	5,345,491	4,750,000	8,876,127	8,292,636
– Equity attributable to shareholders	5,345,491	4,750,000	7,215,379	6,553,352
– Non-controlling interests	–	–	1,660,748	1,739,284
Revenue	–	–	2,838,724	2,642,530
Gross profit/(loss)	–	–	1,325,403	1,202,587
Net profit/(loss)	35,491	–	1,116,683	1,000,809
Profit/(loss) attributable to shareholders	35,491	–	1,116,683	1,000,809
Other comprehensive income/(loss) attributable to shareholders	–	–	–	–
Total comprehensive income/(loss) attributable to shareholders	35,491	–	1,116,683	1,000,809
Dividend received from the associates	–	–	90,073	71,851
Reconciled to the interests in the associates:				
Gross amounts of net assets attributable to shareholders of the associates	5,345,491	4,750,000	7,215,379	6,553,352
The Group's effective interest	22.5%	22.5%	20%	20%
The Group's share of net assets attributable to shareholders of the associates	1,202,735	1,068,750	1,443,076	1,310,670
Impact of adjustments	–	–	–	–
Carrying amount in the consolidated financial statements	1,202,735	1,068,750	1,443,076	1,310,670

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

8 INVESTMENTS IN ASSOCIATES AND JOINT VENTURES *(Cont'd)*

Aggregate information of associates and joint ventures that are not individually material:

	2023	2022
Aggregate carrying amount of individually immaterial associates and joint ventures in the consolidated financial statements	**5,417,182**	5,480,584
Aggregate amounts of the Company and its subsidiaries' share of those associates and joint ventures		
(Loss)/profit	**(11,107)**	54,645
Total comprehensive (loss)/income	**(5,490)**	80,093

As at 31 December 2023, the Group's share of losses of associates exceeded its interests in the associates and the unrecognised further losses amounted to RMB644 million (31 December 2022: RMB643 million).

As at 31 December 2023, there were no proportionate interests in the associates' and joint ventures' capital commitments (31 December 2022: Nil). There were no material contingent liabilities relating to the Group's interests in the associates and joint ventures, and the associates and joint ventures themselves.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES

As at 31 December 2023, the investments in subsidiaries of the Group, all of which are unlisted, are as follows:

(i) Subsidiaries acquired through establishment or investment

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng International Power Fuel Limited Liability Company	PRC	Held directly	RMB200,000,000	Wholesale of coal	100%	100%
Huaneng Nantong Power Generation Limited Liability Company	PRC	Held indirectly	RMB798,000,000	Power generation	70%	70%
Huaneng Yingkou Co-generation Limited Liability Company	PRC	Held directly	RMB1,182,965,300	Production and sale of electricity and heat, and sale of coal ash and lime	100%	100%
Huaneng Hunan Xiangqi Hydropower Co., Ltd.	PRC	Held directly	RMB328,000,000	Construction, operation and management of hydropower plants and related projects	100%	100%
Huaneng Zuoquan Coal-fired Power Generation Limited Liability Company	PRC	Held directly	RMB960,996,200	Construction, operation and management of electricity projects; development and utilisation of clean energy resources	80%	80%
Huaneng Kangbao Wind Power Utilisation Limited Liability Company	PRC	Held directly	RMB543,200,000	Construction, operation and management of wind power plants and related projects; solar power generation	100%	100%
Huaneng Jiuquan Wind Power Generation Co., Ltd.	PRC	Held directly	RMB2,761,480,000	Construction, operation and management of wind power generation and related projects	100%	100%
Huaneng Rudong Wind Power Generation Co., Ltd.	PRC	Held indirectly	RMB90,380,000	Operation and management of wind power generation projects	90%	90%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Guangdong Haimen Port Limited Liability Company	PRC	Held indirectly	RMB331,400,000	Loading, warehousing and conveying services, providing facility services and water transportation services	100%	100%
Huaneng Taicang Port Limited Liability Company	PRC	Held indirectly	RMB600,000,000	Port provision, cargo loading and storage	85%	85%
Huaneng Taicang Power Generation Co., Ltd.	PRC	Held indirectly	RMB883,899,310	Power generation	75%	75%
Huaneng Huaiyin II Power Generation Limited Company	PRC	Held indirectly	RMB930,870,000	Power generation	63.64%	63.64%
Huaneng Xindian Power Generation Co., Ltd.	PRC	Held directly	RMB991,915,789	Power generation	95%	95%
Huaneng Shanghai Combined Cycle Power Limited Liability Company	PRC	Held directly	RMB699,700,000	Power generation	70%	70%
Huaneng Yumen Wind Power Generation Co., Ltd.	PRC	Held directly	RMB785,960,000	Construction, operation and management of wind power generation and related projects	100%	100%
Huaneng Qingdao Co-generation Limited Company	PRC	Held directly	RMB1,206,851,045	Sale of electricity, heat and steam; construction and operation of related facilities	100%	100%
Huaneng Tongxiang Combined Cycle Co-generation Co., Ltd.	PRC	Held indirectly	RMB300,000,000	Production and sale of electricity and heat; investment in combined cycle co-generation industries	95%	95%
Huaneng Shantou Haimen Power Generation Limited Liability Company	PRC	Held indirectly	RMB1,508,000,000	Construction, operation and management of power plants and related projects	80%	80%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Chongqing Liangjiang Power Generation Limited Liability Company	PRC	Held directly	RMB871,920,000	Construction, operation and management of natural gas power plants and related projects	75%	75%
Huaneng Yunnan Fuyuan Wind Power Generation Co., Ltd.	PRC	Held indirectly	RMB326,290,000	Wind power project investment, management and sales	100%	100%
Huaneng Guizhou Panzhou State City Wind Power Co., Ltd.	PRC	Held directly	RMB188,180,000	Construction and management of wind power plants and related projects	100%	100%
Huaneng Jiangxi Clean Energy Limited Liability Company	PRC	Held directly	RMB1,863,632,800	Power generation and supply development, management	100%	100%
Huaneng Hunan Subaoding Wind Power Generation Co., Ltd.	PRC	Held directly	RMB266,000,000	Construction, operation and management of wind power plants and related projects	100%	100%
Huaneng Suixian Jieshan Wind Power Generation Co., Ltd.	PRC	Held directly	RMB183,500,000	Construction, operation and management of wind power plants and related projects	100%	100%
Huaneng Taiyuan Dongshan Combined Cycle Co-generation Co., Ltd.	PRC	Held directly	RMB731,710,000	Construction and operation of thermal heating networks, development and utilisation of clean energy resources	82%	82%
Huaneng Xuzhou Tongshan Wind Power Generation Co., Ltd.	PRC	Held indirectly	RMB287,951,400	Wind power generation, electricity engineering design services, maintenance of power supply and control facilities, solar energy power generation	70%	70%
Huaneng Nanjing Co-generation Co., Ltd.	PRC	Held indirectly	RMB320,400,000	Construction and operation of power plants, and thermal heating services	70%	70%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Hunan Guidong Wind Power Generation Co., Ltd.	PRC	Held directly	RMB140,000,000	Investment, construction, operation and management of electricity projects; development and utilisation of clean energy resources	100%	100%
Huaneng Nanjing Luhe Wind Power Generation Co., Ltd.	PRC	Held indirectly	RMB84,800,000	Investment, construction, operation, management of electricity projects; development and utilisation of clean energy resources	100%	100%
Huaneng Luoyuan Power Generation Co., Ltd.	PRC	Held indirectly	RMB1,163,100,000	Construction, operation and management of power plants and related projects	100%	100%
Huaneng Lingang (Tianjin) Gas Co-generation Co., Ltd.	PRC	Held directly	RMB332,000,000	Power generation and supply	100%	100%
Huaneng Lingang (Tianjin) Heat Co-generation Co., Ltd.	PRC	Held indirectly	RMB5,000,000	Providing thermal energy and cold energy services, supplying steam and hot water (except portable water), plumbing pipe installation and repair, energy engineering construction	66%	66%
Huaneng Anhui Huaining Wind Power Generation Co., Ltd.	PRC	Held directly	RMB301,500,000	Investment, construction and operation of electricity projects development and utilisation of clean energy resources	100%	100%
Huaneng Mianchi Co-generation Limited Liability Company	PRC	Held directly	RMB570,000,000	Construction, operation and management of coal-fired plants and related projects	60%	60%
Huaneng Yingkou Xianrendao Co-generation Co., Ltd.	PRC	Held directly	RMB352,020,000	Power generation and supply development and utilisation of clean energy resources	100%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Nanjing Xingang Comprehensive Energy Co., Ltd.	PRC	Held indirectly	RMB198,664,300	Thermal generation and supply, power distribution and sale	65%	65%
Huaneng Changxing Photovoltaic Power Generation Limited Liability Company	PRC	Held indirectly	RMB26,000,000	Construction and operation of distributed photovoltaic power generation plants and related projects	100%	100%
Huaneng Rudong Baxianjiao Offshore Wind Power Generation Co., Ltd.	PRC	Held indirectly	RMB1,629,338,700	Infrastructure construction of wind power plants	70%	70%
Huaneng Guilin Gas Distributed Energy Co., Ltd.	PRC	Held directly	RMB267,450,000	Construction, operation and management of power plants and thermal energy	80%	80%
Huaneng (Dalian) Co-generation Co., Ltd.	PRC	Held directly	RMB1,041,271,769	Construction, operation and management of co-generation power plants and related projects	100%	100%
Huaneng Zhongxiang Wind Power Generation Co., Ltd.	PRC	Held directly	RMB240,000,000	Construction, operation and management of wind power plants and related projects	100%	100%
Tuas Power Generation Pte. Ltd. ("TPG")	Singapore	Held indirectly	S$1,183,000,001	Power generation and related by-products, derivatives, developing power supply resources operating electricity and power sales	100%	100%
TP Utilities Pte. Ltd.	Singapore	Held indirectly	S$ 255,500,001	Provision of energy,, power supply, thermal supply, management of industrial water and waste	100%	100%
TPSTMWR	Singapore	Held indirectly	S$4,500,000	Providing desalinated water	60%	60%
TP-STM Water Services Pte. Ltd.	Singapore	Held indirectly	S$21,000	Providing desalinated water	60%	60%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Mianchi Clean Energy Limited Liability Company	PRC	Held directly	RMB291,800,000	Wind power generation, new energy development and utilisation	100%	100%
Huaneng Zhuolu Clean Energy Limited Liability Company	PRC	Held directly	RMB159,178,100	Construction, operation and management of power plants and related projects	100%	100%
Huaneng Tongwei Wind Power Generation Limited Liability Company	PRC	Held directly	RMB264,640,000	Construction, operation and management of wind power plants and related projects	100%	100%
Huaneng Yizheng Wind Power Generation Limited Liability Company	PRC	Held indirectly	RMB200,000,000	Wind power plants design, construction, management and maintenance	100%	100%
Huaneng Yancheng Dafeng New Energy Power Generation Limited Liability Company	PRC	Held indirectly	RMB1,000,000,000	Construction, operation and management of wind power photovoltaic power plant	100%	100%
Huaneng Shanyin Power Generation Limited Liability Company	PRC	Held directly	RMB1,573,000,000	Construction, operation and management of power plants and related projects	51%	51%
Huaneng Jiangsu Comprehensive Energy Service Co., Ltd.	PRC	Held indirectly	RMB201,000,000	Purchase and sale of electricity and thermal energy, water supply services, construction and operation of electricity distribution networks and heating pipe networks	100%	100%
Huaneng Liaoning Energy Sales Limited Liability Company	PRC	Held directly	RMB200,000,000	Sale of electricity, thermal energy and hot water circulation	100%	100%

(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Guangdong Energy Sales Limited Liability Company	PRC	Held indirectly	RMB200,000,000	Power and thermal energy supply, energy conservation technology service, transmission and substation projects contracting	100%	100%
Huaneng Suizhou Power Generation Limited Liability Company	PRC	Held directly	RMB96,020,000	Construction, operation and management of power plants, production and sale of electricity and heat	100%	100%
Huaneng Fuzhou Changle Photovoltaic Power Generation Limited Liability Company	PRC	Held indirectly	RMB15,570,000	Construction, operation and management of photovoltaic power plants and related projects	100%	100%
Huaneng Dandong Comprehensive Energy Service Co., Ltd.	PRC	Held directly	RMB17,720,000	Investment, construction operation and management of electricity projects, development and utilisation of clean energy resources	100%	100%
Huaneng Dongguan Combined Cycle Co-generation Limited Liability Company	PRC	Held indirectly	RMB704,490,000	Investment of electricity projects, thermal power generation and supply, investment in heating pipe networks, development and utilisation of clean energy resources	80%	80%
Huaneng Chongqing Fengjie Wind Power Generation Limited Liability Company	PRC	Held directly	RMB183,900,000	Electricity production and supply; development and utilisation of clean energy resources	100%	100%
Huaneng Jingxing Photovoltaic Power Generation Limited Liability Company	PRC	Held directly	RMB23,500,000	Investment, construction and management of photovoltaic power plants	100%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Shanxi Energy Sales Limited Liability Company	PRC	Held directly	RMB210,000,000	Electricity supply and sales investment, construction, operation and repair of regional transmission and distribution networks	100%	100%
Huaneng Chongqing Energy Sales Limited Liability Company	PRC	Held directly	RMB210,000,000	Operation of natural gas, electric energy and thermal energy product sale	100%	100%
Huaneng Chongqing Luohuang Energy Sales Limited Liability Company	PRC	Held indirectly	RMB210,000,000	Sale and supply of electricity, sale of thermal products	90%	90%
Huaneng Hunan Energy Sales Limited Liability Company	PRC	Held directly	RMB210,000,000	Electricity and thermal energy product sale	100%	100%
Huaneng Jiangxi Energy Sales Limited Liability Company(Jiangxi Energy Sales)	PRC	Held directly	RMB210,000,000	Construction, operation and management of heat and power supply facilities	100%	100%
Huaneng Hebei Energy Sales Limited Liability Company	PRC	Held directly	RMB210,000,000	Construction, installation, maintenance and repair of heat and power supply facilities	100%	100%
Huaneng Henan Energy Sales Limited Liability Company	PRC	Held directly	RMB210,000,000	Sale of electricity, heat, gas and other energy products	100%	100%
Huaneng Handan Heating Limited Liability Company	PRC	Held directly	RMB100,000,000	Construction, operation and maintenance of heating sources and pipe networks	100%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng (Huzhou Development Zone) Photovoltaic Power Generation Limited Liability Company	PRC	Held indirectly	RMB10,000,000	Photovoltaic power generation; power supply, purchase and sale	100%	100%
Huaneng Fujian Energy Sales Limited Liability Company(Fujian Energy Sales)	PRC	Held indirectly	RMB210,000,000	Sale of electricity, heat, gas and other energy products	100%	100%
Huaneng Hubei Energy Sales Limited Liability Company	PRC	Held directly	RMB210,000,000	Sale of electricity, heat, gas and other energy products	100%	100%
Huaneng Shanghai Energy Sales Limited Liability Company	PRC	Held directly	RMB210,000,000	Power supply (except construction and operation of electricity networks), technology services in energy conservation and environmental protection	100%	100%
Huaneng Anhui Energy Sales Limited Liability Company	PRC	Held directly	RMB210,000,000	Sale of electricity, heat, gas and other energy products	100%	100%
Huaneng (Shanghai) Power Maintenance Limited Liability Company	PRC	Held directly	RMB200,000,000	Contracting installation and repair of electricity facilities	100%	100%
Huaneng Guanyun Clean Energy Power Limited Liability Company	PRC	Held indirectly	RMB1,446,020,000	Sale of electricity, construction, operation and management of co-generation power plants, heating network and expansion engineering	100%	100%
Huaneng Jianchang Photovoltaic Power Generation Limited Liability Company	PRC	Held directly	RMB10,000,000	Production and supply of electricity, and development and utilisation of clean energy resources	100%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Chaoyang Photovoltaic Power Generation Limited Liability Company	PRC	Held directly	RMB10,000,000	Production and supply of electricity, and development and utilisation of clean energy resources	100%	100%
Huaneng (Fujian) Port Limited Company	PRC	Held indirectly	RMB619,710,000	Port management, investment and development	100%	100%
Huaneng Shijiazhuang Energy Limited Liability Company	PRC	Held directly	RMB60,000,000	Production and supply of heat and purchase and sale of electricity	100%	100%
Huaneng Jiangyin Combined Cycle Co-generation Limited Liability Company	PRC	Held indirectly	RMB600,000,000	Production and supply of electricity, and production and supply of heat	51%	51%
Huaneng Anyang Energy Limited Liability Company	PRC	Held directly	RMB619,600,000	Production and supply of electricity, and production and supply of heat	100%	100%
Huaneng Shanxi Comprehensive Energy Limited Liability Company	PRC	Held directly	RMB2,086,698,606	Production and supply of electricity, and production and supply of heat	100%	100%
Zhaodong Huaneng Dechang Solar Power Generation Limited Company	PRC	Held indirectly	RMB30,810,000	Solar energy generation and technology promotion, and repair electricity facilities	100%	100%
Huaneng Mingguang Wind Power Generation Limited Liability Company	PRC	Held directly	RMB13,000,000	Production and supply of electricity; investment, construction, operation and management of electricity projects	100%	100%
Huaneng Guangxi Energy Sales Limited Liability Company	PRC	Held directly	RMB210,000,000	Power supply, contracting installation and repair of electricity facilities	100%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Hunan Lianping Wind Power Generation Limited Liability Company	PRC	Held directly	RMB173,920,000	Production and supply of electricity	80%	80%
Huaneng Abagaqi Clean Energy Limited Liability Company	PRC	Held directly	RMB316,180,760	Production, supply and sale of electricity and thermal energy	100%	100%
Huaneng Zhejiang Energy Sales Limited Liability Company	PRC	Held indirectly	RMB210,000,000	New energy technology development and technology consulting	100%	100%
Huaneng Guangdong Shantou Power Generation Limited Liability Company	PRC	Held indirectly	RMB10,000,000	Production and supply of electricity and thermal energy	100%	100%
Huaneng Zhejiang Pinghu Offshore Wind Power Generation Co., Ltd.	PRC	Held indirectly	RMB2,200,000,000	Production and supply of electricity, and investment, construction and operation of electricity projects	100%	100%
Huaneng Liaoning Clean Energy Limited Liability Company	PRC	Held directly	RMB5,481,424,614	Technology development technical advice services for clean energy	77.56%	77.56%
Huaneng Henan Puyang Clean Energy Limited Liability Company	PRC	Held directly	RMB1,491,567,000	Production and supply of electricity, and investment, construction and operation of electricity projects	100%	100%
Huaneng Guizhou Energy Sales Co., Ltd.	PRC	Held directly	RMB210,000,000	Sale of electricity, heat and gas	100%	100%
Huaneng Guangdong Shantou Offshore Wind Power Generation Co., Ltd.	PRC	Held indirectly	RMB62,950,000	Investment and development of wind energy and new energy	100%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Yushe Poverty Relief Energy Co., Ltd.	PRC	Held indirectly	RMB14,760,000	Construction, operation and management of photovoltaic power generation and new energy projects	90%	90%
Huaneng Anhui Mengcheng Wind Power Co., Ltd.	PRC	Held directly	RMB409,070,000	Production and supply of electricity, and investment, construction and operation of electricity projects	100%	100%
Huaneng Anshun Comprehensive Energy Co., Ltd.	PRC	Held directly	RMB10,530,000	Production and supply of electricity, and investment, construction and operation of electricity projects	100%	100%
Huaneng Shengdong Rudong Offshore Wind Power Co., Ltd.	PRC	Held indirectly	RMB2,000,000,000	Production and sale of electric power; investment in wind power generation	79%	79%
Huaneng Zhejiang Cangnan Offshore Wind Power Co., Ltd.	PRC	Held indirectly	RMB10,000,000	Production and sale of electric power; and investment in wind power generation	100%	100%
Huaneng Zhejiang Ruian Offshore Wind Power Co., Ltd.	PRC	Held indirectly	RMB10,000,000	Production and sale of electric power, and investment in wind power generation	100%	100%
Huaneng (Shanghai) Photovoltaic Power Co., Ltd.	PRC	Held directly	RMB35,496,600	Technical service of wind power generation	100%	100%
Sinosing Services PTE. Ltd.	Singapore	Held indirectly	USD1	Bond issuance service	100%	100%
Huaneng Yangqu Wind Power Co., Ltd.	PRC	Held indirectly	RMB47,000,000	Construction, operation and management of wind power projects	100%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Ruicheng Comprehensive Energy Co., Ltd.	PRC	Held indirectly	RMB216,300,000	Construction, operation and management of new energy power projects, and power generation	100%	100%
Huaneng Xiayi Wind Power Co., Ltd.	PRC	Held directly	RMB117,720,000	Production and sale of electric power, clean energy development and utilisation and investment in electricity projects	100%	100%
Huaneng (Anhui Shitai) Wind Power Co., Ltd.	PRC	Held directly	RMB63,600,000	Production and sale of electric power, clean energy development and utilisation and investment in electricity projects	100%	100%
Huaneng (Tianjin) Energy Sales Co., Ltd.	PRC	Held directly	RMB200,000,000	Power and thermal energy supply, energy conservation technology service, transmission and substation projects contracting	100%	100%
Huaneng Qingneng Tongyu Power Co., Ltd.	PRC	Held indirectly	RMB180,000,000	Development and operation of new energy power projects	100%	100%
Huaneng Guanling New Energy Power Generation Co., Ltd.	PRC	Held directly	RMB100,000,000	Production and sale of electricity and heat	100%	100%
Huaneng Luobei Wind Power Co., Ltd.	PRC	Held indirectly	RMB467,148,000	Development and management of new energy technology, operation and management of wind power, and maintenance of wind power equipment	100%	100%
Huaneng Sihong New Energy Co., Ltd.	PRC	Held indirectly	RMB150,000,000	Development and management of new energy technology	100%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Taiqian Wind Power Co., Ltd.	PRC	Held directly	RMB101,136,800	Production and sale of electricity and heat, development, investment and management of new energy technology, and development and utilisation of clean energy	51%	51%
Huaneng Zhenping Clean Energy Co., Ltd.	PRC	Held directly	RMB80,000,000	Production and sale of electricity, and development and utilisation of clean energy	100%	100%
Huaneng (Heze Dongming) New Energy Co., Ltd.	PRC	Held directly	RMB208,726,700	Photovoltaic power generation, wind power generation and biomass power generation	100%	100%
Huaneng Hunan Jiangkou Wind Power Co., Ltd.	PRC	Held directly	RMB20,000,000	Production and sale of wind power, and development and utilisation of clean energy	100%	100%
Huaneng Ruzhou Clean Energy Limited Liability Company	PRC	Held directly	RMB217,010,000	Production and supply of electricity projects, investment, construction and operation of electricity projects	100%	100%
Huaneng Zuoquan Yangjiao Wind Power Co., Ltd.	PRC	Held indirectly	RMB500,000	Production and sale of electricity	100%	100%
Huaneng (Zhuanghe) Wind Power Co., Ltd.	PRC	Held indirectly	RMB2,700,000,000	Production and sale of electricity and heat	94.07%	94.07%
Huaneng (Zhuanghe) Clean Energy Co., Ltd.	PRC	Held indirectly	RMB1,500,000,000	Investment, construction and management of wind power projects	97.96%	97.96%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Zaoyang New Energy Co., Ltd.	PRC	Held directly	RMB232,920,000	Production and sale of electricity, and development and utilisation of clean energy	100%	100%
Huaneng Zhenning New Energy Power Generation Co., Ltd.	PRC	Held directly	RMB222,470,000	Technological research and development and management of new energy projects, and sale of electricity	100%	100%
Huaneng Luodian New Energy Power Generation Co., Ltd.	PRC	Held directly	RMB155,190,000	Technological research and development and management of new energy projects, and sale of electricity	100%	100%
Huaneng Wangmo New Energy Power Generation Co., Ltd.	PRC	Held directly	RMB44,000,000	Technological research and development and management of new energy projects, and sale of electricity	100%	100%
Guizhou Huajin Clean Energy Co., Ltd.	PRC	Held indirectly	RMB200,000,000	Production and sale of electricity and heat, construction, operation and management of clean energy projects	51%	51%
Huaneng Daqing Clean Energy Co., Ltd.	PRC	Held indirectly	RMB1,000,000,000	Wind power generation, solar power generation, biomass power generation, electricity supply, geothermal power generation, wind-solar complementary power supply system services	100%	100%
Huaneng Zhaodong Biomass Power Generation Co., Ltd.	PRC	Held indirectly	RMB120,000,000	Biomass power generation, sale of electricity and heat, and energy-saving technology promotion	60%	60%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Siping Wind Power Co., Ltd.	PRC	Held indirectly	RMB407,810,000	Development and operation of new energy power projects	100%	100%
Huaneng Henan Clean Energy Co., Ltd.	PRC	Held directly	RMB200,000,000	Production and sale of electricity, and construction, operation and management of clean energy projects	100%	100%
Huaneng Yingcheng New Energy Co., Ltd.	PRC	Held directly	RMB95,418,000	Production and sale of electricity, and construction, operation and management of clean energy projects	100%	100%
Huaneng (Fujian) Energy Development Co., Ltd. (Fujian Energy Development)	PRC	Held directly	RMB4,214,710,512	Production and sale of electricity, and prevention of water pollution	100%	100%
Huaneng Power International Jiangsu Energy Development Co., Ltd. ("Jiangsu Energy Development")	PRC	Held directly	RMB15,089,400,000	Electricity, heat, and new energy development	100%	100%
Huaneng (Guangdong) Energy Development Co., Ltd.	PRC	Held directly	RMB6,536,297,868	Production and sale of heat, sewage treatment and recycling, and new energy technology development	100%	100%
Huaneng (Zhejiang) Energy Development Co., Ltd.	PRC	Held directly	RMB100,000,000	Production and sale of electricity and heat, sale of coal, lime, gypsum and related products, and research and development of energy-efficient technologies	100%	100%

(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Nantong Combined Cycle Power Limited Company	PRC	Held indirectly	RMB960,000,000	Production and sale of electricity and heat; and investment in combined cycle co-generation industries	100%	100%
Huaneng (Dashiqiao) Power New Energy Co., Ltd.	PRC	Held indirectly	RMB500,000	Development and operation of new energy power projects	100%	100%
Huaneng (Shantou Jinping) New Energy Co., Ltd.	PRC	Held indirectly	RMB500,000	Production and sale of electricity, and development and utilisation of clean energy	100%	100%
Huaneng (Yingkou) Electric Power New Energy Development Co., Ltd.	PRC	Held indirectly	RMB500,000	Production and sale of new energy power	100%	100%
Huaneng Beibu Gulf (Guangxi) New Energy Development Co., Ltd.	PRC	Held directly	RMB100,000,000	Production and sale of new energy power	100%	100%
Huaneng Cixian Comprehensive Energy Co., Ltd.	PRC	Held indirectly	RMB158,776,300	Production and sale of new energy power	100%	100%
Huaneng Daqing Ranghulu District Clean Energy Co., Ltd.	PRC	Held indirectly	RMB300,000,000	Production and sale of electricity, construction, operation and management of clean energy projects	100%	100%
Huaneng Guangxi Clean Energy Co., Ltd.	PRC	Held directly	RMB30,000,000	Production and sale of electricity	100%	100%
Huaneng Hebei Clean Energy Co., Ltd.	PRC	Held directly	RMB3,000,000	Production and sale of electricity, construction, operation and management of clean energy projects	100%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Hubei New Energy Co., Ltd.	PRC	Held directly	RMB164,920,000	Development and operation of new energy power projects	100%	100%
Huaneng Hualiangting (Tongling) Clean Energy Co., Ltd.	PRC	Held indirectly	RMB72,000,000	Production and sale of electricity, construction, operation and management of clean energy projects	100%	100%
Huaneng Lindian Clean Energy Co., Ltd.	PRC	Held indirectly	RMB100,000,000	Production and sale of electricity, construction, operation and management of clean energy projects	100%	100%
Huaneng Linxiang New Energy Co., Ltd.	PRC	Held directly	RMB100,000	Development and operation of new energy power projects	100%	100%
Huaneng Pingshan Clean Energy Co., Ltd.	PRC	Held indirectly	RMB500,000	Production and sale of electricity, construction, operation and management of clean energy projects	100%	100%
Huaneng Puyang Longyuan Clean Energy Co., Ltd.	PRC	Held indirectly	RMB59,715,000	Development and operation of new energy power projects	51%	51%
Huaneng Clean Energy (Qujing Fuyuan) Co., Ltd.	PRC	Held indirectly	RMB240,000,000	Production and sale of electricity, construction, operation and management of clean energy projects	75%	75%
Huaneng Clean Energy (Qujing Zhanyi) Co., Ltd.	PRC	Held indirectly	RMB156,000,000	Production and sale of electricity, construction, operation and management of clean energy projects	75%	75%
Huaneng Tangshan Caofeidian District Clean Energy Co., Ltd.	PRC	Held indirectly	RMB141,210,000	Production and sale of electricity, construction, operation and management of clean energy projects	70%	70%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Xingtai Comprehensive Energy Co., Ltd.	PRC	Held indirectly	RMB12,177,000	Development and operation of new energy power projects	100%	100%
Huaneng Chongqing Wushan Wind Power Co., Ltd.	PRC	Held directly	RMB108,000,000	Production and sale of wind power, and development and utilisation of clean energy	75%	75%
Shangyi Guolang New Energy Co., Ltd.	PRC	Held indirectly	RMB10,000,000	Production and sale of new energy power	100%	100%
Shijiazhuang Yujun New Energy Technology Co., Ltd. ("Yujun New Energy")	PRC	Held indirectly	RMB500,000	Development and operation of new energy power projects	100%	100%
Xinhe Hanhao New Energy Technology Co., Ltd. ("Hanhao New Energy")	PRC	Held indirectly	RMB100,000	Development and operation of new energy power projects	100%	100%
Huaneng (Chaozhou Chaoan) New Energy Co., Ltd.	PRC	Held indirectly	RMB500,000	Development and operation of new energy power projects	100%	100%
Huaneng (Pucheng) Clean Energy Co., Ltd.	PRC	Held indirectly	RMB5,000,000	Production and sale of wind power, and development and utilisation of clean energy	100%	100%
Huaneng Shanxi Energy Service Co., Ltd.	PRC	Held directly	RMB230,742,300	Production and sale of electricity	100%	100%
Hengshui Huaqing New Energy Technology Co., Ltd. ("Huaqing New Energy")	PRC	Held indirectly	RMB700,000	Development and operation of new energy power projects	95%	95%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Jinhua Nuotan New Energy Development Co., Ltd. ("Nuotan New Energy")	PRC	Held indirectly	RMB500,000	Wind power technical services; Research and development of emerging energy technologies	100%	100%
Huaneng (Macheng) Clean Energy Co., Ltd. ("Macheng Clean Energy")	PRC	Held indirectly	RMB5,000,000	Power generation business, transmission business, power supply business	100%	100%
Huaneng (Shunchang) Clean Energy Co., Ltd. ("Shunchang Clean Energy")	PRC	Held indirectly	RMB5,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng (Zhangzhou) Clean Energy Co., Ltd. ("Zhangzhou Clean Energy")	PRC	Held indirectly	RMB5,000,000	Power generation business, transmission business, power supply business	100%	100%
Fujian Huatai Zhigu Energy Development Co., Ltd. ("Fujian Huatai Zhigu")	PRC	Held indirectly	RMB10,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huarong Wisdom (Shanghai) Energy Technology Co., Ltd. ("Huarong Wisdom Energy")	PRC	Held indirectly	RMB3,000,000	Construction engineering	51%	51%
Huaneng Napo New Energy Co., Ltd. ("Napo New Energy")	PRC	Held indirectly	RMB200,000,000	Power generation, transmission, and power supply business	100%	100%
Huaneng Rongshui New Energy Co., Ltd. ("Rongshui New Energy")	PRC	Held indirectly	RMB100,000	Power generation, transmission, and power supply business	100%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng (Jian) New Energy Limited Liability Company ("Jian New Energy")	PRC	Held directly	RMB4,791,000	Power generation, transmission, and power supply business	100%	100%
Huaneng Yingcheng Energy Developing Co., Ltd.	PRC	Held indirectly	RMB1,224,000,000	Power generation business, transmission business, power supply (distribution) business	85%	85%
Hefei Yangjie New Energy Technology Co., Ltd.	PRC	Held indirectly	RMB1,000,000	Solar power generation technical services	100%	100%
Taixing Huazhijian Integrated Energy Service Co., Ltd.	PRC	Held indirectly	RMB16,950,000	Power generation business, transmission business	100%	100%
Lianyungang Huazhijian New Energy Co., Ltd.	PRC	Held indirectly	RMB15,718,740	Power generation business, transmission business	100%	100%
Huaneng Friendship Clean Energy Co., Ltd.	PRC	Held indirectly	RMB10,000,000	Power generation, transmission, and power supply business	100%	100%
Anhui Nengxin New Energy Co., Ltd.	PRC	Held indirectly	RMB10,000,000	Power generation business, transmission business, power supply (distribution) business	51%	51%
Huaneng (Zhenghe) Clean Energy Co., Ltd.	PRC	Held indirectly	RMB5,000,000	Heat production supply	100%	100%
Huaneng (Qingyuan) Gas Engine Thermopower Co., Ltd.	PRC	Held indirectly	RMB10,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng Miluo Integrated Energy Co., Ltd.	PRC	Held directly	RMB100,000	Wind power	100%	100%
Huaneng (Changsha) New Energy Co., Ltd.	PRC	Held directly	RMB30,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Nanchang Clean Energy Co., Ltd.	PRC	Held indirectly	RMB310,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng Seraf Gaoan New Energy Co., Ltd.	PRC	Held indirectly	RMB200,000,000	Power generation business, transmission business, power supply (distribution) business	99%	99%
Huaneng Diandong Energy (Guizhou) Co., Ltd.	PRC	Held indirectly	RMB10,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng Clean Energy (Qujing Xuanwei) Co., Ltd.	PRC	Held indirectly	RMB1,000,000	Production and supply of electricity	75%	75%
Huaneng Chongyang New Energy Co.,Ltd.	PRC	Held indirectly	RMB900,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Suqian Huajian New Energy Co., Ltd.	PRC	Held indirectly	RMB500,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng Xiyang New Energy Power Generation Co., Ltd.	PRC	Held indirectly	RMB1,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng Anda Clean Energy Co.,Ltd.	PRC	Held indirectly	RMB540,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng Lingqiu Integrated Energy Co., Ltd.	PRC	Held indirectly	RMB500,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng (Dalian) Power New Energy Development Co., Ltd.	PRC	Held indirectly	RMB500,000	Power generation business, transmission business, power supply (distribution) business	100%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng (Dalian) Energy Power Co., Ltd.	PRC	Held indirectly	RMB20,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng Saida (Tianjin) Integrated Energy Service Co., Ltd.	PRC	Held indirectly	RMB70,000,000	Power supply business	51%	51%
Huaneng Ruyang Clean Energy Co., Ltd.	PRC	Held indirectly	RMB10,000,000	All kinds of engineering construction activities	100%	100%
Huaneng (Pinghe) Clean Energy Co., Ltd.	PRC	Held indirectly	RMB5,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng (Minqing) Clean Energy Co., Ltd.	PRC	Held indirectly	RMB5,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng (Yangjiang High Tech Zone) New Energy Co., Ltd.	PRC	Held indirectly	RMB5,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Xianning Tongshan Xiaoyang New Energy Co.,Ltd.	PRC	Held indirectly	RMB373,790,340	Power generation business, transmission business, power supply (distribution) business	100%	100%
Xianning Tongshan Yanghui New Energy Co., Ltd.	PRC	Held indirectly	RMB373,790,340	Power generation business, transmission business, power supply (distribution) business	100%	100%
Wangdu Wangfa New Energy Technology Co., Ltd.	PRC	Held indirectly	RMB5,000,000	New energy technology promotion services	80%	80%
Neiqiu County Handan New Energy Technology Co., Ltd.	PRC	Held indirectly	RMB500,000	Power generation business, transmission business, power supply (distribution) business	90%	90%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Leting Integrated Energy Co., Ltd.	PRC	Held indirectly	RMB500,000	New energy technology promotion services	100%	100%
Huaneng (Yingkou) Green Energy Co., Ltd.	PRC	Held indirectly	RMB500,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng Xilin New Energy Co., Ltd.	PRC	Held indirectly	RMB20,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Nuotan (Shanghai) Clean Energy Development Co., Ltd.	PRC	Held indirectly	RMB500,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng Shanyin Photovoltaic Power Generation Co., Ltd.	PRC	Held directly	RMB500,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng (Fushun) Energy Development Co., Ltd.	PRC	Held indirectly	RMB500,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng (Chaoyang) Energy Development Co., Ltd.	PRC	Held indirectly	RMB500,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng (Shenyang) Energy Development Co., Ltd.	PRC	Held indirectly	RMB500,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng Lingbao Comprehensive Energy Co., Ltd.	PRC	Held directly	RMB120,000,000	Power generation business, transmission business, power supply (distribution) business	70%	70%
Huaneng Yuanling New Energy Co., Ltd.	PRC	Held directly	RMB10,000	Wind power generation; Solar power generation, electricity sales	100%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Qian'an Integrated Energy Co., Ltd.	PRC	Held indirectly	RMB500,000	New energy technology promotion services	100%	100%
Jiangxi Huaneng Changxian New Energy Co., Ltd.	PRC	Held indirectly	RMB720,000,000	Power generation business, transmission business, power supply (distribution) business	70%	70%
Huaneng (Yongxin) New Energy Co., Ltd.	PRC	Held indirectly	RMB660,000,000	Power generation business, transmission business, power supply (distribution) business	70%	70%
Huaneng Hainan Energy Sales Limited Liability Company (i)	PRC	Held indirectly	RMB210,000,000	Construction and operation of heat and power supply facilities, operation of heat resources, heat networks and power supply facilities	91.80%	100%
Huaneng Yangpu Co-generation Limited Company (i)	PRC	Held indirectly	RMB802,222,000	Investment, construction, operation and management of electricity projects and heat pipe networks	82.62%	90%
Chongqing Huaqing Energy Co., Ltd. (i)	PRC	Held indirectly	RMB44,420,000	Providing thermal energy and cold energy services; supplying electricity	45%	60%
Shengdong Rudong Offshore Wind Power Co., Ltd. (i)	PRC	Held indirectly	RMB2,000,000,000	Ancillary projects, construction of wind farm and wind farm maintenance	79%	100%
Huaneng Zhanhua Photovoltaic Power Generation Limited Company (i)	PRC	Held indirectly	RMB145,790,000	Photovoltaic power generation	46.40%	58%
Huaneng Dezhou New Energy Limited Company (i)	PRC	Held indirectly	RMB609,864,000	Photovoltaic power generation, wind power generation, and biomass power generation	80%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Jiyang Biomass Thermal Power Co., Ltd. (i)	PRC	Held indirectly	RMB72,190,000	Production and sale of new energy power	80%	100%
Huaneng (Liaocheng Gaotang) New Energy Co., Ltd. (i)	PRC	Held indirectly	RMB261,670,000	Development and operation of new energy power projects	80%	100%
Huaneng Yantai New Energy Co., Ltd. (i)	PRC	Held indirectly	RMB1,663,602,000	Biomass power generation, sale of electricity and heat, and energy-saving technology promotion	58.18%	72.73%
Huaneng (Jinxiang) New Energy Co., Ltd. (i)	PRC	Held indirectly	RMB80,000,000	Construction, operation and maintenance of new energy generation projects and distribution network projects; and production and sale of electricity	80%	100%
Huaneng Smart Energy (Jiaxiang) Co., Ltd. (i)	PRC	Held indirectly	RMB180,000,000	Production and sale of electricity and heat, production and sale of biomass gas, contract energy management	80%	100%
Huaneng Yantai Bajiao Thermal Power Co., Ltd. (i)	PRC	Held indirectly	RMB1,291,720,000	Production and sale of electricity and heat; and investment in combined cycle co-generation industries	80%	100%
Huaneng (Haiyang) Guangfu New Energy Co., Ltd. (i)	PRC	Held indirectly	RMB744,466,900	Production and sale of electricity, and development and utilisation of clean energy	64%	80%
Huaneng (Laizhou) New Energy Technology Co., Ltd. (i)	PRC	Held indirectly	RMB210,000,000	Production and sale of electricity, and development and utilisation of clean energy	65.14%	81.43%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng (Liaocheng Guanxian) New Energy Development Limited Company (i)	PRC	Held indirectly	RMB1,493,950,000	Production and sale of electricity, and development and utilisation of clean energy	52%	65%
Huaneng (Weifang Binhai District) New Energy Limited Company (i)	PRC	Held indirectly	RMB404,650,000	Production and sale of electricity, and development and utilisation of clean energy	52%	65%
Huaneng Daan Clean Energy Power Co., Ltd. (i)	PRC	Held indirectly	RMB670,670,000	Production and sale of new energy power	80%	100%
Shenzhen Shunyi New Energy Technology Co., Ltd. ("Shunyi New Energy") (i)	PRC	Held indirectly	RMB500,000	Development and operation of new energy power projects	40%	100%
Huaneng (Linshu) New Energy Power Generation Co., Ltd. ("Linshu New Energy") (i)	PRC	Held indirectly	RMB12,862,200	Hydropower; Power generation business, transmission business, power supply (distribution) business	80%	100%
Huaneng (Gaoqing) New Energy Co., Ltd. ("Gaoqing New Energy") (i)	PRC	Held indirectly	RMB15,000,000	Power generation, transmission, and power supply business	80%	100%
Huaneng (Zhaoyuan) New Energy Technology Co., Ltd. ("Zhaoyuan New Energy") (i)	PRC	Held indirectly	RMB38,702,000	Power generation business, transmission business, power supply (distribution) business	64%	80%
Huaneng (Qufu) New Energy Co., Ltd. (i)	PRC	Held indirectly	RMB12,879,000	Cooling services	80%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng (Danzhou) Photovoltaic Power Generation Limited Company (i)	PRC	Held indirectly	RMB138,880,000	Power generation, transmission, and power supply business	66%	72%
Huaneng Mountain Salt (Shouguang) New Energy Co., Ltd. (i)	PRC	Held indirectly	RMB200,000,000	Research and development of emerging energy technologies	53%	66%
Huaneng (Linyi) New Energy Co., Ltd. (i)	PRC	Held indirectly	RMB7,800,000	Power generation business, transmission business, power supply (distribution) business	80%	100%
Huaneng (Yantai Fushan) New Energy Co., Ltd. (i)	PRC	Held indirectly	RMB117,550,000	Power generation business, transmission business, power supply (distribution) business	80%	100%
Huaneng (Longkou) New Energy Technology Development Co., Ltd. (i)	PRC	Held indirectly	RMB1,964,790,200	Research and development of emerging energy technologies	64%	80%
Huaneng (Zibo Linzi) New Energy Co., Ltd. (i)	PRC	Held indirectly	RMB264,00,000	Research and development of emerging energy technologies	80%	100%
Huaneng Telaidian (Shandong) Energy Co., Ltd. (i)	PRC	Held indirectly	RMB3,600,000	EV charging infrastructure operations	56%	70%
Zibo Boshan Jinrong New Energy Technology Co.,Ltd. (i)	PRC	Held indirectly	RMB30,000,000	Research and development of emerging energy technologies	76%	95%
Zibo Boshan District Yirong New Energy Technology Co., Ltd. (i)	PRC	Held indirectly	RMB30,000,000	Solar power generation technical services	76%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng (Dongming) New Energy Technology Development Co., Ltd. (i)	PRC	Held indirectly	RMB300,000,000	Research and development of emerging energy technologies	56%	70%
Huaneng (Heze Dongming) New Energy Development Co., Ltd. (i)	PRC	Held indirectly	RMB145,230,000	Power generation business, transmission business, power supply (distribution) business	80%	100%
Huaneng (Qionghai) photovoltaic power generation Co., Ltd.* (i)	PRC	Held indirectly	RMB204,081,633	Production and sale of electricity, solar power generation	96%	100%
Tongyu Yufeng Xing Village New Energy Co., Ltd.* (i)	PRC	Held indirectly	RMB187,500,000	Power generation business, transmission business, power supply (distribution) business	60%	100%
Huaneng (Wenshang) New Energy Co., Ltd.* (i)	PRC	Held indirectly	RMB500,000	Power generation business, transmission business, power supply (distribution) business	80%	100%
Huaneng Luxi New Energy Co., Ltd.* (i)	PRC	Held indirectly	RMB500,000	Power generation business, transmission business, power supply (distribution) business	70%	100%
Huaneng Xiangdong New Energy Co., Ltd.* (i)	PRC	Held indirectly	RMB500,000	Power generation business, transmission business, power supply (distribution) business	70%	100%
Huaneng Anyuan New Energy Co., Ltd.* (i)	PRC	Held indirectly	RMB500,000	Power generation business, transmission business, power supply (distribution) business	70%	100%
Huaneng Xiaochang Energy Development Co., Ltd.* (i)	PRC	Held indirectly	RMB338,281,050	Power generation business, transmission business, power supply (distribution) business	90%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng (Ju County) New Energy Co., Ltd.* (i)	PRC	Held indirectly	RMB146,000,000	Production and sale of electricity and heat	72%	95%
Huaneng (Rizhao) New Energy Development Co., Ltd.* (i)	PRC	Held indirectly	RMB4,110,000	Power generation business, transmission business, power supply (distribution) business	80%	100%
Huaneng (Lingao) New Energy Co., LTD* (i)	PRC	Held indirectly	RMB500,000	Production and sale of electricity and heat	92%	100%
Ningyang Fengyang New Energy Co., Ltd.* (i)	PRC	Held indirectly	RMB1,000,000	Production and sale of electricity and heat	90%	100%
Huaneng (Huantai) New Energy Co., Ltd.* (i)	PRC	Held indirectly	RMB4,800,000	Production and sale of electricity and heat	80%	100%
Huaneng (Jining Rencheng District) New energy development Co., LTD* (i)	PRC	Held indirectly	RMB500,000	Production and sale of electricity and heat	80%	100%
Huaneng (Linyi Lanshan) New Energy Power Generation Co., Ltd.* (i)	PRC	Held indirectly	RMB10,950,000	Production and sale of electricity and heat	80%	100%
Huasu Energy Development (Shaoguan) Co., Ltd.* (i)	PRC	Held indirectly	RMB36,000,000	Production and sale of electricity and heat	51%	100%
Feicheng Fengyang New Energy Co., Ltd.* (i)	PRC	Held indirectly	RMB1,000,000	Production and sale of electricity and heat	90%	100%
Huaneng Shangli New Energy Co., Ltd.* (i)	PRC	Held indirectly	RMB500,000	Production and sale of electricity and heat	70%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Shanghai Shidongkou Power Generation Limited Liability Company ("Shidongkou Power") (ii)	PRC	Held directly	RMB1,179,000,000	Power generation	50%	100%
Huaneng Nanjing Combined Cycle Co-generation Co., Ltd. ("Nanjing Combined Cycle Co-generation") (iii)	PRC	Held indirectly	RMB938,350,000	Construction, operation and management of power plants and energy projects	57.39%	84.78%
Huaneng Weishan New Energy Limited Company ("Weishan New Energy") (iv)	PRC	Held indirectly	RMB167,000,000	Investment, production and sale of new energy power generation projects	40%	100%
Huaneng Ruyi (Helan) New Energy Limited Company ("Helan New Energy") (iv)	PRC	Held indirectly	RMB19,000,000	Photovoltaic power generation	40%	100%
Huaneng Wulian New Energy Limited Company ("Wulian New Energy") (iv)	PRC	Held indirectly	RMB300,000,000	Photovoltaic power generation, wind power generation, and investment and development of new energy power projects	88.80%	100%
Huaneng Zhenlai Photovoltaic Power Generation Co., Ltd. ("Zhenlai Photovoltaic Power") (v)	PRC	Held indirectly	RMB29,958,660	Investment, construction, production, operation and overhaul of photovoltaic power generation projects	50%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Jiyuan Huaneng Energy Sales Co., Ltd. ("Jiyuan Energy Sales") (xi)	PRC	Held indirectly	RMB20,000,000	Sale of electricity, heat and gas	51%	100%
Huaneng Sheyang New Energy Power Generation Co., Ltd. ("Sheyang New Energy") (xii)	PRC	Held indirectly	RMB1,136,500,000	Production and sale of electricity and heat	70%	70%
Huaneng (Zhejiang Daishan) Offshore Wind Power Co., Ltd. ("Daishan Wind Power") (xiii)	PRC	Held indirectly	RMB1,500,000,000	Production and sale of wind power, and development and utilisation of clean energy	40%	75%
Huaneng (Zhoushan Liuheng) Offshore Wind Power Co., Ltd. ("Liuheng Wind Power") (xv)	PRC	Held indirectly	RMB1,800,000,000	Power generation, transmission, and power supply business	51%	71%
Huagan (Tianjin) Energy Partnership Enterprise (Limited partnership)* ("Huagan (Tianjin) Energy") (xvi)	PRC	Held directly	RMB4,560,000,000	Production and sale of electricity and heat	20%	66.67%
Qingdao Huaying Power Technology Partnership (Limited partnership)* ("Qingdao Huaying Power") (xvi)	PRC	Held indirectly	RMB9,619,000,000	Production and sale of electricity and heat	16%	66.67%
Tianjin Longxing Power Technology Partnership (Limited partnership)* ("Longxing Power Technology") (xvi)	PRC	Held indirectly	RMB2,800,000,000	Production and sale of electricity and heat	20%	66.67%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Tianjin Jingchu Electric Power Technology Partnership (Limited partnership)* ("Tianjin Jingchu Power") (xvi)	PRC	Held directly	RMB2,559,743,642	Production and sale of electricity and heat	29.95%	66.67%
Huamin (Tianjin) Energy Partnership (Limited partnership)* ("Huamin Tianjin Energy") (xvi)	PRC	Held indirectly	RMB4,720,000,000	Production and sale of electricity and heat	20%	66.67%
Hualiangting (Wangjiang) Clean Energy Co., Ltd.*	PRC	Held indirectly	RMB33,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Ma'Anshan Huaxinyuan Photovoltaic Power Generation Co., Ltd.*	PRC	Held indirectly	RMB11,590,000	Production and sale of electricity, solar power generation	100%	100%
Huaneng Photovoltaic Power Generation (Chuzhou) Co., Ltd.*	PRC	Held indirectly	RMB100,000	Production and sale of electricity, solar power generation	100%	100%
Huaneng (Siyang) Clean Energy Co., Ltd*	PRC	Held indirectly	RMB5,000,000	Production and sale of electricity, solar power generation	100%	100%
Huaneng (Luoyuan) Electric Power Technology Co., Ltd*	PRC	Held indirectly	RMB5,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng (Susong) Clean Energy Co., Ltd*	PRC	Held indirectly	RMB5,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng (Quanzhou) Clean Energy Co., Ltd*	PRC	Held indirectly	RMB5,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng (Yongchun) Clean Energy Co., Ltd*	PRC	Held indirectly	RMB5,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng (Pucheng) New Energy Co., Ltd*	PRC	Held indirectly	RMB5,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng (Zhangzhou Longhai) Cleaning Energy Co., Ltd.*	PRC	Held indirectly	RMB5,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huarong Wisdom (Zhuji) Energy Technology Co., Ltd.*	PRC	Held indirectly	RMB10,000,000	Production and sale of electricity, solar power generation	100%	100%
Huaneng (Jiaxing) Energy Development Co., Ltd.*	PRC	Held indirectly	RMB1,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng Mengcun Hui Autonomous County Comprehensive Energy Co., Ltd*	PRC	Held indirectly	RMB500,000	Production and sale of electricity, solar power generation	100%	100%
Haian Huaxin Clean Energy Development Co., Ltd*	PRC	Held indirectly	RMB500,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng (Kazuo) Energy Development Co., Ltd*	PRC	Held indirectly	RMB500,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng Guizhou Cleaning Energy Co., Ltd.*	PRC	Held directly	RMB100,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Xiangyin New Energy Co., Ltd.*	PRC	Held directly	RMB500,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng Jingke (Yuhuan) Wind Force Power Generation Co., Ltd.*	PRC	Held indirectly	RMB10,000,000	Power generation business, transmission business, power supply (distribution) business	95%	95%
Changzhou Huajian Integrated Energy Service Co., Ltd*	PRC	Held indirectly	RMB500,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng Nengke Hefei New Energy Co., Ltd.*	PRC	Held indirectly	RMB1,000,000	Production and sale of electricity, solar power generation	100%	100%
Wuhu Huaneng New Energy Co., Ltd.*	PRC	Held indirectly	RMB100,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Bengbu Huajian New Energy Co., Ltd*	PRC	Held indirectly	RMB500,000	Production and sale of electricity, solar power generation	100%	100%
Huaneng Jilin New Energy Development Co., Ltd.*	PRC	Held indirectly	RMB1,000,000,000	Production and sale of electricity and heat	100%	100%
Huaneng Xingneng Mengcheng Cleaning Energy Co., Ltd.*	PRC	Held indirectly	RMB10,000,000	Power generation business, transmission business, power supply (distribution) business	51%	51%
Huaneng Gu Town Cleaning Energy Co., Ltd.*	PRC	Held indirectly	RMB100,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Henan Shengzhi New Energy Co., Ltd.*	PRC	Held indirectly	RMB1,000,000	Production and sale of electricity and heat	100%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng (Laibin) photovoltaic power generation Co., LTD*	PRC	Held indirectly	RMB5,000,000	Production and sale of electricity and heat	100%	100%
Huaneng (Huian) Cleaning Energy Co., Ltd.*	PRC	Held indirectly	RMB5,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng (Yong'an) Cleaning Energy Co., Ltd.*	PRC	Held indirectly	RMB5,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng (Yuanyang County) Clean Energy Co., LTD*	PRC	Held indirectly	RMB5,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng Lianyungang Energy Development Co., Ltd.*	PRC	Held indirectly	RMB1,500,000,000	Power generation business, transmission business, power supply (distribution) business	56%	56%
Huaneng (Lishui Liandu) photovoltaic power generation Co., LTD*	PRC	Held indirectly	RMB10,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng (Hangzhou Lin'an) New Energy Co., Ltd.*	PRC	Held indirectly	RMB10,000,000	Power generation business, transmission business, power supply (distribution) business	60%	60%
Huaneng (Jiashan) New Energy Development Co., Ltd.*	PRC	Held indirectly	RMB10,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng Yangyuan Cleaning Energy Co., Ltd.*	PRC	Held indirectly	RMB500,000	Production and sale of electricity, solar power generation	100%	100%
Huaneng Baoding Green Energy Co., Ltd.*	PRC	Held indirectly	RMB3,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng (Yongqing) New energy Technology Co., LTD*	PRC	Held indirectly	RMB500,000	Production and sale of electricity and heat	100%	100%
Guangxi Beihai Huaneng Yinji New Energy Co., Ltd.*	PRC	Held indirectly	RMB500,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng Baise New energy Co., LTD*	PRC	Held indirectly	RMB10,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng Beiliu New Energy Co., Ltd.*	PRC	Held indirectly	RMB100,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng Laibin New Energy Co., Ltd.*	PRC	Held indirectly	RMB100,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng Heshan New Energy Co., Ltd.*	PRC	Held indirectly	RMB100,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng Nanning Energy Storage Technology Co., Ltd.*	PRC	Held indirectly	RMB100,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Hepu Huaneng Power Technology Co., Ltd.*	PRC	Held indirectly	RMB100,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Nuotan (Tonglu) New Energy Development Co., Ltd*	PRC	Held indirectly	RMB500,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Shangrao Nuotan New Energy Co., Ltd*	PRC	Held indirectly	RMB500,000	Power generation business, transmission business, power supply (distribution) business	100%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Shanghai Shili New Energy Co., Ltd.*	PRC	Held indirectly	RMB500,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Nenghe (Jingjiang) New Energy Co., Ltd.*	PRC	Held indirectly	RMB500,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng Ganzhou Comprehensive Energy Service Co., Ltd.*	PRC	Held indirectly	RMB29,110,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huaneng Yudu Comprehensive Energy Service Co., Ltd.*	PRC	Held indirectly	RMB500,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Huangshi Huaran New Energy Development Co., Ltd*	PRC	Held indirectly	RMB500,000	Production and sale of electricity and heat	100%	100%
Nuotan (Quzhou) New Energy Co., Ltd.*	PRC	Held indirectly	RMB500,000	Production and sale of electricity and heat	100%	100%
Dingyuan Shiye New Energy Technology Co., Ltd.*	PRC	Held indirectly	RMB500,000	Production and sale of electricity and heat	100%	100%
Chifeng Huaneng New Energy Technology Co., LTD*	PRC	Held indirectly	RMB100,000	Production and sale of electricity and heat	100%	100%
Shenzhou Anchao New Energy Co., Ltd.*	PRC	Held indirectly	RMB1,000,000	Production and sale of electricity and heat	100%	100%
Yanshan Huichao New Energy Co., Ltd.*	PRC	Held indirectly	RMB1,000,000	Production and sale of electricity and heat	100%	100%
Huaneng Fengyang Hefei New Energy Co., Ltd.*	PRC	Held indirectly	RMB10,000,000	Production and sale of electricity and heat	90%	90%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Baoding Cleaning Energy Technology Co., Ltd.*	PRC	Held indirectly	RMB500,000	Production and sale of electricity and heat	100%	100%
Huaneng Ningda (Tianjin) Integrated Energy Services Co., LTD*	PRC	Held indirectly	RMB2,000,000	Production and sale of electricity and heat	100%	100%
Huajian Maritime Wind Power Industrial Park (Yingkou) Co., Ltd.*	PRC	Held indirectly	RMB500,000	Production and sale of electricity and heat	100%	100%
Huasu Energy Development (Zhejiang) Co., LTD*	PRC	Held indirectly	RMB10,000,000	Production and sale of electricity and heat	100%	100%
Huaneng Wanbang Changzhou Technology Co., Ltd.*	PRC	Held indirectly	RMB120,000,000	Production and sale of electricity and heat	100%	100%
Hefei Yangli New Energy Technology Co., Ltd.*	PRC	Held indirectly	RMB1,000,000	Power generation business, power supply business, solar power generation	100%	100%
Huaneng Suixi Wind Force Power Generation Co., Ltd.*	PRC	Held indirectly	RMB10,000,000	Transmission business, power supply business	100%	100%
Huaneng Changzhou Jintan Comprehensive Service Co., Ltd.*	PRC	Held indirectly	RMB50,000,000	Production and sale of electricity and heat	100%	100%
Huasu energy development Taixing Co., Ltd.*	PRC	Held indirectly	RMB20,000,000	Production and sale of electricity and heat	100%	100%
Huaneng (Songxi) Cleaning Energy Co., Ltd.*	PRC	Held indirectly	RMB5,000,000	Production and sale of electricity and heat	100%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(i) Subsidiaries acquired through establishment or investment *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng (Xiangzhou) Clean Energy Co., Ltd.*	PRC	Held indirectly	RMB5,000,000	Production and sale of electricity and heat	100%	100%
Huaneng (Chongqing) New Energy Technology Co., Ltd.*	PRC	Held indirectly	RMB10,000,000	Production and sale of electricity and heat	100%	100%
Shanghai Shengshi Cleaning Energy Development Co., Ltd.*	PRC	Held indirectly	RMB500,000	Production and sale of electricity and heat	100%	100%
Huaneng (Tianchang) Clean Energy Co., Ltd.*	PRC	Held indirectly	RMB1,000,000	Production and sale of electricity and heat	100%	100%
Huaneng Yanshou County Cleaning Energy Technology Co., Ltd.*	PRC	Held indirectly	RMB1,000,000	Production and sale of electricity and heat	100%	100%
Huaneng Nantong Tongzhou Cleaning Energy Development Co., Ltd.*	PRC	Held indirectly	RMB20,000,000	Production and sale of electricity and heat	100%	100%
Huaneng Dongguang County Comprehensive Energy Co., Ltd.*	PRC	Held indirectly	RMB40,414,000	Production and sale of electricity and heat	100%	100%

* These companies were newly established in 2023.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(ii) Subsidiaries acquired from business combinations under common control

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng (Suzhou Industrial Park) Power Generation Co., Ltd.	PRC	Held indirectly	RMB632,840,000	Power generation	75%	75%
Huaneng Qinbei Power Generation Co., Ltd. ("Qinbei Power")	PRC	Held directly	RMB3,139,965,055	Power generation	60%	60%
Huaneng Yushe Power Generation Co., Ltd.	PRC	Held directly	RMB615,760,000	Power generation, power distribution and sale of power	100%	100%
Huaneng Hunan Yueyang Power Generation Limited Liability Company	PRC	Held directly	RMB2,025,934,545	Power generation	55%	55%
Huaneng Chongqing Luohuang Power Generation Limited Liability Company ("Luohuang Power")	PRC	Held directly	RMB1,748,310,000	Power generation, production and sale of heat	60%	60%
Huaneng Pingliang Power Generation Co., Ltd.	PRC	Held directly	RMB924,050,000	Power generation	65%	65%
Huaneng Nanjing Jinling Power Generation Co., Ltd.	PRC	Held indirectly	RMB1,590,220,000	Power generation	60%	60%
Huaneng Qidong Wind Power Generation Co., Ltd.	PRC	Held indirectly	RMB391,738,500	Development of wind power projects, and production and sale of electricity	65%	65%
Yangliuqing Co-generation	PRC	Held directly	RMB1,537,130,909	Power generation, heat supply, facilities installation, maintenance and related services	55%	55%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(ii) Subsidiaries acquired from business combinations under common control *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Wuhan Power Generation Co., Ltd. ("Wuhan Power")	PRC	Held directly	RMB1,478,461,500	Investment, construction, operation and management of electricity projects, and development and utilisation of clean energy resources	75%	75%
Huaneng Anyuan Power Generation Co., Ltd.	PRC	Held directly	RMB1,184,587,300	Construction and Operation of power plants and related construction projects, and production of electricity	100%	100%
Huaneng Hualiangting Hydropower Co., Ltd.	PRC	Held directly	RMB50,000,000	Generation and transfer of power supply, and water supply (irrigation)	100%	100%
Huaneng Jingmen Thermal Power Co., Ltd.	PRC	Held directly	RMB780,000,000	Thermal power, power development and other service	100%	100%
Enshi Qingjiang Dalongtan Hydropower Development Co., Ltd.	PRC	Held directly	RMB177,080,000	Hydropower development, production and management of electric power, and urban water supply	98.01%	98.01%
Huaneng Hainan Power Generation Limited Company	PRC	Held directly	RMB2,652,839,174	Investment, construction, operation of various power plants, and regular energy and new energy development	91.80%	91.80%
Huaneng Yingcheng Thermal Power Co., Ltd.	PRC	Held directly	RMB759,776,000	Construction and operation of power plants and production, sale of power and heat	100%	100%
Huaneng Heilongjiang Power Generation Limited Company ("Heilongjiang Power Generation")	PRC	Held directly	RMB2,404,414,900	Development, investment construction, production and management of power (thermal) projects	100%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(ii) Subsidiaries acquired from business combinations under common control *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Hegang Power Generation Limited Company	PRC	Held indirectly	RMB1,092,550,000	Electricity power construction, energy conservation, development projects, and heat production and supply	64%	64%
Huaneng Xinhua Power Generation Limited Liability Company	PRC	Held indirectly	RMB284,880,000	Power generation, power equipment repair, and coal sale	70%	70%
Huaneng Tongjiang Wind Power Generation Limited Company	PRC	Held indirectly	RMB330,000,000	Wind power generation, wind power plants operation planning and design	82.85%	82.85%
Huaneng Daqing Thermal Power Limited Company	PRC	Held indirectly	RMB630,000,000	Power generation, and thermal production and supply	100%	100%
Daqing Lvyuan Wind Power Generation Limited Company	PRC	Held indirectly	RMB577,796,000	Wind power generation	100%	100%
Huaneng Yichun Thermal Power Limited Company ("Yichun Thermal Power")	PRC	Held indirectly	RMB581,000,000	Power construction, production and sale, and thermal production and sale	100%	100%
Huaneng Heilongjiang Energy Sales Limited Company ("Heilongjiang Energy Sales")	PRC	Held indirectly	RMB210,000,000	Power supply, and the production of heat and hot water	100%	100%
Zhaodong Huaneng Thermal Power Limited Company	PRC	Held indirectly	RMB10,000,000	Heat production and supply	100%	100%
Huaneng Jilin Power Generation Limited Company ("Jilin Power")	PRC	Held directly	RMB6,276,430,300	Power (thermal) projects, development of new energy projects and investment, construction, production, operation and sale	100%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(ii) Subsidiaries acquired from business combinations under common control *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Linjiang Jubao Hydropower Limited Company	PRC	Held indirectly	RMB46,820,000	Hydropower development and operation, and construction and operation of photovoltaic power generation	100%	100%
Huaneng Jilin Energy Sales Limited Company	PRC	Held indirectly	RMB210,000,000	Thermal (cold) production and supply, and power supply	100%	100%
Huaneng Shandong Power Generation Co., Ltd. ("Shandong Power")	PRC	Held directly	RMB4,241,460,000	Power (thermal) project development, investment, construction and management	80%	80%
Huaneng Henan Zhongyuan Gas Power Generation Co., Ltd.	PRC	Held directly	RMB400,000,000	Investment, construction, operation and management of power projects, thermal supply, and development and utilisation of clean energy resources	90%	90%
Huaneng Beijing Co-generation Limited Liability Company ("Beijing Co-generation")	PRC	Held directly	RMB3,702,090,000	Construction and operation of power plants and related construction projects	41%	66%
Tianjin Longye New Energy Co., Ltd.	PRC	Held directly	RMB9,300,000	Design, construction and maintenance of solar power projects, and sale of photovoltaic modules	100%	100%
Huaneng Zhanhua New Energy Limited Company (i)	PRC	Held indirectly	RMB235,298,200	Wind power, photovoltaic power generation	80%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(ii) Subsidiaries acquired from business combinations under common control *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Weihai Port Photovoltaic Power Generation Limited Company (i)	PRC	Held indirectly	RMB32,380,000	Photovoltaic power generation projects development and construction, electricity sales	80%	100%
Huaneng Jinan Huangtai Power Limited Company (i)	PRC	Held indirectly	RMB1,391,878,400	Electricity power production, heat management	72%	90%
Huaneng Dezhou Thermal Power Limited Company (i)	PRC	Held indirectly	RMB40,000,000	Urban heat construction, maintenance and operation, design and construction of heat engineering	68%	85%
Huaneng Dongying New Energy Limited Company (i)	PRC	Held indirectly	RMB92,601,483	Wind power projects development, wind power generation and sales of electricity	56%	70%
Huaneng Shandong (Hong Kong) Investment Limited Company ("Hong Kong Investment") (i)	Hong Kong	Held indirectly	HK$10,000	Investment	80%	100%
Jining Yunhe (i)	PRC	Held indirectly	RMB696,355,300	Electrical (thermal) production and on-grid sale, technology consulting and services	78.68%	98.35%
Shandong Silk Road International Power Limited Company ("Shandong Silk Road") (i)	PRC	Held indirectly	RMB35,000,000	Contracting overseas projects and domestic international bidding projects, and construction and operation of power projects	80%	100%
Linyi Power (i)	PRC	Held indirectly	RMB1,093,313,400	Power generation	60%	75%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(ii) Subsidiaries acquired from business combinations under common control *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Liaocheng Changrun National Electric Heating Limited Company (i)	PRC	Held indirectly	RMB130,000,000	Heat supply	60%	75%
Linyi Lantian Thermal Power Limited Company (i)	PRC	Held indirectly	RMB36,000,000	Heat supply, maintenance of thermal power network, power sale, and installation and maintenance of distribution facilities	54.40%	68%
Yantai 500 Heating Limited Company (i)	PRC	Held indirectly	RMB20,500,000	Central heat services, plumbing and pipe installation services	64%	80%
Huaneng Shandong Taifeng Renewable Energy Co., Ltd. (i)	PRC	Held indirectly	RMB200,000,000	Investment, development, construction and management of photovoltaic power generation projects	65.78%	82.23%
Huaneng Laiwu Power Generation Limited Company (i)	PRC	Held indirectly	RMB2,340,000,000	Power production	74.32%	92.90%
Huaneng Rongcheng New Energy Co., Ltd. (i)	PRC	Held indirectly	RMB36,540,000	Wind power generation	48%	60%
Liaocheng Co-generation (i)	PRC	Held indirectly	RMB1,038,407,950	Power and heat production and sale	60%	75%
Huaneng Zibo Boshan Photovoltaic Power Limited Company (i)	PRC	Held indirectly	RMB22,000,000	Solar power generation, and sale	80%	100%
Huaneng Jining New Energy Limited Company (i)	PRC	Held indirectly	RMB38,000,000	Investment, construction and management of photovoltaic and wind power projects	80%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(ii) Subsidiaries acquired from business combinations under common control *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Rizhao Thermal Power Limited Company (i)	PRC	Held indirectly	RMB52,000,000	Urban heat construction, maintenance and operation, design and construction of heat engineering	80%	100%
Huaneng Laiwu New Energy Limited Company (i)	PRC	Held indirectly	RMB68,000,000	Photovoltaic power and wind power generation	80%	100%
Huaneng Shandong Sishui New Energy Limited Company (i)	PRC	Held indirectly	RMB143,090,000	Solar energy grid connected generation	80%	100%
Huaneng Shandong Electric and Thermal Power Marketing Limited Company (i)	PRC	Held indirectly	RMB200,000,000	Sales and service of power and heating products, investment in power industry	80%	100%
Huaneng Information Technology Limited Company (i)	PRC	Held indirectly	RMB80,000,000	Information technology and management consulting services	80%	100%
Huaneng Shandong Ruyi Coal Power Limited Company ("Ruyi Coal Power") (iv)	PRC	Held indirectly	RMB1,294,680,000	Development, investment, construction, operation and management of electricity power and coal	40%	100%
Huaneng Jiaxiang Power Generation Limited Company ("Jiaxiang Power") (iv)	PRC	Held indirectly	RMB646,680,000	Power generation, electrical equipment maintenance	40%	100%
Huaneng Qufu Co-generation Limited Company ("Qufu Co-generation") (iv)	PRC	Held indirectly	RMB300,932,990	Sale and production of electric power, and thermal power	40%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(ii) Subsidiaries acquired from business combinations under common control *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Shandong Electric Power Fuel Limited Company ("Shandong Fuel Company") (iv)	PRC	Held indirectly	RMB100,000,000	Wholesale operation of coal	76.55%	100%
Huaneng Shandong Energy Engineering Co., Ltd. ("Shandong Energy Engineering") (iv)	PRC	Held indirectly	RMB50,000,000	Power engineering design and construction	76.55%	100%
Shandong Rizhao Power Generation Limited Company ("Rizhao Power") (iv)	PRC	Held indirectly	RMB1,245,587,900	Heat and power business	88.80%	100%
Huaneng Chaohu Power Generation Co., Ltd. ("Chaohu Power Generation") (vii)	PRC	Held directly	RMB840,000,000	Construction, operation, management of electricity projects, and development and utilisation of clean energy resources	60%	70%
Huaneng Suzhou Thermal Power Co., Ltd. ("Suzhou Thermal Power") (viii)	PRC	Held indirectly	RMB600,000,000	Construction, operation and management of electricity projects, and development and utilisation of clean energy	53.45%	100%
Huaneng Qinmei Ruijin Power Generation Co., Ltd. ("Qinmei Ruijin Power Generation") (x)	PRC	Held directly	RMB1,819,846,598	Construction, operation, management of electricity projects, and development and utilisation of clean energy	50%	100%

The subsidiaries above and the Group are all controlled by Huaneng Group before and after the acquisitions.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(iii) Subsidiaries acquired from business combinations not under common control

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Weihai Power Generation Limited Liability Company ("Weihai Power")	PRC	Held directly	RMB1,822,176,621	Power generation	60%	60%
Huaneng Huaiyin Power Generation Co., Ltd.	PRC	Held indirectly	RMB305,111,720	Power generation	100%	100%
Huade County Daditaihong Wind Power Utilisation Limited Liability Company	PRC	Held directly	RMB196,400,000	Wind power development and utilisation	100%	100%
Shandong Hualu Sea Transportation Limited Company	PRC	Held directly	RMB100,000,000	Cargo transportation along domestic coastal areas, and goods storage	74%	74%
Huaneng Qingdao Port Limited Company	PRC	Held directly	RMB219,845,009	Cargo loading and conveying, water carriage materials supply	51%	51%
Huaneng Yunnan Diandong Energy Limited Liability Company	PRC	Held directly	RMB9,654,092,100	Electricity project investment, power generation and sale, and coal exploitation and investment	100%	100%
Yunnan Diandong Yuwang Energy Limited Company	PRC	Held directly	RMB6,796,510,000	Electricity project investment, power generation and sale, and coal exploitation and investment	100%	100%
Huaneng Luoyang Co-generation Limited Liability Company	PRC	Held directly	RMB600,000,000	Production and sale of electricity and heating	80%	80%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(iii) Subsidiaries acquired from business combinations not under common control *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Zhumadian Wind Power Generation Co., Ltd.	PRC	Held directly	RMB259,028,000	Wind power generation, and new energy development and utilisation	90%	90%
SinoSing Power	Singapore	Held directly	US$1,476,420,585	Investment holding	100%	100%
Tuas Power	Singapore	Held indirectly	S$1,433,550,000	Investment holding	100%	100%
Tuas Power Supply Pte. Ltd.	Singapore	Held indirectly	S$500,000	Power sale	100%	100%
TP Asset Management Pte. Ltd.	Singapore	Held indirectly	S$2	Rendering of environment engineering services	100%	100%
TPGS Green Energy Pte. Ltd.	Singapore	Held indirectly	S$1,000,000	Provision of utility services	75%	75%
Hebei Jieyuan Vegetable Planting Co., Ltd.	PRC	Held indirectly	RMB46,134,000	Greenhouse vegetable planting, solar distributed generation	100%	100%
Chongqing Tuobo Water Affairs Co., Ltd. (i)	PRC	Held indirectly	RMB10,000,000	Port management, port cargo handling and transportation	60%	100%
Huaneng Anyang Co-generation Limited Liability Company ("Anyang Thermoelectric") (i) (xiv)	PRC	Held directly	RMB152,232,000	Electric power production and sale	51%	100%
Shandong Laiwu Fangxing Thermal Power Co., Ltd. (i)	PRC	Held indirectly	RMB20,000,000	Heat production and supply; Construction engineering design;	40.8%	51%
Hong Kong Energy (iv)	Hong Kong	Held indirectly	US$360,000,000	Investment	40%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(iii) Subsidiaries acquired from business combinations not under common control *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huatai Power (iv)	Pakistan	Held indirectly	PKR1,000,000	Power generation operation and main tenance	40%	100%
Ruyi Pakistan Energy (iv)	Pakistan	Held indirectly	US$360,000,000	Electric power production and sale	40%	100%
Huaneng Shandong Power Design Co., Ltd. ("Shandong Power Design") (iv)	PRC	Held indirectly	RMB3,000,000	Power engineering design, technology consulting and detection test	76.55%	100%
Shanxi Xiaoyi Economic Development Zone Huaneng Energy Service Co., Ltd. ("Shanxi Xiaoyi Energy") (ix)	PRC	Held indirectly	RMB100,000,000	Electricity sale, and sale of raw coal and processed coal	51%	100%
Yi County Nengwei New Energy Co., Ltd.**	PRC	Held indirectly	RMB100,000	Production and sale of electricity, solar power generation	100%	100%

** These companies were newly acquired in 2023.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(iv) Subsidiaries acquired from asset acquisitions

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Shangrao Hongyuan Power Co., Ltd	PRC	Held indirectly	RMB397,800,000	Construction, operation and management of photovoltaic power projects	100%	100%
Poyang Luohong Power Co., Ltd.	PRC	Held indirectly	RMB780,000,000	Investment, construction, operation and management of photovoltaic power projects	100%	100%
Shuozhou Taizhong Wind Power Limited Company	PRC	Held indirectly	RMB362,703,300	Investment, construction, operation and management of wind power projects	99.46%	99.46%
Wuzhai Taizhong New Energy Wind Power Limited Company	PRC	Held indirectly	RMB518,147,600	Investment, construction, operation and management of wind power projects	99.62%	99.62%
Xian Xvheng New Energy Limited Company	PRC	Held indirectly	RMB549,530,000	Construction, operation and management of photovoltaic power projects	100%	100%
Licheng Yingheng Clean Energy Limited Company	PRC	Held indirectly	RMB1,100,000,000	Construction, operation and management of photovoltaic power projects	100%	100%
Ruicheng Yaosheng Power Development Co., Ltd.	PRC	Held indirectly	RMB405,880,000	Development, construction, management and operation of solar power projects	100%	100%
Ruicheng Ningsheng New Energy Co., Ltd.	PRC	Held indirectly	RMB207,699,000	Development, construction, management and operation of solar power projects	100%	100%
Fanshi Nengyu Wind Power Co., Ltd.	PRC	Held indirectly	RMB512,123,000	Development, construction, management and operation of wind power projects, and wind power generation	100%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(iv) Subsidiaries acquired from asset acquisitions *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Xincai Juhe Wind Power Co., Ltd.	PRC	Held indirectly	RMB111,600,000	Development, construction, management and operation of wind power projects, and wind power generation	100%	100%
Dashiqiao Baoneng Wind Power Generation Co., Ltd.	PRC	Held indirectly	RMB1,000,000	Development, construction, management and operation of wind power projects, and wind power generation	100%	100%
Dashiqiao Hongjing Wind Power Generation Co., Ltd.	PRC	Held directly	RMB100,000	Development, construction, management and operation of wind power projects, and wind power generation	100%	100%
Dashiqiao Guancheng New Energy Co., Ltd.	PRC	Held indirectly	RMB1,000,000	Development and operation of new energy power projects	80%	80%
Dashiqiao Xintai New Energy Co., Ltd.	PRC	Held indirectly	RMB10,000,000	Development and operation of new energy power projects	80%	80%
Dandong Kangyi Power Co., Ltd.	PRC	Held indirectly	RMB1,000,000	Development and operation of new energy power projects	80%	80%
Hengfeng Jingluo Power Co., Ltd.	PRC	Held indirectly	RMB98,000,000	Development, construction, management and operation of solar power projects	100%	100%
Huaneng (Loudi) New Energy Co., Ltd.	PRC	Held directly	RMB1,000,000	Wind power generation, new energy technology promotion service	100%	100%
Huaneng Fengcheng New Energy Co., Ltd.	PRC	Held indirectly	RMB1,320,000,000	Wind power generation, new energy technology promotion service	70%	70%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(iv) Subsidiaries acquired from asset acquisitions *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huanggang Huangmei Xiaochi Yuyang New Energy Development Co., Ltd.	PRC	Held indirectly	RMB164,920,000	Development and operation of new energy power projects	100%	100%
Huanghua Younaite Guangmei New Energy Co., Ltd.	PRC	Held indirectly	RMB20,000,000	Development and operation of new energy power projects	100%	100%
Weixian Zeen Vegetable Planting Co., Ltd.	PRC	Held indirectly	RMB6,000,000	Vegetable planting and sale, agricultural marketing sales and development, construction, management and operation of solar power projects	100%	100%
Yingkou Changhao New Energy Co., Ltd.	PRC	Held indirectly	RMB1,000,000	New energy and energy-saving technology promotion, construction of solar and wind power projects, electronic product and mechanical equipment installation	80%	80%
Yingkou Shangdian New Energy Co., Ltd.	PRC	Held indirectly	RMB1,000,000	Electric power production and sale	100%	100%
Hangzhou Hengyang Power Co., Ltd. ("Hengyang Power")	PRC	Held indirectly	RMB461,800,000	Solar photovoltaic power generation system design, integration, installation	100%	100%
Xishui Hengtai Power Co., Ltd. ("Hengtai Power")	PRC	Held indirectly	RMB226,282,000	Solar photovoltaic power generation system design, integration, installation	100%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(iv) Subsidiaries acquired from asset acquisitions *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huanggang Jiangpeng New Energy Power Generation Co., Ltd. ("Jiangpeng New Energy")	PRC	Held indirectly	RMB60,000,000	Solar power generation; solar module manufacturing, processing and sales	80%	80%
Suzhou Xinmao New Energy Co., Ltd. ("Suzhou Xinmao New Energy")	PRC	Held indirectly	RMB16,000,000	Technical services, technology development, technical consultation, technology exchange	100%	100%
Jinhua Dongyan New Energy Co., Ltd. ("Jinhua Dongyan New Energy")	PRC	Held indirectly	RMB16,000,000	Power generation, transmission, and power supply business	100%	100%
Guangzhou Huadu Qihang New Energy Co.,Ltd. ("Guangzhou Qihang New Energy")	PRC	Held indirectly	RMB6,213,581,411	Wind power technical services; R&D of emerging energy technologies; Research and development of offshore wind related systems	100%	100%
Guangzhou Huadu District Qifan New Energy Co., Ltd. ("Guangzhou Qifan New Energy")	PRC	Held indirectly	RMB100,000	Wind power technical services; R&D of emerging energy technologies; Research and development of offshore wind related systems	100%	100%
Anji Ruineng New Energy Development Co., Ltd. ("Anji Ruineng")	PRC	Held indirectly	RMB10,000,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Shanxi Jinlisheng Energy Technology Co., Ltd. ("Shanxi Jinlisheng")	PRC	Held indirectly	RMB1,060,000	Featured agricultural sightseeing tourism, photovoltaic power generation	100%	100%
Wugang Yongheng New Energy Co., Ltd.	PRC	Held indirectly	RMB12,000,000	Solar cells and their components, solar lamps	100%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(iv) Subsidiaries acquired from asset acquisitions *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Kaifeng Yangzhao New Energy Co., Ltd.	PRC	Held indirectly	RMB1,000,000	Research and development of emerging energy technologies	100%	100%
Changde Hongyue New Energy Co., Ltd.	PRC	Held directly	RMB20,000,000	Power generation business,power supply (distribution) business	80%	80%
Hefei Yangyuan New Energy Technology Co., Ltd.	PRC	Held indirectly	RMB1,000,000	Solar power generation technical services	100%	100%
Wugang Keheng New Energy Co., Ltd.	PRC	Held directly	RMB5,000,000	Solar power generation, photovoltaic equipment retail	100%	100%
Dalian Chuanbo Haizhuang New Energy Co., Ltd. (i)	PRC	Held indirectly	RMB10,000,000	Development, construction, management and operation of wind power projects, wind power generation	97.96%	100%
Huanggang Xinxiang New Energy Power Generation Co., Ltd. ("Xinxiang New Energy") (i)	PRC	Held indirectly	RMB60,000,000	Solar power generation; solar module manufacturing, processing and sales	80%	100%
Huakang Anze New Energy Co., Ltd. (i)	PRC	Held indirectly	RMB1,000,000	Research and development of emerging energy technologies	82%	100%
Quanjiao Xiangneng New Energy Co., Ltd. (i)	PRC	Held indirectly	RMB100,000,000	Solar power generation technical services	60%	100%
Yingcheng Huajing Chen New Energy Co., Ltd. (i)	PRC	Held indirectly	RMB339,177,360	Power generation business, transmission business, power supply business	85%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(iv) Subsidiaries acquired from asset acquisitions *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Yingcheng Huachen New Energy Co.,Ltd. (i)	PRC	Held indirectly	RMB339,177,360	Power generation business, transmission business, power supply business	85%	100%
Yingcheng Huayi New Energy Co., Ltd.*** (i)	PRC	Held indirectly	RMB104,966,520	Production and sale of electricity and heat	85%	100%
Yingcheng Huajingyi New Energy Co., Ltd.*** (i)	PRC	Held indirectly	RMB104,966,520	Production and sale of electricity and heat	85%	100%
Huaneng Shuifa (Dashiqiao) New Energy Co., Ltd.*** (i)	PRC	Held indirectly	RMB3,265,300	Production and sale of electricity and heat	51%	51%
Shuifa Energy (Dashiqiao) Co., Ltd.*** (i)	PRC	Held indirectly	RMB1,000,000	Power generation business, transmission business, power supply business	51%	100%
Hubei Jinyuhui New Energy Co., Ltd.*** (i)	PRC	Held indirectly	RMB330,243,960	Power generation business, transmission business, power supply business	90%	100%
Xiaochang Jinghui New Energy Co., Ltd.*** (i)	PRC	Held indirectly	RMB330,243,960	Power generation business, transmission business, power supply business	90%	100%
Huaneng Fuken (Fuzhou) New Energy Co., Ltd.***	PRC	Held indirectly	RMB200,000,000	Power generation business, transmission business, power supply business	100%	100%
Jiangsu Yangzhao New Energy Technology Co., Ltd.***	PRC	Held indirectly	RMB10,000,000	Power generation business, transmission business, power supply business, solar power generation	100%	100%
Xiyang County Huidi New Energy Co., Ltd.***	PRC	Held indirectly	RMB5,000,000	Power generation business, transmission business, power supply business	100%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(iv) Subsidiaries acquired from asset acquisitions *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Luohe Yangzhao New Energy Co., Ltd.***	PRC	Held indirectly	RMB1,000,000	Power generation business, transmission business, power supply business, solar power generation	100%	100%
Xuancheng Xinneng Cleaning Energy Co., Ltd.***	PRC	Held indirectly	RMB1,000,000	Power generation business, transmission business, power supply business, solar power generation	100%	100%
Huaneng Coastal (Nantong) Energy Development Co., Ltd.***	PRC	Held indirectly	RMB20,000,000	Power generation business, transmission business, power supply business	71%	71%
Suqian Huayuyuan Cleaning Energy Co., Ltd.***	PRC	Held indirectly	RMB5,000,000	Power generation business, transmission business, power supply (distribution) business	80%	80%
Shijiazhuang Zhuoshi New Energy Technology Co., Ltd.***	PRC	Held indirectly	RMB500,000	Production and sale of electricity, solar power generation, wind power generation	100%	100%
Shijiazhuang Qingrun New Energy Technology Co., Ltd.***	PRC	Held indirectly	RMB500,000	Production and sale of electricity, solar power generation	100%	100%
Weixian Main Qingxin Nengyuan Co., Ltd.***	PRC	Held indirectly	RMB500,000	Production and sale of electricity and heat	95%	95%
Hangzhou Huaxin Zhongneng Energy Development Co., Ltd.***	PRC	Held indirectly	RMB2,000,000	Production and sale of electricity and heat	100%	100%

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

(iv) Subsidiaries acquired from asset acquisitions *(Cont'd)*

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Qinghe County Xusheng Cleaning Energy Technology Co., Ltd.***	PRC	Held indirectly	RMB500,000	Production and sale of electricity and heat	100%	100%
Zanhuang County Yangping New Energy Technology Co., Ltd.***	PRC	Held indirectly	RMB500,000	Production and sale of electricity and heat	100%	100%
Libo Huaneng New Energy Power Generation Co., Ltd.***	PRC	Held indirectly	RMB500,000	Power generation business, transmission business, power supply (distribution) business	100%	100%
Pingtang Huaneng New Energy Power Generation Co., Ltd.***	PRC	Held indirectly	RMB500,000	Wind power generation	100%	100%

*** These companies were newly acquired in 2023.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

Notes:

(i) These companies are subsidiaries of the non-wholly owned subsidiaries controlled by the Company, so the voting right percentage of these companies are bigger than the interest percentage held by the Group.

(ii) According to its articles of association, the other shareholder who holds the remaining equity interests of Shidongkou Power entrusts the Group to exercise all its voting rights in relation to the operation and financial policies of Shidongkou Power. Accordingly, the Group has control over Shidongkou Power.

(iii) According to the voting in concert agreement entered into between the Group and another shareholder with 27.39% equity interests in Nanjing Combined Cycle Co-generation, the shareholder agreed to vote the same in respect of significant financial and operating decisions made by the Company. Accordingly, the Group has control over Nanjing Combined Cycle Co-generation.

(iv) These companies are subsidiaries of Shandong Power. The Company holds 80% interests in Shandong Power. Thus, the Group indirectly holds interests in these companies through their parent company.

According to the voting in concert agreement entered into among Shandong Power and Ruyi Coal Power, the other equity holder agreed to vote the same in respect of significant financial and operating decisions made by Shandong Power. Accordingly, the Company has control over Ruyi Coal Power.

Jiaxiang Power, Qufu Co-generation, Weishan New Energy and Helan New Energy are wholly-owned subsidiaries of Ruyi Coal Power, a 50% owned subsidiary of Shandong Power. Accordingly, the Group indirectly holds 40% interests in the above-mentioned four subsidiaries.

Shandong Power directly holds 72% interests in Shandong Fuel Company and Shandong Energy Engineering; meanwhile, Shandong Power indirectly holds a total of 23.68% equity interests and 28% voting rights in Shandong Fuel Company and Shandong Energy Engineering respectively through its own subsidiaries. Thus, the Company indirectly holds 76.55% interests and 100% voting rights in Shandong Energy Engineering, Shandong Fuel Company. Shandong Power Design is a wholly-owned subsidiary of Shandong Maintenance Company,

The Company directly holds 44% equity interests in Rizhao Power and Shandong Power directly holds 56% interests in Rizhao Power. Thus, the Company holds 88.8% interests over Rizhao Power and its subsidiary, Wulian New Energy.

According to the voting in concert agreement entered into between Hong Kong Investment, who holds 50% equity interests of Hong Kong Energy, and the other shareholder of Hong Kong Energy, the other shareholder agreed to vote the same in respect of significant financial and operating decisions made by Hong Kong Investment. Accordingly, the Group has control over Hong Kong Energy and its subsidiaries including Huatai Power and Ruyi Pakistan Energy.

(v) According to the investment cooperation agreement and articles of association signed by Jilin Power and another shareholder of Zhenlai Photovoltaic Power, the shareholder enjoys fixed operating income and releases all shareholders' equity at the expiration. Therefore, the Group has control over Zhenlai Photovoltaic Power.

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

Notes: *(Cont'd)*

(vi) According to the voting in concert agreement entered into between the Company and another shareholder of Beijing Co-generation, the Company is entrusted to vote the 25% voting rights held by the other shareholder as long as the Group remains as the largest shareholder of Beijing Co-generation. Thus, the Group has majority voting rights required by the articles of association to control the operation and financial policies of Beijing Co-generation. Accordingly, the Group has control over Beijing Co-generation.

(vii) According to the voting in concert agreement entered into between the Group and another shareholder with 10% equity interests in Chaohu Power Generation, the shareholder agreed to vote the same in respect of significant financial and operating decisions made by the Group. Accordingly, the Group has control over Chaohu Power Generation.

(viii) According to the voting in concert agreement entered into between the Group and the other two shareholders of Suzhou Thermal Power, the shareholders agreed to vote the same in respect of significant financial and operating decisions made by the Group. As a result, the Group has control over Suzhou Thermal Power.

(ix) In 2016, the Group accounted for the investment in Shanxi Xiaoyi Energy as a joint venture. On 15 February 2017, the Group entered into an agreement with the other shareholder with 49% equity interests in Shanxi Xiaoyi Energy who agreed to vote the same in respect of significant financial and operating decisions made by the Group. Accordingly, the Group has had control over Shanxi Xiaoyi Energy since February 2017.

(x) In 2019, the Company's equity interest in Qinmei Ruijin Power Generation decreased from 100% to 50% due to capital injection from a third-party shareholder. On 28 December 2019, the Company entered into a voting in concert agreement with the other shareholder, and the other shareholder agreed to vote the same in respect of significant financial and operating decisions. Accordingly, the Company still has control over Qinmei Ruijin Power Generation.

(xi) According to the voting in concert agreement entered into between the Group and another shareholder with 49% equity interests in Jiyuan Energy Sales, the shareholder agreed to vote the same in respect of significant financial and operating decisions made by the Group. Accordingly, the Group has control over Jiyuan Energy Sales.

(xii) According to the articles of association signed by Jiangsu Energy Development, a wholly owned subsidiary of the Company, and other shareholders of Sheyang New Energy, Jiangsu Energy Development enjoys 70% voting rights. Therefore, the Group has control over Sheyang New Energy.

(xiii) According to the voting in concert agreement entered into between the Group and another shareholder with 35% equity interests in Daishan Wind Power, the shareholder agreed to vote the same in respect of significant financial and operating decisions made by the Group. Accordingly, the Group has control over Daishan Wind Power.

(xiv) According to the voting in concert agreement entered into between the Group and another shareholder with 49% equity interests in Anyang thermoelectric the shareholder agreed to vote the same in respect of significant financial and operating decisions made by the Group. Accordingly, the Group has control over Anyang thermoelectric.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

Notes: (Cont'd)

(xv) According to the voting in concert agreement entered into between the Group and another shareholder with 20% equity interests in Liuheng Wind Power, the shareholder agreed to vote the same in respect of significant financial and operating decisions made by the Group. Accordingly, the Group has control over Liuheng Wind Power.

(xvi) In 2023, in order to issue the Infrastructure Investment Directed Asset Backed Notes and Infrastructure Investment Asset Backed Special Plans, the Group incorporated five partnership enterprises, namely Huamin Tianjin, Tianjin Jingchu Power, Longxing Power, Qingdao Huaying and Huagan Tianjin. According to the partnership agreement, the Group holds 66.67% (two-thirds) voting rights in these partnership enterprises, thus the Group has control over aforementioned enterprises.

- Fujian Energy Development, a wholly owned subsidiary of the Company, holds 2% equity interests in Huamin Tianjin. And Fujian Energy Sales, a wholly owned subsidiary of the Company, holds 18% equity interests in Huamin Tianjin. As a result, the Company indirectly holds 20% interests in Huamin Tianjin.

- The Company holds 14.95% equity interests in Tianjin Jingchu Power, and Hubei Energy Sales, a wholly owned subsidiary of the Company, holds 15% equity interests in Tianjin Jingchu Power. As a result, the Company directly holds 29.95% interests in Tianjin Jingchu Power.

- Heilongjiang Power Generation, a wholly owned subsidiary of the Company, holds 5% equity interests in Longxing Power. And Heilongjiang Energy Sales, a wholly owned subsidiary of the Company, holds 15% equity interests in Longxing Power. As a result, the Company indirectly holds 20% equity interests in Longxing Power.

- Shandong Power, an 80% owned subsidiary of the Company, holds 4% equity interests in Qingdao Huaying. And Shandong Silk Road, an 80% owned subsidiary of the Company, hold 16.01% equity interests in Qingdao Huaying. As a result, the Company indirectly holds 16% equity interests in Qingdao Huaying.

- The Company holds 2% equity interests in Huagan Tianjin and Jiangxi Energy Sales, a wholly owned subsidiary of the Company, holds 18% equity interests in Huagan Tianjin. As a result, the Company directly holds 20% equity interests in Huagan Tianjin.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

10 OTHER EQUITY INSTRUMENT INVESTMENTS

	As at 31 December	
	2023	2022
Equity securities designated as at FVOCI (non-recycling)		
Unlisted equity investments at fair value		
Ganlong Double-track Railway (Fujian) Co., Ltd. ("Ganlong Railway Fujian")/Ganlong Double-track Railway Co., Ltd. ("Ganlong Railway") *	380,588	443,999
Others	262,335	264,913
Total	642,923	708,912

* In 2023, the board of Ganlong Railway approved a resolution on the split of Ganlong Railway, Ganlong Railway was divided into Ganlong Railway and Ganlong Railway Fujian. Since then, the Company's 7.89% interest in Ganlong Railway was replaced with the 14.205% interest in Ganlong Railway Fujian.

The above equity investments were irrevocably designated as at fair value through other comprehensive income as the Group considers these investments to be strategic in nature.

11 POWER GENERATION LICENCE

The movements in the carrying amount of the power generation licence during the years are as follows:

	2023	2022
Beginning of the year	4,156,846	3,783,756
Movement:		
Currency translation differences	155,668	373,090
End of the year	4,312,514	4,156,846

The Group acquired the power generation licence in connection with the acquisition of Tuas Power. The power generation licence was initially recognised at fair value at the acquisition date. Tuas Power operates power plants in Singapore pursuant to the licence granted by the Energy Market Authority for a period of 30 years from 2003 until 2032. The licence was extended to 2044 during 2011 with minimal costs and is subject to further renewal. The Group expects that the applicable rules and regulations surrounding the renewal can be complied with based on the current market framework. The Group assessed the useful life of the power generation licence at 31 December 2023 to be indefinite and therefore the licence is not amortised.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

11 POWER GENERATION LICENCE *(Cont'd)*

Impairment test of the power generation licence

The power generation licence belongs to and has been assigned to Tuas Power, a CGU. There was no impairment provided for the power generation licence for the year ended 31 December 2023 (2022: Nil). For key assumptions used for value-in-use calculations, please refer to Note 14 for details.

12 MINING RIGHTS

The movements in the carrying amount of mining rights during the years are as follows:

	2023	2022
Beginning of the year		
Cost	**2,506,867**	2,506,867
Accumulated impairment losses	**(895,381)**	(895,381)
Net book value	**1,611,486**	1,611,486
Movements:		
Amortisation	**(2,371)**	–
End of the year	**1,609,115**	1,611,486
Cost	**2,506,867**	2,506,867
Accumulated impairment losses	**(895,381)**	(895,381)
Accumulated amortisation	**(2,371)**	–
Net book value	**1,609,115**	1,611,486

In 2023, no impairment losses for mining rights (2022: Nil) have been recognised. In 2023, mining rights with original cost amounting to RMB796 million owned by Mining Branch of Yunnan Diandong Yuwang Energy Limited Company, one of the Company's subsidiary, are amortised based on the units of production method over estimated proved and probable reserves of the mines, which were recognised in other operating expenses.

(Amounts expressed in thousands of RMB unless otherwise stated)

13 DERIVATIVE FINANCIAL INSTRUMENTS

Details of derivative financial instruments are as follows:

	As at 31 December	
	2023	2022
Derivative financial assets		
– Hedging instruments for cash flow hedge (fuel swap contracts)	**54,387**	20,171
– Hedging instruments for cash flow hedge (exchange forward contracts)	**3,379**	21,637
– Hedging instruments for cash flow hedge (interest rate swap contracts)	**2,261**	6,687
Total	**60,027**	48,495
Less: non-current portion		
– Hedging instruments for cash flow hedge (fuel swap contracts)	**553**	1,801
– Hedging instruments for cash flow hedge (exchange forward contracts)	**63**	1,769
Total non-current portion	**616**	3,570
Total current portion	**59,411**	44,925
Derivative financial liabilities		
– Hedging instruments for cash flow hedge (fuel swap contracts)	**274,144**	360,798
– Hedging instruments for cash flow hedge (exchange forward contracts)	**391,055**	298,231
– Hedging instruments for cash flow hedge (interest rate swap contracts)	**29,615**	3,821
Total	**694,814**	662,850
Less: non-current portion		
– Hedging instruments for cash flow hedge (fuel swap contracts)	**97,333**	39,557
– Hedging instruments for cash flow hedge (exchange forward contracts)	**327,689**	202,235
– Hedging instruments for cash flow hedge (interest rate swap contracts)	**29,615**	3,821
Total non-current portion	**454,637**	245,613
Total current portion	**240,177**	417,237

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

13 DERIVATIVE FINANCIAL INSTRUMENTS *(Cont'd)*

For the years ended 31 December 2023 and 2022, no material ineffective portion arising from cash flow hedges was recognised in profit or loss.

TPG uses foreign currency forward contracts which are designated as hedging instruments in cash flow hedges of purchase in USD. It also uses fuel oil swap contracts to hedge its fuel price risk arising from highly probable forecast purchases of fuel purchases.

TPSTMWR uses various interest rate swap contracts to hedge floating quarterly interest payments on borrowings with maturity dates up to 2044. The notional principal amount of these outstanding interest rate swap contracts at 31 December 2023 was S$132 million (RMB equivalent of RMB710 million) (31 December 2022: S$136 million (RMB equivalent of RMB705 million)). Through these arrangements, TPG and TPSTMWR swapped original floating interest (6-month FSOR and 3-month FSOR) to annual fixed interest determined by individual swap contracts. These interest rate swap contracts are settled quarterly from September 2018 to June 2044. As at 31 December 2023, the remaining interest rate swap contracts were carried on the consolidated statement of financial position as financial liabilities of RMB27 million (31 December 2022: financial assets of RMB3 million).

There is an economic relationship between the hedged items and the hedging instruments as the terms of the exchange forward contracts, fuel swap contracts and interest rate swap contracts match the terms of the expected highly probable forecast transactions and borrowings (i.e., notional amount and expected payment date). To test the hedge effectiveness, the Group uses either the cumulative volume/dollar offset method or the hypothetical derivative method where it compares the changes in the fair value of the hedging instruments against the changes in fair value of the hedged items attributable to the hedged risks.

The hedge ineffectiveness can arise from:

(a) Differences in the timing of the cash flows of the hedged items and the hedging instruments.

(b) Different indexes (and accordingly different curves) linked to the hedged risk of the hedged items and hedging instruments.

(c) The counterparties' credit risk differently impacting the fair value movements of the hedging instruments and hedged items.

(d) Changes to the forecasted amount of cash flows of hedged items and hedging instruments.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

13 DERIVATIVE FINANCIAL INSTRUMENTS *(Cont'd)*

The analysis of contractual cash inflows/(outflows) of major derivative financial instruments is as follows:

			Maturity		
	Carrying amounts	Contractual cash flows	Within 1 year	Between 1 and 5 years	After 5 years
As at 31 December 2023					
Derivative financial assets					
Fuel derivatives used for hedging (net settlement)	54,387	54,387	53,834	553	–
Forward exchange contracts used for hedging					
– inflows	–	507,259	464,598	42,661	–
– outflows	–	(503,869)	(461,247)	(42,622)	–
	3,379	3,390	3,351	39	–
Derivative financial liabilities					
Fuel derivatives used for hedging (net settlement)	(274,144)	(274,144)	(176,811)	(97,333)	–
Forward exchange contracts used for hedging					
– inflows	–	11,331,819	3,071,437	8,260,382	–
– outflows	–	(11,768,394)	(3,135,928)	(8,632,466)	–
	(391,055)	(436,575)	(64,491)	(372,084)	–
Net-settled interest rate swaps used for hedging					
– net cash outflows	(27,354)	(38,113)	2,288	(14,334)	(26,067)

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

13 DERIVATIVE FINANCIAL INSTRUMENTS *(Cont'd)*

		Maturity			
	Carrying amounts	Contractual cash flows	Within 1 year	Between 1 and 5 years	After 5 years
As at 31 December 2022					
Derivative financial assets					
Fuel derivatives used for hedging (net settlement)	20,171	20,171	18,370	1,801	–
Forward exchange contracts used for hedging					
– inflows	–	187,124	(18,567)	205,691	–
– outflows	–	(187,094)	38,271	(225,365)	–
	21,637	30	19,704	(19,674)	–
Net-settled interest rate swaps used for hedging					
– net cash outflows	2,866	(954)	(6,859)	491	5,414
Derivative financial liabilities					
Fuel derivatives used for hedging (net settlement)	(360,798)	(360,798)	(321,241)	(39,557)	–
Forward exchange contracts used for hedging					
– inflows	–	9,950,475	2,723,053	7,227,422	–
– outflows	–	(10,013,097)	(2,821,973)	(7,191,124)	–
	(298,231)	(62,622)	(98,920)	36,298	–

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

14 GOODWILL

The movements of goodwill during the years are as follows:

	2023	2022
Beginning of the year		
Cost	19,325,582	18,290,484
Accumulated impairment losses	(4,940,673)	(4,014,260)
Net book value	14,384,909	14,276,224
Movements:		
Impairment charge for the year	(295,001)	(897,524)
Currency translation differences – cost	431,885	1,035,098
Currency translation differences – impairment	(12,054)	(28,889)
End of the year	14,509,739	14,384,909
Cost	19,757,467	19,325,582
Accumulated impairment losses	(5,247,728)	(4,940,673)
Net book value	14,509,739	14,384,909

Impairment tests for goodwill

In the impairment assessment of the Group, goodwill is allocated to a CGU or CGUs that were expected to benefit from the synergies of the business combination and is allocated to the relevant CGUs based on operating areas. The CGUs are consistent with those used on the purchase dates and in the impairment tests in previous years. The carrying amounts of the major goodwill allocated to individual CGU are as follows:

	2023	2022
PRC power segment:		
Jining Yunhe	–	295,001
Wuhan Power	518,484	518,484
Overseas segment:		
Tuas Power	11,630,674	11,210,843

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

14 GOODWILL *(Cont'd)*

Impairment tests for goodwill *(Cont'd)*

The recoverable amount of a CGU is determined based on value-in-use calculations. The cash flow projections of CGUs are based on management's forecasted cash flows in the next five years. Based on existing production capacity, the domestic subsidiaries of the Company expect cash flows beyond such periods will be similar to that in the 5th year and thus a zero terminal growth rate is utilised in the forecasts. For Tuas Power, cash flows beyond the 5th year is extrapolated using a terminal growth rate of 2.0%, which is not greater than the forecasted growth rate as stipulated in the relevant report issued by the Energy Market Authority of Singapore ("EMA").

Key assumptions used for value-in-use calculations:

1) PRC power segment

For goodwill of domestic CGUs, the key assumptions applied in the impairment tests include the expected future sales volumes (power generation hours), fuel prices and discount rates. Management determined these assumptions based on past performance and its expectations on market development. The discount rates used reflect specific risks relating to individual CGUs. Based on the impairment assessment, Jining Yunhe recognised goodwill impairment losses of RMB295 million (2022: Nil) in 2023. For details of key assumptions (including WACC) used, please refer to the details in Note 7.

For the goodwill allocated to CGUs in the PRC, management has assessed that two of the most sensitive key assumptions are future sales volume and fuel price. If future sales volume had decreased by 1% or 5% from management's estimates, while other variables stay constant with the expectations, the Group would have to recognise impairment losses against goodwill by approximately RMB63 million and RMB726 million (31 December 2022: RMB31 million and RMB1,059 million), respectively. If fuel price had increased by 1% or 5% from management's estimates, while other variables stay constant with the expectations, the Group would have to recognise impairment losses against goodwill by approximately RMB244 million and RMB1,637 million (31 December 2022: RMB171 million and RMB2,172 million), respectively.

2) Overseas segment

For the goodwill allocated to Tuas Power, the key assumptions applied in the impairment model include the expected future sales volume, gross margin, terminal growth rate and discount rate. Management determined these key assumptions based on past performance and its expectations on market development.

The EMA released its Singapore Electricity Market Outlook ("SEMO 2021") on 10 November 2021, stating that the annual system demand and system peak demand are projected to grow at a CAGR of between 2.8% and 3.2% over the next 10 years, from 2022 to 2032, taking into account various factors including demographic, climate and economic impacts as well as projected demand from new high-growth sectors such as data centres. According to SEMO 2021 report, the compound annual growth rate of the electricity market from 2009 to 2020 was about 2.2%. The market share of Singapore Tuas Power in Singapore has remained stable, with the market share ratios being 21.4%, 19.2%, 22.3% and 20.4% in 2020, 2021,2022 and 2023, respectively. The sales volumes of Singapore Tuas Power from 2024 to 2028 are forecasted based on its past performance, and a terminal growth rate of 2% (2022: 2%) is utilised in the forecast.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

14 GOODWILL *(Cont'd)*

Impairment tests for goodwill *(Cont'd)*

Key assumptions used for value-in-use calculations: *(Cont'd)*

2) Overseas segment*(Cont'd)*

The gross profit for the forecast period and the perpetuity period of Tuas Power is as follows:

Electricity Sales Gross Profit Unit: Singapore Dollars/MWh (Megawatt-hour)	2023 Annual Impairment Testing Model
2024	62.21
2025	60.35
2026	53.82
2027	53.65
2028	49.35
Perpetuity period	53.12

Management used the after-tax discount rate for the power generation industry for 2021 and 2022 published by the EMA in November 2020 to calculate the pre-tax discount rate used for value-in-use calculations of Tuas Power, which is 9.91% for the year ended 31 December 2023 (2022: 9.94%).

According to the impairment assessment, there was no impairment provided for the goodwill of Tuas Power for the year ended 31 December 2023 (2022: Nil). In 2023 and 2022, the fluctuation of goodwill in respect of Tuas Power was due to currency translation differences.

For the goodwill allocated to the CGU in Tuas Power, management has assessed that one of the most sensitive key assumptions is the pre-tax discount rate which was arrived at based on weighted average cost of capital. An absolute increase in the pre-tax discount rate of 0.5% (31 December 2022: 0.5%) would result in a decrease of approximately RMB1,106 million (31 December 2022: RMB1,003 million) in the recoverable amount of the CGU.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

15 OTHER NON-CURRENT ASSETS

Details of other non-current assets are as follows:

	As at 31 December	
	2023	2022
Finance lease receivables (i) (Note 42)	**7,887,747**	8,682,006
VAT recoverable	**6,992,811**	5,604,843
Pre-construction cost (ii)	**1,780,828**	953,147
Intangible assets (iii)	**699,056**	657,420
Prepaid connection fees	**19,713**	24,156
Contract assets	**1,073,544**	1,002,283
Others	**2,853,959**	2,304,074
Total	**21,307,658**	19,227,929

Notes:

(i) Ruyi Pakistan Energy entered into a power purchase agreement with CPPA-G to sell all of the electricity produced with a regulated tariff mechanism approved by the National Electric Power Regulatory Authority. In accordance with the power purchase agreement and tariff mechanism, almost all the risks and rewards in relation to the power assets were in substance transferred to CPPA-G and therefore were accounted for as a finance lease to CPPA-G. Please refer to Note 42 for other details of finance lease receivables.

(ii) In 2023, for early-stage projects with indicators of impairment due to project suspension or postponement, the Group estimated their recoverable amount based on the net amount of fair value less costs to sell. When determining the recoverable amount, the Group evaluated whether the formed pre-construction results could continue to be utilised or sold separately, and determined their fair value based on the carrying amount or similar market prices. According to the impairment assessment results, the Group had provided an impairment loss of RMB59.25 million for pre-construction cost of the early-stage projects that were under suspension or postponement.

(iii) The intangible assets primarily consist of software, patented technologies, etc. In 2023, there was no impairment provided for the intangible assets (2022: Nil).

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

16 INVENTORIES

Inventories comprised:

	As at 31 December	
	2023	2022
Fuel for power generation	**10,710,646**	11,397,924
Material and supplies	**1,410,314**	1,487,787
	12,120,960	12,885,711
Less: provision for inventory obsolescence	**221,621**	183,803
Total	**11,899,339**	12,701,908

Movements of provision for inventory obsolescence during the years are analysed as follows:

	2023	2022
Beginning of the year	**(183,803)**	(169,382)
Provision	**(40,972)**	(7,708)
Reversal	**191**	1,222
Write-off*	**8,278**	4,649
Currency translation differences	**(5,315)**	(12,584)
End of the year	**(221,621)**	(183,803)

* In 2023, approximately RMB8 million (2022: RMB5 million) provision was written-off for the material and supplies which was provided for inventory provision in previous years.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

17 OTHER RECEIVABLES AND ASSETS

Other receivables and assets comprised the following:

	As at 31 December	
	2023	2022
Prepayments for inventories	5,571,287	6,168,858
Prepaid income tax	148,074	124,575
Others	285,586	444,918
Subtotal of prepayments	6,004,947	6,738,351
Less: Loss allowance	2,638	2,638
Total prepayments, net	6,002,309	6,735,713
Dividends receivable	341,078	288,979
Receivables from sales of fuel	69,039	74,458
Others	2,941,228	2,665,686
Subtotal of other receivables	3,351,345	3,029,123
Less: Loss allowance	315,616	295,645
Total other receivables, net	3,035,729	2,733,478
VAT recoverable	4,161,655	3,441,183
Finance lease receivables (Note 42)	967,102	761,752
Designated loan to a joint venture	70,123	72,814
Others	641,245	396,059
Subtotal of other assets	5,840,125	4,671,808
Less: Loss allowance	127,870	64,615
Total other assets, net	5,712,255	4,607,193
Gross total	15,196,417	14,439,282
Net total	14,750,293	14,076,384

(Amounts expressed in thousands of RMB unless otherwise stated)

17 OTHER RECEIVABLES AND ASSETS *(Cont'd)*

Please refer to Note 36 for details of other receivables and assets due from the related parties. The Group does not hold any collateral or other credit enhancements over its other receivables. The other receivables are non-interest-bearing.

The gross amounts of other receivables are denominated in the following currencies:

	As at 31 December	
	2023	2022
RMB	**2,530,722**	2,314,757
S$ (RMB equivalent)	**166,160**	189,546
US$ (RMB equivalent)	**3,548**	376
PKR (RMB equivalent)	**650,915**	524,444
Total	**3,351,345**	3,029,123

Movements of provision for loss allowance during the years are analysed as follows:

	2023	2022
Beginning of the year	**(362,898)**	(288,079)
Provision	**(122,430)**	(92,742)
Reversal	**–**	108
Write-off	**–**	76
Currency translation differences	**39,204**	17,739
End of the year	**(446,124)**	(362,898)

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

18 ACCOUNTS AND NOTES RECEIVABLE

Accounts and notes receivable comprised the following:

	As at 31 December	
	2023	2022
Accounts receivable	**45,956,773**	39,986,340
Notes receivable	**1,314,425**	2,792,246
	47,271,198	42,778,586
Less: Loss allowance	**130,524**	124,254
Total	**47,140,674**	42,654,332
Analysed into:		
Accounts receivable		
– At amortised cost	**45,956,773**	39,986,340
Notes receivable		
– At amortised cost	**1,314,425**	2,792,246

The gross amounts of accounts receivable and notes receivable are denominated in the following currencies:

	As at 31 December	
	2023	2022
RMB	**43,345,176**	38,114,036
S$ (RMB equivalent)	**1,744,400**	1,756,789
US$ (RMB equivalent)	**59,716**	311,964
PKR (RMB equivalent)	**2,121,906**	2,595,797
Total	**47,271,198**	42,778,586

The Group usually grants credit periods of about one month to domestic local power grid customers from the end of the month in which the sales are made. SinoSing Power provides credit periods that range from 5 to 60 days from the dates of billing. Certain accounts receivable of Singapore subsidiaries are backed by bankers' guarantees and/or deposits from customers. It is not practicable to determine the fair value of the collateral that corresponds to these accounts receivable. Ruyi Pakistan Energy's accounts receivable from CPPA-G are usually recovered within 5 months under the power purchase agreement signed with CPPA-G.

(Amounts expressed in thousands of RMB unless otherwise stated)

18 ACCOUNTS AND NOTES RECEIVABLE *(Cont'd)*

The Group, except for Singapore subsidiaries, does not hold any collateral or other credit enhancements over its accounts receivable. The accounts receivable are non-interest-bearing.

For the collateral of accounts receivable, please refer to Note 24 for details.

For the collateral of notes receivable, please refer to Note 27 and Note 30 for details.

Movements of provision for loss allowance during the years are analysed as follows:

	2023	2022
Beginning of the year	**(124,254)**	(140,088)
Provision	**(9,043)**	(10,941)
Reversal	**2,487**	24,859
Write-off	**442**	2,438
Currency translation differences	**(156)**	(522)
End of the year	**(130,524)**	(124,254)

An ageing analysis of accounts and notes receivable based on the invoice date was as follows:

	As at 31 December	
	2023	2022
Within 1 year	**46,235,487**	42,301,386
Between 1 and 2 years	**694,239**	241,380
Between 2 and 3 years	**152,760**	54,471
Over 3 years	**188,712**	181,349
Total	**47,271,198**	42,778,586

As at 31 December 2023, the maturity period of the notes receivable ranged from 1 to 12 months (31 December 2022: from 1 to 12 months).

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

19 COMPANY'S STATEMENT OF CHANGES IN EQUITY

			Capital surplus								
	Share capital	Other equity instruments	Share premium	Fair value reserve (non-recycling)	Other reserve in other comprehensive income	Other capital reserve	Subtotal	Surplus reserves	Reserve funds	Retained earnings	Total equity
Balance as at 1 January 2023	15,698,093	62,083,704	24,987,019	(334,592)	–	1,027,322	25,679,749	8,140,030	54,381	22,437,629	134,093,586
Profit for the year	–	2,916,280	–	–	–	–	–	–	–	667,178	3,583,458
Other comprehensive income for the year:											
Fair value changes of other equity investment instruments, net of tax	–	–	–	(43,245)	–	–	(43,245)	–	–	–	(43,245)
Total comprehensive income/(loss) for the year	–	2,916,280	–	(43,245)	–	–	(43,245)	–	–	667,178	3,540,213
Issue of other equity instruments (Note 21)	–	34,000,000	–		–	(19,876)	(19,876)	–	–	–	33,980,124
Redemption of other equity instruments (Note 21)	–	(17,000,000)	–		–	–	–	–	–	–	(17,000,000)
Cumulative distribution of other equity instruments (Note 21)	–	(2,373,815)	–		–	–	–	–	–	–	(2,373,815)
Disposal of equity investments at fair value through other comprehensive income	–	–	–	(4,313)	–	–	(4,313)	–	–	4,313	–
Transfer from retained profits	–	–	–	–	–	–	–	–	46,697	(46,697)	–
Others	–	–	–	–	–	–	–	–	–	1,437	1,437
Balance as at 31 December 2023	15,698,093	79,626,169	24,987,019	(382,150)	–	1,007,446	25,612,315	8,140,030	101,078	23,063,860	152,241,545

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

19 COMPANY'S STATEMENT OF CHANGES IN EQUITY *(Cont'd)*

			Capital surplus								
	Share capital	Other equity instruments	Share premium	Fair value reserve (non-recycling)	Other reserve in other comprehensive income	Other capital reserve	Subtotal	Surplus reserves	Reserve funds	Retained earnings	Total equity
Balance as at 1 January 2022	15,698,093	48,417,977	24,987,019	(324,622)	–	1,093,892	25,756,289	8,140,030	–	23,380,123	121,392,512
Profit/(loss) for the year	–	2,191,950	–	–	–	–	–	–	–	(888,113)	1,303,837
Other comprehensive loss for the year:											
Fair value changes of other equity investment instruments, net of tax	–	–	–	(9,970)	–	–	(9,970)	–	–	–	(9,970)
Total comprehensive income/(loss) for the year	–	2,191,950	–	(9,970)	–	–	(9,970)	–	–	(888,113)	1,293,867
Issue of other equity instruments	–	22,550,000	–	–	–	–	–	–	–	–	22,550,000
Redemption of other equity instruments	–	(9,000,000)	–	–	–	–	–	–	–	–	(9,000,000)
Cumulative distribution of other equity instruments	–	(2,136,535)	–	–	–	–	–	–	–	–	(2,136,535)
Transfer from retained profits	–	–	–	–	–	–	–	–	54,381	(54,381)	-
Others	–	60,312	–	–	–	(66,570)	(66,570)	–	–	–	(6,258)
Balance as at 31 December 2022	15,698,093	62,083,704	24,987,019	(334,592)	–	1,027,322	25,679,749	8,140,030	54,381	22,437,629	134,093,586

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

20 SHARE CAPITAL

	2023		2022	
	Number of shares	Share capital RMB'000	Number of shares	Share capital RMB'000
As at 1 January and 31 December				
A shares	10,997,709,919	10,997,710	10,997,709,919	10,997,710
Overseas listed foreign shares	4,700,383,440	4,700,383	4,700,383,440	4,700,383
Total	15,698,093,359	15,698,093	15,698,093,359	15,698,093

(Amounts expressed in thousands of RMB unless otherwise stated)

21 OTHER EQUITY INSTRUMENTS

(a) Other equity instruments as at 31 December 2023

Type of Instruments	Issuance Date	Category	Initial Distribution Rate	Issue Price	Number	Par Value	Initial Period	Conversion Condition	Conversion Result
Yingda Insurance Financing Plan (1st)	September 2018	Equity Instrument	5.79%	–	–	3,283,000	8 years	None	None
Yingda Insurance Financing Plan (2nd)	September 2018	Equity Instrument	5.79%	–	–	827,000	8 years	None	None
Yingda Insurance Financing Plan (3rd)	September 2018	Equity Instrument	5.79%	–	–	890,000	8 years	None	None
China Life Financing Plan (1st)	September 2019	Equity Instrument	5.05%	–	–	2,070,000	8 years	None	None
PICC Financing Plan (1st)	September 2019	Equity Instrument	5.10%	–	–	930,000	10 years	None	None
China Life Financing Plan (2nd)	October 2019	Equity Instrument	5.05%	–	–	2,260,000	8 years	None	None
PICC Financing Plan (2nd)	October 2019	Equity Instrument	5.10%	–	–	1,740,000	10 years	None	None
2019 medium-term notes (4th)	November 2019	Equity Instrument	4.53%	0.1	15,000,000	1,500,000	5 years	None	None
Bond D	March 2020	Equity Instrument	3.85%	0.1	10,000,000	1,000,000	5 years	None	None
China Life Financing Plan (3rd)	April 2020	Equity Instrument	4.75%	–	–	3,570,000	8 years	None	None
PICC Financing Plan (3rd)	April 2020	Equity Instrument	4.75%	–	–	930,000	10 years	None	None
PICC Financing Plan (4th)	August 2020	Equity Instrument	4.60%	–	–	3,000,000	10 years	None	None
2022 medium-term notes (5th)	July 2022	Equity Instrument	2.93%	0.1	20,000,000	2,000,000	3 years	None	None
2022 medium-term notes (8th)	September 2022	Equity Instrument	2.78%	0.1	5,000,000	500,000	3 years	None	None
2022 medium-term notes (9th)	October 2022	Equity Instrument	2.78%	0.1	20,000,000	2,000,000	3 years	None	None
2022 medium-term notes (10th)	October 2022	Equity Instrument	2.72%	0.1	20,000,000	2,000,000	3 years	None	None
2022 medium-term notes (11th)	November 2022	Equity Instrument	2.66%	0.1	25,000,000	2,500,000	3 years	None	None
Huaneng Trust (1st)	September 2022	Equity Instrument	2.91%	–	–	2,500,000	5 years	None	None
Huaneng Trust (2nd)	October 2022	Equity Instrument	3.06%	–	–	3,050,000	5 years	None	None
Huaneng Trust (3rd)	November 2022	Equity Instrument	3.11%	–	–	4,000,000	5 years	None	None
Huaneng Trust (4th)	November 2022	Equity Instrument	3.11%	–	–	4,000,000	5 years	None	None

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

21 OTHER EQUITY INSTRUMENTS *(Cont'd)*

(a) Other equity instruments as at 31 December 2023 *(Cont'd)*

Type of Instruments	Issuance Date	Category	Initial Distribution Rate	Issue Price	Number	Par Value	Initial Period	Conversion Condition	Conversion Result
2023 medium-term notes (1st Energy Supply Bond)	January 2023	Equity Instrument	3.93%	0.1	30,000,000	3,000,000	3 years	None	None
2023 medium-term notes (2nd Energy Supply Bond)	February 2023	Equity Instrument	3.74%	0.1	30,000,000	3,000,000	3 years	None	None
2023 medium-term notes (3rd Energy Supply Bond)	February 2023	Equity Instrument	3.55%	0.1	30,000,000	3,000,000	3 years	None	None
2023 medium-term notes (4th Energy Supply Bond)	February 2023	Equity Instrument	3.58%	0.1	25,000,000	2,500,000	3 years	None	None
2023 medium-term notes (5th Energy Supply Bond)	March 2023	Equity Instrument	3.61%	0.1	30,000,000	3,000,000	3 years	None	None
2023 medium-term notes (6th)	March 2023	Equity Instrument	3.38%	0.1	20,000,000	2,000,000	2 years	None	None
2023 medium-term notes (7th Energy Supply Bond)	March 2023	Equity Instrument	3.53%	0.1	25,000,000	2,500,000	3 years	None	None
2023 medium-term notes (8th)	April 2023	Equity Instrument	3.23%	0.1	20,000,000	2,000,000	2 years	None	None
2023 medium-term notes (9th)	April 2023	Equity Instrument	3.21%	0.1	20,000,000	2,000,000	2 years	None	None
2023 medium-term notes (10th)	April 2023	Equity Instrument	3.14%	0.1	15,000,000	1,500,000	2 years	None	None
2023 medium-term notes (11th)	June 2023	Equity Instrument	2.96%	0.1	20,000,000	2,000,000	2 years	None	None
2023medium-term notes (12th)	June 2023	Equity Instrument	2.92%	0.1	15,000,000	1,500,000	2 years	None	None
2023 medium-term notes (13th)	August 2023	Equity Instrument	2.75%	0.1	20,000,000	2,000,000	2 years	None	None
2023 medium-term notes (14th)	September 2023	Equity Instrument	3.05%	0.1	20,000,000	2,000,000	2 years	None	None
2023 medium-term notes (15th)	September 2023	Equity Instrument	3.08%	0.1	20,000,000	2,000,000	2 years	None	None
Total						78,550,000			

21 OTHER EQUITY INSTRUMENTS *(Cont'd)*

(b) Major provisions

In 2018, the Company issued three tranches of Yingda Insurance Financing Plan (the "Yingda plan") with aggregate proceeds of RMB5,000 million. The Yingda plan has no fixed period with an initial distribution rate of 5.79%. The interest of the financing plan is recorded as distributions, which are paid annually in arrears in June and December in each year and may be deferred at the discretion of the Company unless compulsory payment events (e.g. distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The Yingda plan has no fixed maturity date and is callable at the Company's discretion in whole at each distribution date after the 8th year of issuance, or the payment of the principal may be deferred at each distribution date mentioned above. The applicable distribution rate will be reset during the period from the 9th to the 11th years after the issuance, the period from the 11th to the 13th years after the issuance and the 13th year onwards after the issuance, to the higher of the initial distribution rate plus 300 basis points and the 10-year treasury bond yield in the 9th year after the issuance plus 600 basis points, the higher of the initial distribution rate plus 600 basis points and the 10-year treasury bond yield in the 11th year after the issuance plus 900 basis points and the higher of the initial distribution rate plus 900 basis points and the 10-year treasury bond yield in the 13th year after the issuance plus 1,200 basis points, respectively. As at 24 November 2021, the Company signed a supplement agreement with regard to amending the clause of the applicable distribution rate. The applicable distribution rate will be reset during the period from the 9th year after the issuance, to the basis rate plus 300 basis points, and will remain 8.79% afterwards.

In 2019, the Company issued two tranches of China Life Financing Plan (the "China Life plan") with aggregate proceeds of RMB4,330 million. The China Life plan has no fixed period with an initial distribution rate of 5.05%. The interests of the China Life plan are recorded as distributions, which are paid annually in arrears in March, June, September and December in each year and may be deferred at the discretion of the Company unless compulsory payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The China Life plan has no fixed maturity date and is callable at the Company's discretion in whole at each distribution date after the 8th year of issuance, or the payment of the principal may be deferred at each distribution date mentioned above. The applicable distribution rate will be reset during the period from the 9th year after the issuance, to the basis rate plus 300 basis points, and will remain 8.05% afterwards.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

21 OTHER EQUITY INSTRUMENTS *(Cont'd)*

(b) Major Provisions *(Cont'd)*

In 2019, the Company issued two tranches of PICC Financing Plan ("the PICC plan") with aggregate proceeds of RMB2,670 million. The PICC plan has no fixed period with an initial distribution rate of 5.10%. The interest of the PICC plan is recorded as distributions, which are paid annually in arrears in March, June, September and December in each year and may be deferred at the discretion of the Company unless compulsory payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The PICC plan has no fixed maturity date and is callable at the Company's discretion in whole at each distribution date after the 10th year of issuance, or the payment of the principal may be deferred at each distribution date mentioned above. The applicable distribution rate will be reset during the period from the 11th year after the issuance, to the basis rate plus 300 basis points, and will remain 8.10% afterwards.

In November 2019, the Company issued two tranches of medium-term notes with net proceeds of approximately RMB2,500 million and RMB1,500 million. The medium-term notes are issued at par value with initial distribution rates of 4.15% and 4.53%, respectively. The interest of the medium-term notes is recorded as distributions, which are paid annually in arrears in November in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interests and all deferred interest. The medium-term notes have no fixed maturity date and are callable at the Company's discretion at specific time, and the payment of the principal may be deferred for each renewal period to 3 and 5 years respectively. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum, and will remain it afterwards. On the first call date of 2019 medium-term notes of RMB2,500 million, the Company decided to exercise the callable option. The notes were redeemed in whole on 5 November 2022.

In March 2020, the Company issued two tranches of perpetual corporate bonds with net proceeds of approximately RMB2,000 million (Bond C) and RMB1,000 million (Bond D), respectively. The perpetual corporate bonds are issued at par value with initial distribution rates of 3.58% and 3.85%. The interest of the perpetual corporate bonds is recorded as distributions, which are paid annually in arrears in March in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (e.g. distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The perpetual corporate bonds have no fixed maturity date and are callable at the Company's discretion in whole in February 2023 and 2025 respectively, and the payment of the principal may be deferred for each renewal period to 3 and 5 years respectively. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum, and will remain it afterwards. On the first call date of Bond C in March 2023, the Company decided to exercise the callable option. Bond C was redeemed in whole on 23 March 2023.

21 OTHER EQUITY INSTRUMENTS *(Cont'd)*

(b) Major provisions *(Cont'd)*

In April 2020, the Company issued medium-term notes with net proceeds of approximately RMB3,000 million. The medium-term notes are issued at par value with an initial distribution rate of 3.18%. The interest of the medium-term notes is recorded as distributions, which are paid annually in arrears in April in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The medium-term notes have no fixed maturity date and are callable at the Company's discretion at specific time, and the payment of the principal may be deferred for each renewal period to 3 years. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum, and will remain it afterwards. On the first call date of 2020 medium-term notes of RMB3,000 million in April 2023, the Company decided to exercise the callable option. The notes were redeemed in whole on 13 April 2023.

In April 2020, the Company issued China Life Financing Plan ("the China Life plan") with proceeds of RMB3,570 million. The China Life plan has no fixed period with an initial distribution rate of 4.75%. The interest of the China Life plan is recorded as distributions, which are paid annually in arrears in March, June, September and December in each year and may be deferred at the discretion of the Company unless compulsory payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The China Life plan has no fixed maturity date and is callable at the Company's discretion in whole at each distribution date after the 8th year of issuance, or the payment of the principal may be deferred at each distribution date mentioned above. The applicable distribution rate will be reset during the period from the 9th year after the issuance, to the basis rate plus 300 basis points, and will remain 7.75% afterwards.

In April 2020, the Company issued the third tranche of the PICC plan with proceeds of RMB930 million. The PICC plan has no fixed period with an initial distribution rate of 4.75%. The interest of the PICC plan is recorded as distributions, which are paid annually in arrears in March, June, September and December in each year and may be deferred at the discretion of the Company unless compulsory payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The PICC plan has no fixed maturity date and is callable at the Company's discretion in whole at each distribution date after the 10th year of issuance, or the payment of the principal may be deferred at each distribution date mentioned above. The applicable distribution rate will be reset during the period from the 11th year after the issuance, to the basis rate plus 300 basis points, and will remain 7.75% afterwards.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

21 OTHER EQUITY INSTRUMENTS *(Cont'd)*

(b) Major provisions *(Cont'd)*

In April 2020, the Company issued a perpetual corporate bond with net proceeds of approximately RMB2,500 million (Bond E). The perpetual corporate bond is issued at par value with an initial distribution rate of 3.09%. The interest of the perpetual corporate bond is recorded as distributions, which are paid annually in arrears in April in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (e.g. distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The perpetual corporate bond has no fixed maturity date and is callable at the Company's discretion in whole in March 2023, or the payment of the principal may be deferred for each renewal period to 3 years. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum, and will remain it afterwards. On the first call date of Bond E, the Company decided to exercise the callable option. The bond was redeemed in whole on 24 April 2023.

In June 2020, the Company issued medium-term notes with net proceeds of approximately RMB3,500 million. The medium-term notes are issued at par value with an initial distribution rate of 3.60%. The interest of the medium-term notes is recorded as distributions, which are paid annually in arrears in June in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The medium-term notes have no fixed maturity date and are callable at the Company's discretion at specific time, and the payment of the principal may be deferred for each renewal period to 3 years. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum, and will remain it afterwards. On the first call date of 2020 medium-term notes in June 2023, the Company decided to exercise the callable option. The notes were redeemed in whole on 19 June 2023.

In August 2020 and September 2020, the Company issued two tranches of medium-term notes with net proceeds of approximately RMB2,000 million and RMB1,000 million, respectively. The medium-term notes are issued at par value with initial distribution rates of 3.99% and 4.40%. The interest of the medium-term notes is recorded as distributions, which are paid annually in arrears in August and September in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The medium-term notes have no fixed maturity date and are callable at the Company's discretion at specific time, and the payment of the principal may be deferred for each renewal period to 3 years, respectively. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum, and will remain it afterwards. On the first call date of the two tranches of 2020 medium-term notes in August 2023 and September 2023, the Company decided to exercise the callable options. The notes were redeemed in whole on 19 August 2023 and 16 September 2023, respectively.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

21 OTHER EQUITY INSTRUMENTS *(Cont'd)*

(b) Major provisions *(Cont'd)*

In August 2020, the Company issued the fourth tranche of the PICC plan with proceeds of RMB3,000 million. The PICC plan has no fixed period with an initial distribution rate of 4.60%. The interest of the PICC plan is recorded as distributions, which are paid annually in arrears in March, June, September and December in each year and may be deferred at the discretion of the Company unless compulsory payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The PICC plan has no fixed maturity date and is callable at the Company's discretion in whole at each distribution date after the 10th year of issuance, or the payment of the principal may be deferred at each distribution date mentioned above. The applicable distribution rate will be reset during the period from the 11th year after the issuance, to the basis rate plus 300 basis points, and will remain 7.60% afterwards.

In September 2020, the Company issued a perpetual corporate bond with net proceeds of approximately RMB3,000 million (Bond F). The perpetual corporate bond is issued at par value with an initial distribution rate of 4.38%. The interest of the perpetual corporate bond is recorded as distributions, which are paid annually in arrears in September in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (e.g. distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The perpetual corporate bond has no fixed maturity date and is callable at the Company's discretion in whole in August 2023, and the payment of the principal may be deferred for each renewal period to 3 years. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum, and will remain it afterwards. On the first call date of Bond F in September 2023, the Company decided to exercise the callable option. The bond was redeemed in whole on 11 September 2023.

In July 2022, the Company issued medium-term notes with net proceeds of approximately RMB2,000 million. The medium-term notes are issued at par value with an initial distribution rate of 2.93%. The interest of the medium-term notes is recorded as distributions, which are paid annually in arrears in October in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The medium-term notes have no fixed maturity date and are callable at the Company's discretion at specific time, and the payment of the principal may be deferred for each renewal period to 3 years. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum, and will remain it afterwards.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023

(Prepared in accordance with International Financial Reporting Standards)

(Amounts expressed in thousands of RMB unless otherwise stated)

21 OTHER EQUITY INSTRUMENTS *(Cont'd)*

(b) Major provisions *(Cont'd)*

In September 2022, the Company issued medium-term notes with net proceeds of approximately RMB500 million. The medium-term notes are issued at par value with an initial distribution rate of 2.78%. The interest of the medium-term notes is recorded as distributions, which are paid annually in arrears in October in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The medium-term notes have no fixed maturity date and are callable at the Company's discretion at specific time, and the payment of the principal may be deferred for each renewal period to 3 years. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum, and will remain it afterwards.

In September 2022, the Company issued the first tranche of the Huaneng Trust Yingfeng No.1 Single Fund Trust ("Huaneng Trust (1st)") with the proceeds of RMB2,500 million. Huaneng Trust (1st) has no fixed period with initial distribution rate of 2.91%. The interest of Huaneng Trust (1st) is recorded as distributions, which is paid annually in arrears in August in each year and may be deferred at the discretion of the Company unless compulsory payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company or liquidation or bankruptcy the Company) occur. The Company has the right to defer current interest and all deferred interest. Huaneng Trust (1st) has no fixed maturity date and is callable at the Company's discretion in whole at each distribution date after the 5th year of issuance, or the payment of the principal may be deferred at each distribution date mentioned above. The applicable distribution rate will be reset during the period from the 6th year after the issuance, to the basis rate plus 300 basis points, and will remain 5.91% afterwards.

In October 2022, the Company issued two medium-term notes with net proceeds of approximately RMB2,000 million and RMB2,000 million. The medium-term notes are issued at par value with an initial distribution rate of 2.78% and 2.72% respectively. The interest of the medium-term notes is recorded as distributions, which are paid annually in arrears in October in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The medium-term notes have no fixed maturity date and are callable at the Company's discretion at specific time, and the payment of the principal may be deferred for each renewal period to 3 years. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum, and will remain it afterwards.

21 OTHER EQUITY INSTRUMENTS *(Cont'd)*

(b) Major provisions *(Cont'd)*

In October 2022, the Company issued the second tranche of the Huaneng Trust Yingfeng No.1 Single Fund Trust ("Huaneng Trust (2nd)") with the proceeds of RMB3,050 million. Huaneng Trust (2nd) has no fixed period with initial distribution rate of 3.06%. The interest of Huaneng Trust (2nd) is recorded as distributions, which is paid annually in arrears in September in each year and may be deferred at the discretion of the Company unless compulsory payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company or liquidation or bankruptcy the Company) occur. The Company has the right to defer current interest and all deferred interest. Huaneng Trust (2nd) has no fixed maturity date and is callable at the Company's discretion in whole at each distribution date after the 5th year of issuance, or the payment of the principal may be deferred at each distribution date mentioned above. The applicable distribution rate will be reset during the period from the 6th year after the issuance, to the basis rate plus 300 basis points, and will remain 6.06% afterwards.

In November 2022, the Company issued medium-term notes with net proceeds of approximately RMB2,500 million. The medium-term notes are issued at par value with an initial distribution rate of 2.66%. The interest of the medium-term notes is recorded as distributions, which are paid annually in arrears in October in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The medium-term notes have no fixed maturity date and are callable at the Company's discretion at specific time, and the payment of the principal may be deferred for each renewal period to 3 years. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum, and will remain it afterwards.

In November 2022, the Company issued the third tranche of the Huaneng Trust Yingfeng No.1 Single Fund Trust ("Huaneng Trust (3rd)") with the proceeds of RMB4,000 million. Huaneng Trust (3rd) has no fixed period with initial distribution rate of 3.11%. The interest of Huaneng Trust (3rd) is recorded as distributions, which is paid annually in arrears in October in each year and may be deferred at the discretion of the Company unless compulsory payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company or liquidation or bankruptcy the Company) occur. The Company has the right to defer current interest and all deferred interest. Huaneng Trust (3rd) has no fixed maturity date and is callable at the Company's discretion in whole at each distribution date after the 5th year of issuance, or the payment of the principal may be deferred at each distribution date mentioned above. The applicable distribution rate will be reset during the period from the 6th year after the issuance, to the basis rate plus 300 basis points, and will remain 6.11% afterwards.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

21 OTHER EQUITY INSTRUMENTS *(Cont'd)*

(b) Major provisions *(Cont'd)*

In November 2022, the Company issued the fourth tranche of the Huaneng Trust Yingfeng No.1 Single Fund Trust ("Huaneng Trust (4th)") with the proceeds of RMB4,000 million. Huaneng Trust (4th) has no fixed period with initial distribution rate of 3.11%. The interest of Huaneng Trust (4th) is recorded as distributions, which is paid annually in arrears in October in each year and may be deferred at the discretion of the Company unless compulsory payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company or liquidation or bankruptcy the Company) occur. The Company has the right to defer current interest and all deferred interest. Huaneng Trust (4th) has no fixed maturity date and is callable at the Company's discretion in whole at each distribution date after the 5th year of issuance, or the payment of the principal may be deferred at each distribution date mentioned above. The applicable distribution rate will be reset during the period from the 6th year after the issuance, to the basis rate plus 300 basis points, and will remain 6.11% afterwards.

In January 2023, the Company issued medium-term notes with net proceeds of approximately RMB3,000 million. The medium-term notes are issued at par value with an initial distribution rate of 3.93%. The interest of the medium-term notes is recorded as distributions, which are paid annually in arrears in January in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The medium-term notes have no fixed maturity date and are callable at the Company's discretion at specific time, and the payment of the principal may be deferred for each renewal period to 3 years. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum, and will remain it afterwards.

In February 2023, the Company issued three tranches of medium-term notes with net proceeds of approximately RMB3,000 million, RMB3,000 million and RMB2,500 million. The medium-term notes are issued at par value with an initial distribution rate of 3.74%, 3.55% and 3.58% respectively. The interest of the medium-term notes is recorded as distributions, which are paid annually in arrears in February in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The medium-term notes have no fixed maturity date and are callable at the Company's discretion at specific time, and the payment of the principal may be deferred for each renewal period to 3 years. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum, and will remain it afterwards.

21 OTHER EQUITY INSTRUMENTS *(Cont'd)*

(b) Major provisions *(Cont'd)*

In March 2023, the Company issued three tranches of medium-term notes with net proceeds of approximately RMB3,000 million, RMB2,000 million and RMB2,500 million. The medium-term notes are issued at par value with an initial distribution rate of 3.61%, 3.38% and 3.53% respectively. The interest of the medium-term notes is recorded as distributions, which are paid annually in arrears in March in each year and may be deferred at the discretion of the Comp any unless compulsory distribution payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The medium-term notes have no fixed maturity date and are callable at the Company's discretion at specific time, and the payment of the principal may be deferred for each renewal period to 3 years, 2 years and 3 years respectively. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum, and will remain it afterwards.

In April 2023, the Company issued three tranches of medium-term notes with net proceeds of approximately RMB2,000 million, RMB2,000 million and RMB1,500 million. The medium-term notes are issued at par value with an initial distribution rate of 3.23%, 3.21% and 3.14% respectively. The interest of the medium-term notes is recorded as distributions, which are paid annually in arrears in April in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The medium-term notes have no fixed maturity date and are callable at the Company's discretion at specific time, and the payment of the principal may be deferred for each renewal period to 2 years. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread, and 300 basis points per annum, and will remain it afterwards.

In June 2023, the Company issued two tranches of medium-term notes with net proceeds of approximately RMB2,000 million and RMB1,500 million. The medium-term notes are issued at par value with an initial distribution rate of 2.96% and 2.92% respectively. The interest of the medium-term notes is recorded as distributions, which are paid annually in arrears in June in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The medium-term notes have no fixed maturity date and are callable at the Company's discretion at specific time, and the payment of the principal may be deferred for each renewal period to 2 years. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread, and 300 basis points per annum, and will remain it afterwards.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

21 OTHER EQUITY INSTRUMENTS *(Cont'd)*

(b) Major provisions *(Cont'd)*

In August 2023, the Company issued medium-term notes with net proceeds of approximately RMB2,000 million. The medium-term notes are issued at par value with an initial distribution rate of 2.75%. The interest of the medium-term notes is recorded as distributions, which are paid annually in arrears in August in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The medium-term notes have no fixed maturity date and are callable at the Company's discretion at specific time, and the payment of the principal may be deferred for each renewal period to 2 years. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread, and 300 basis points per annum, and will remain it afterwards.

In September 2023, the Company issued two tranches of medium-term notes with net proceeds of approximately RMB2,000 million and RMB2,000 million. The medium-term notes are issued at par value with an initial distribution rate of 3.05% and 3.08% respectively. The interest of the medium-term notes is recorded as distributions, which are paid annually in arrears in September in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The medium-term notes have no fixed maturity date and are callable at the Company's discretion at specific time, and the payment of the principal may be deferred for each renewal period to 2 years. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread, and 300 basis points per annum, and will remain it afterwards.

The perpetual corporate bonds, financing plans and medium-term notes were recorded as other equity instruments in the consolidated financial statements. During the year ended 31 December 2023, the profit attributable to holders of other equity instruments, based on the applicable distribution rates, was RMB2,916 million (2022: RMB2,192 million).

(Amounts expressed in thousands of RMB unless otherwise stated)

21 OTHER EQUITY INSTRUMENTS *(Cont'd)*

(c) Changes of other equity instruments during 2023

Type of instruments	As at 1 January 2023		Issuance		Cumulative distributions		Redemption value	Other reduction	As at 31 December 2023	
	Number	Amount	Number	Amount	Accrued distribution	Distribution payment			Number	Amount
Yingda Insurance Financing Plan (1st)	–	3,288,808	–	–	192,726	192,726	–	–	–	3,288,808
Yingda Insurance Financing Plan (2nd)	–	828,463	–	–	48,548	48,548	–	–	–	828,463
Yingda Insurance Financing Plan (3rd)	–	891,575	–	–	52,247	52,247	–	–	–	891,575
China Life Financing Plan (1st)	–	2,073,485	–	–	105,987	148,381	–	–	–	2,031,091
PICC Financing Plan (1st)	–	930,791	–	–	48,089	–	–	–	–	978,880
China Life Financing Plan (2nd)	–	2,263,804	–	–	115,715	129,536	–	–	–	2,249,983
PICC Financing Plan (2nd)	–	1,741,479	–	–	89,973	92,623	–	–	–	1,738,829
2019 medium-term notes (4th)	15,000,000	1,510,611	–	–	67,921	67,950	–	–	15,000,000	1,510,582
Bond C	20,000,000	2,055,711	–	–	15,889	71,600	2,000,000	–	–	–
Bond D	10,000,000	1,029,956	–	–	38,500	38,500	–	–	10,000,000	1,029,956
2020 medium-term notes (1st)	30,000,000	3,068,740	–	–	26,660	95,400	3,000,000	–	–	–
China Life Financing Plan (3rd)	–	3,575,653	–	–	171,930	115,715	–	–	–	3,631,868
PICC Financing Plan (3rd)	–	930,736	–	–	44,788	139,533	–	–	–	835,991
Bond E	25,000,000	2,553,546	–	–	23,704	77,250	2,500,000	–	–	–
2020 medium-term notes (2nd)	35,000,000	3,567,660	–	–	58,340	126,000	3,500,000	–	–	–
2020 medium-term notes (3nd)	20,000,000	2,029,516	–	–	50,284	79,800	2,000,000	–	–	–
PICC Financing Plan (4th)	–	3,002,300	–	–	139,917	89,726	–	–	–	3,052,491
Bond F	30,000,000	3,040,680	–	–	90,720	131,400	3,000,000	–	–	–
2020 medium-term notes (4th)	10,000,000	1,012,899	–	–	31,101	44,000	1,000,000	–	–	–
2022 medium-term notes (5th)	20,000,000	2,026,169	–	–	58,529	58,600	–	–	20,000,000	2,026,098
2022 medium-term notes (8th)	5,000,000	504,608	–	–	13,887	13,900	–	–	5,000,000	504,595
2022 medium-term notes (9th)	20,000,000	2,012,034	–	–	55,567	55,600	–	–	20,000,000	2,012,001
2022 medium-term notes (10th)	20,000,000	2,010,284	–	–	54,373	54,400	–	–	20,000,000	2,010,257
2022 medium-term notes (11th)	25,000,000	2,510,749	–	–	66,471	66,500	–	–	25,000,000	2,510,720
Huaneng Trust (1st)	–	2,520,529	–	–	72,750	68,166	–	–	–	2,525,113
Huaneng Trust (2nd)	–	3,070,200	–	–	93,330	86,682	–	–	–	3,076,848

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

21 OTHER EQUITY INSTRUMENTS *(Cont'd)*

(c) Changes of other equity instruments during 2023 *(Cont'd)*

Type of instruments	As at 1 January 2023		Issuance		Cumulative distributions				As at 31 December 2023	
	Number	Amount	Number	Amount	Accrued distribution	Distribution payment	Redemption value	Other reduction	Number	Amount
Huaneng Trust (3rd)	–	4,016,359	–	–	124,400	116,902	–	–	–	4,023,857
Huaneng Trust (4th)	–	4,016,359	–	–	124,400	112,130	–	–	–	4,028,629
2023 medium-term notes (1st Energy Supply Bond)	–	–	30,000,000	3,000,000	112,732	–	–	–	30,000,000	3,112,732
2023 medium-term notes (2nd Energy Supply Bond)	–	–	30,000,000	3,000,000	100,212	–	–	–	30,000,000	3,100,212
2023 medium-term notes (3rd Energy Supply Bond)	–	–	30,000,000	3,000,000	92,786	–	–	–	30,000,000	3,092,786
2023 medium-term notes (4th Energy Supply Bond)	–	–	25,000,000	2,500,000	76,504	–	–	–	25,000,000	2,576,504
2023 medium-term notes (5th Energy Supply Bond)	–	–	30,000,000	3,000,000	89,954	–	–	–	30,000,000	3,089,954
2023 medium-term notes (6th)	–	–	20,000,000	2,000,000	55,410	–	–	–	20,000,000	2,055,410
2023 medium-term notes (7th Energy Supply Bond)	–	–	25,000,000	2,500,000	71,613	–	–	–	25,000,000	2,571,613
2023 medium-term notes (8th)	–	–	20,000,000	2,000,000	46,773	–	–	–	20,000,000	2,046,773
2023 medium-term notes (9th)	–	–	20,000,000	2,000,000	45,957	–	–	–	20,000,000	2,045,957
2023 medium-term notes (10th)	–	–	15,000,000	1,500,000	32,816	–	–	–	15,000,000	1,532,816
2023 medium-term notes (11th)	–	–	20,000,000	2,000,000	33,805	–	–	–	20,000,000	2,033,805
2023 medium-term notes (12th)	–	–	15,000,000	1,500,000	24,652	–	–	–	15,000,000	1,524,652
2023 medium-term notes (13th)	–	–	20,000,000	2,000,000	19,986	–	–	–	20,000,000	2,019,986
2023 medium-term notes (14th)	–	–	20,000,000	2,000,000	19,167	–	–	–	20,000,000	2,019,167
2023 medium-term notes (15th)	–	–	20,000,000	2,000,000	17,167	–	–	–	20,000,000	2,017,167
Total	285,000,000	62,083,704	340,000,000	34,000,000	2,916,280	2,373,815	17,000,000	–	455,000,000	79,626,169

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

22 SURPLUS RESERVES

	As at 1 January 2023 and 31 December 2023
Surplus reserves	**8,140,030**

According to the Company Law of the PRC, the Company's articles of association and board resolutions, the Company appropriates 10% of each year's net profit under PRC GAAP to the statutory surplus reserve. The Company has the option to cease making provision for such reserve when it reaches 50% of the registered share capital. Upon the approval from the relevant authorities, this reserve can be used to make up any losses incurred or to increase share capital. Except for offsetting against losses, this reserve cannot fall below 25% of the registered share after being used to increase share capital.

As the statutory surplus reserve exceeds 50% of the registered share capital in 2023, the Company made no provision for the current year.

Appropriation of discretionary surplus reserve is proposed by the Board of Directors, and approved by the general meeting of shareholders. This reserve can be used to make up any losses incurred in prior years or to increase the share capital after obtaining relevant approvals. For the years ended 31 December 2023 and 2022, no provision was made to the discretionary surplus reserve.

According to the articles of association, in distributing the Company's profits after tax for the relevant accounting year, the lower of the amounts determined in accordance with PRC GAAP and IFRSs shall be adopted. As at 31 December 2023, in accordance with PRC GAAP and IFRSs, the balances of retained earnings for the Group amounted to approximately RMB12.238 billion and RMB11.615 billion, respectively; and the balances of retained earnings for the Company amounted to RMB29.031 billion and RMB23.064 billion, respectively.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

23 DIVIDENDS OF ORDINARY SHARES AND CUMULATIVE DISTRIBUTION OF OTHER EQUITY INSTRUMENTS

(a) Dividends of ordinary shares

On 28 June 2023, upon the approval from the annual general meeting of the shareholders, the Company declared no dividend in 2022 (2021:Nil).

On 19 March 2024, the Board of Directors proposed a cash dividend of RMB0.20 (inclusive of tax) for each ordinary share amounting to RMB3,140 million for the year of 2023. This proposal is subject to the approval of the shareholders at the annual general meeting.

(b) Cumulative distribution of other equity instruments

The other equity instruments were recorded as equity in the consolidated financial statements. For the year ended 31 December 2023, the net profit attributable to holders of other equity instruments, based on the applicable interest rates, was RMB2,916 million, and the cumulative distribution paid in 2023 was RMB2,374 million.

24 LONG-TERM LOANS

Long-term loans comprised the following:

	As at 31 December	
	2023	2022
Loans from Huaneng Group and its subsidiaries (a)	**15,052,662**	8,342,593
Bank loans and other loans (b)	**168,371,759**	162,464,922
	183,424,421	170,807,515
Less: Current portion of long-term loans	**21,076,582**	19,129,989
Total	**162,347,839**	151,677,526

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

24 LONG-TERM LOANS *(Cont'd)*

(a) Loans from Huaneng Group and its subsidiaries

Details of loans from Huaneng Group and its subsidiaries are as follows:

	As at 31 December 2023				
	Original currency '000	RMB equivalent	Less: Current portion	Non-current portion	Annual interest rate
Loans from Huaneng Group					
Unsecured					
RMB					
– Variable rate	912,510	912,510	1,197	911,313	4.30%
– Fixed rate	67,079	67,079	67,079	–	3.86%
Loans from Huaneng Finance					
Unsecured					
RMB					
– Variable rate	9,318,246	9,318,246	521,226	8,797,020	2.05%-4.40%
– Fixed rate	1,569,577	1,569,577	72,327	1,497,250	2.25%-3.86%
Loans from Tiancheng Financial Leasing					
Secured					
RMB					
– Variable rate	1,495,078	1,495,078	14,550	1,480,528	2.73%-4.17%
– Fixed rate	356,065	356,065	143,585	212,480	3.16%-4.65%
Loans from Huaneng Group Hong Kong Asset Management Co., Ltd. ("Hong Kong Asset Management")					
Unsecured					
US$					
– Variable rate	187,902	1,334,107	1,674	1,332,433	3.85%-7.59%
Total		15,052,662	821,638	14,231,024	

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

24 LONG-TERM LOANS *(Cont'd)*

(a) Loans from Huaneng Group and its subsidiaries *(Cont'd)*

Details of loans from Huaneng Group and its subsidiaries are as follows: *(Cont'd)*

	As at 31 December 2022				
	Original currency '000	RMB equivalent	Less: Current portion	Non-current portion	Annual interest rate
Loans from Huaneng Group					
Unsecured					
RMB					
– Variable rate	833,925	833,925	392	833,533	4.30%-4.65%
– Fixed rate	67,079	67,079	79	67,000	3.86%
Loans from Huaneng Finance					
Unsecured					
RMB					
– Variable rate	4,770,613	4,770,613	826,036	3,944,577	2.05%-4.40%
– Fixed rate	733,423	733,423	145,923	587,500	3.20%-4.28%
Loans from Tiancheng Financial Leasing					
Secured					
RMB					
– Variable rate	305,436	305,436	46	305,390	3.80%-4.46%
– Fixed rate	317,811	317,811	18,860	298,951	3.45%-4.65%
Loans from Huaneng Group Hong Kong Asset Management Co., Ltd. ("Hong Kong Asset Management")					
Unsecured					
US$					
– Variable rate	188,712	1,314,306	12,235	1,302,071	3.85%-6.75%
Total		8,342,593	1,003,571	7,339,022	

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

24 LONG-TERM LOANS *(Cont'd)*

(b) Bank loans and other loans

Details of bank loans and other loans are as follows:

	As at 31 December 2023				
	Original currency '000	RMB equivalent	Less: Current portion	Non-current portion	Annual interest rate
Secured					
RMB					
– Fixed rate	226,768	226,768	39,268	187,500	4.66%
– Variable rate	6,137,894	6,137,894	889,141	5,248,753	2.50%-4.95%
S$					
– Variable rate	125,933	677,168	141,589	535,579	4.40%
Unsecured					
RMB					
– Fixed rate	6,894,169	6,894,169	873,391	6,020,778	1.75%-4.75%
– Variable rate	145,036,554	145,036,554	14,748,970	130,287,584	1.00%-4.95%
US$					
– Fixed rate	302,443	2,147,348	2,147,348	–	3.50%
– Variable rate	884,014	6,276,501	993,741	5,282,760	4.63%
S$					
– Variable rate	162,991	876,434	413,976	462,458	4.40%-4.70%
€					
– Fixed rate	227	1,784	1,784	–	2.00%-2.15%
JPY					
– Fixed rate	1,934,532	97,139	5,736	91,403	0.75%
Total		168,371,759	20,254,944	148,116,815	

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

24 LONG-TERM LOANS *(Cont'd)*

(b) Bank loans and other loans *(Cont'd)*

Details of bank loans and other loans are as follows: *(Cont'd)*

	As at 31 December 2022				
	Original currency '000	RMB equivalent	Less: Current portion	Non-current portion	Annual interest rate
Secured					
RMB					
– Fixed rate	559,347	559,347	40,347	519,000	3.15%-4.66%
– Variable rate	8,126,376	8,126,376	1,716,202	6,410,174	2.15%-4.95%
S$					
– Variable rate	129,875	673,155	20,655	652,500	4.40%
Unsecured					
RMB					
– Fixed rate	6,387,039	6,387,039	603,001	5,784,038	1.82%-4.75%
– Variable rate	132,509,708	132,509,708	14,277,235	118,232,473	1.75%-4.90%
US$					
– Fixed rate	302,853	2,109,248	20,510	2,088,738	3.50%
– Variable rate	1,002,989	6,985,420	1,120,414	5,865,006	3.75%-4.63%
S$					
– Variable rate	962,611	4,989,308	305,511	4,683,797	4.40%-4.70%
€					
– Fixed rate	2,455	18,226	16,540	1,686	2.00%-2.15%
JPY					
– Fixed rate	2,043,796	107,095	6,003	101,092	0.75%
Total		162,464,922	18,126,418	144,338,504	

(c) Other disclosures in relation to the Group's long-term loans

As at 31 December 2023, long-term loans of approximately RMB4,218 million were secured by future revenue from the electricity or heat business (31 December 2022: RMB4,838 million). As at 31 December 2022, long-term loans of approximately RMB461 million were secured by equity interests of the Company and its subsidiaries and were repaid in total as at 31 December 2023. As at 31 December 2022, long-term loans of approximately RMB50 million were secured by carbon emission quota and were repaid in total as at 31 December 2023.

As at 31 December 2023, long-term loans of RMB4,675 million (31 December 2022: RMB4,633 million) were secured by certain property, plant and equipment with a net book value amounting to approximately RMB6,543 million (31 December 2022: RMB6,984 million).

24 LONG-TERM LOANS *(Cont'd)*

(c) Other disclosures in relation to the Group's long-term loans *(Cont'd)*

Certain subsidiaries of the Group had sales and leaseback agreements with Tiancheng Financial Leasing and other financial leasing companies. According to the agreements, these subsidiaries have an option to buy back the equipment at a nominal price (RMB1) when the lease term expires. The substance of the transaction was to obtain financing secured by the relevant assets within the leasing period. As at 31 December 2023, the equipment mentioned above had total carrying amounts of RMB1,924 million and RMB4,619 million (31 December 2022: RMB1,152 million and RMB5,832 million) respectively, which were recognised in property, plant and equipment.

As at 31 December 2022, long-term loans of approximately RMB15 million were guaranteed by Huaneng Group and were repaid in total as 31 December 2023.

As at 31 December 2022, the Company provided guarantees for long-term loans of approximately RMB3,109 million of the Company's wholly owned subsidiary Tuas Power which were repaid in total as at 31 December 2023. As at 31 December 2023, the Company provided guarantees for long-term loans of approximately RMB917 million of the Company's domestic subsidiaries (31 December 2022: RMB237 million).

As at 31 December 2023, long-term loans of approximately RMB97 million (31 December 2022: RMB107 million) were guaranteed by Enshi Finance Bureau of Hubei Province.

As at 31 December 2023, long-term loans of approximately RMB92 million (31 December 2022: approximately RMB106 million) were guaranteed by Tangyin County Modern Agricultural Investment Co., Ltd.

As at 31 December 2023, long-term loans of approximately RMB199 million (approximately US$28 million) (31 December 2022: RMB199 million (approximately US$29 million)) were guaranteed by Shandong Power.

As at 31 December 2023, long-term loans of approximately RMB6,277 million (31 December 2022: RMB6,766 million) were guaranteed by Shandong Power, China Export & Credit Insurance Corporation and Jining Chengtou Holding Group Co., Ltd. ("Jining Chengtou") at the liability ratios of 17.5%, 65.0% and 17.5% respectively (31 December 2022: Shandong Power, China Export & Credit Insurance Corporation and Jining Chengtou at the liability ratios of 17.5%, 65.0% and 17.5% respectively).

As at 31 December 2023, long-term loans of approximately RMB1,135 million (31 December 2022: RMB1,116 million) were guaranteed by Shandong Power and Jining Chengtou at the liability ratios of 50.0% and 50.0% respectively (31 December 2022: Shandong Power and Jining Chengtou at the liability ratios of 50.0% and 50.0% respectively).

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

24 LONG-TERM LOANS *(Cont'd)*

(c) Other disclosures in relation to the Group's long-term loans *(Cont'd)*

The maturity of long-term loans is as follows:

	Loans from Huaneng Group and its subsidiaries As at 31 December		Bank loans and other loans As at 31 December	
	2023	2022	**2023**	2022
Within 1 year	**821,638**	1,003,571	**20,254,944**	18,126,418
After 1 year but within 2 years	**906,962**	1,586,026	**35,329,423**	29,329,077
After 2 years but within 5 years	**9,050,196**	2,066,164	**47,874,694**	61,589,870
After 5 years	**4,273,866**	3,686,832	**64,912,698**	53,419,557
	15,052,662	8,342,593	**168,371,759**	162,464,922
Less: amount due within 1 year included in current liabilities	**821,638**	1,003,571	**20,254,944**	18,126,418
Total	**14,231,024**	7,339,022	**148,116,815**	144,338,504

The maturity profile of the Group's long-term loans as at the end of the reporting period, based on the contractual undiscounted payments, is as follows:

	As at 31 December	
	2023	2022
Within 1 year	**27,109,219**	24,227,399
After 1 year but within 2 years	**40,869,206**	35,505,690
After 2 years but within 5 years	**65,513,551**	72,096,135
After 5 years	**87,372,790**	71,470,025
Total	**220,864,766**	203,299,249

(Amounts expressed in thousands of RMB unless otherwise stated)

25 LONG-TERM BONDS

Outstanding corporate bonds, medium-term notes and debt financing instruments (including long-term bonds due within one year) of the Group as at 31 December 2023 are summarised as follows:

Type of Instruments	Face Value	Issuance Date	Initial Period	Initial Distribution Rate	Effective Rate	Issue Price	Balance as at 31 December 2022	Issued Amount	Interest	Amortisation	Repayment	Foreign Exchange Gain	Foreign Currency Translation Differences	Interest Payable	Balance as at 31 December 2023
2016 1st corporate bonds (10 years)	1,200,000	June 2016	10 years	3.98%	3.98%	1,200,000	1,226,454	-	47,688	11	(47,760)	-	-	26,359	1,226,393
2017 1st medium-term notes (5 years)	5,000,000	July 2017	5 years	4.69%	4.90%	5,000,000	8,962	-	-	(8,962)	-	-	-	-	-
2018 2nd medium-term notes (3 years)	2,000,000	July 2018	3 years	4.41%	4.56%	2,000,000	2,799	-	-	(2,799)	-	-	-	-	-
2018 2nd corporate bonds (10 years)	5,000,000	September 2018	10 years	5.05%	5.05%	5,000,000	5,078,254	-	252,287	30	(252,500)	-	-	77,958	5,078,071
2019 1st corporate bonds (10 years)	2,300,000	April 2019	10 years	4.70%	4.70%	2,300,000	2,374,962	-	107,894	14	(108,100)	-	-	74,725	2,374,770
2019 1st medium-term notes (5 years)	1,500,000	July 2019	5 years	3.85%	3.96%	1,500,000	1,524,031	-	57,679	1,435	(57,750)	-	-	26,193	1,525,395
2020 SinoSing oversea bonds (5 years)	2,108,865	February 2020	5 years	2.25%	2.32%	2,108,865	2,100,246	-	47,662	2,446	(46,996)	(40,288)	78,218	17,809	2,141,288
2020 SinoSing oversea bonds (10 years)	2,108,865	February 2020	10 years	2.63%	2.72%	2,108,865	2,094,973	-	55,602	1,936	(54,828)	(40,288)	76,401	20,777	2,133,796
2021 1st green medium-term notes (3 years)	1,000,000	February 2021	3 years	3.45%	3.66%	1,000,000	1,032,499	-	34,500	1,887	(34,500)	-	-	30,814	1,034,386
2021 2nd green medium-term notes (3 years)	2,500,000	April 2021	3 years	3.35%	3.40%	2,500,000	2,560,025	-	83,586	707	(83,750)	-	-	59,495	2,560,568
2021 1st corporate bonds (3 years)	500,000	May 2021	3 years	3.35%	3.35%	500,000	510,199	-	16,750	10	(16,750)	-	-	10,188	510,209
2021 1st corporate bonds (10 years)	1,500,000	May 2021	10 years	3.97%	3.97%	1,500,000	1,536,221	-	59,550	9	(59,550)	-	-	36,219	1,536,230
2021 2nd corporate bonds (3 years)	500,000	June 2021	3 years	3.33%	3.33%	500,000	509,499	-	16,650	10	(16,650)	-	-	9,488	509,509
2021 2nd corporate bonds (10 years)	3,500,000	June 2021	10 years	3.97%	3.97%	3,500,000	3,579,184	-	138,950	21	(138,950)	-	-	79,182	3,579,205
2021 3rd corporate bonds (10 years)	1,800,000	June 2021	10 years	3.99%	3.99%	1,800,000	1,838,173	-	71,820	11	(71,820)	-	-	38,173	1,838,184
2021 1st medium-term notes (3 years)	2,000,000	August 2021	3 years	2.99%	3.01%	2,000,000	2,022,570	-	59,740	(434)	(59,800)	-	-	22,221	2,022,076
2021 2nd medium-term notes (3 years)	2,000,000	November 2021	3 years	3.07%	3.07%	2,000,000	2,006,042	-	61,384	195	(61,400)	-	-	6,207	2,006,221
2021 1st medium-term bonds (JiangSu 3 years)	300,000	December 2021	3 years	2.95%	2.95%	300,000	300,121	-	121	-	(121)	-	-	121	300,121
2022 1st medium-term bonds (10 years)	1,500,000	February 2022	10 years	3.74%	3.80%	1,500,000	1,548,175	-	56,100	714	(56,100)	-	-	47,647	1,548,889
2022 2nd medium-term bonds (3 years)	3,000,000	March 2022	3 years	2.84%	2.89%	3,000,000	3,067,588	-	85,007	1,445	(85,200)	-	-	70,534	3,068,840
2022 3rd medium-term bonds (10 years)	1,500,000	April 2022	10 years	3.70%	3.76%	1,500,000	1,539,040	-	55,394	715	(55,500)	-	-	38,516	1,539,649
2022 1st medium-term notes (JiangSu 3 years)	500,000	April 2022	3 years	2.92%	2.92%	500,000	510,000	-	10,000	-	(10,000)	-	-	10,000	510,000
2022 4th medium-term notes (2 years)	300,000	June 2022	2 years	2.37%	2.40%	300,000	303,765	-	7,100	79	(7,110)	-	-	3,730	303,834
2022 6th medium-term notes (3 years)	2,000,000	August 2022	3 years	2.40%	2.51%	2,000,000	2,014,621	-	47,945	1,918	(48,000)	-	-	19,541	2,016,484
2022 7th medium-term notes (2 years)	500,000	August 2022	2 years	2.14%	2.17%	500,000	503,980	-	10,689	131	(10,700)	-	-	3,947	504,100
Total						46,117,730	39,792,383	-	1,384,098	1,529	(1,383,835)	(80,576)	154,619	729,844	39,868,218

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

25 LONG-TERM BONDS *(Cont'd)*

Outstanding corporate bonds, medium-term notes and debt financing instruments (including long-term bonds due within one year) of the Group as at 31 December 2022 are summarized as follows:

Type of Instruments	Face Value	Issuance Date	Initial Period	Initial Distribution Rate	Effective Rate	Issue Price	Balance as at 31 December 2021	Issued Amount	Amortisation	Interest	Repayment	Foreign Exchange Gain	Foreign Currency Translation Differences	Interest Payable	Balance as at 31 December 2022
2016 1st corporate bonds (5 years)	3,000,000	June 2016	5 years	3.48%	3.48%	3,000,000	9	-	(9)	-	-	-	-	-	-
2016 1st corporate bonds (10 years)	1,200,000	June 2016	10 years	3.98%	3.98%	1,200,000	1,226,442	-	12	47,760	(47,760)	-	-	26,430	1,226,454
2017 1st medium-term notes (5 years)	5,000,000	July 2017	5 years	4.69%	4.90%	5,000,000	5,114,928	-	5,181	123,353	(5,234,500)	-	-	-	8,962
2018 2nd medium-term notes (3 years)	2,000,000	July 2018	3 years	4.41%	4.56%	2,000,000	2,799	-	-	-	-	-	-	-	2,799
2018 2nd corporate bonds (10 years)	5,000,000	September 2018	10 years	5.05%	5.05%	5,000,000	5,078,224	-	30	252,500	(252,500)	-	-	78,171	5,078,254
2019 1st corporate bonds (10 years)	2,300,000	April 2019	10 years	4.70%	4.70%	2,300,000	2,374,948	-	14	108,100	(108,100)	-	-	74,930	2,374,962
2019 2nd corporate bonds (3 years)	1,000,000	July 2019	3 years	3.55%	3.55%	1,000,000	1,017,160	-	(42)	18,382	(1,035,500)	-	-	-	-
2019 1st medium-term notes (3 years)	500,000	July 2019	3 years	3.55%	3.65%	500,000	507,807	-	266	9,677	(517,750)	-	-	-	-
2019 1st medium-term notes (5 years)	1,500,000	July 2019	5 years	3.85%	3.96%	1,500,000	1,522,587	-	1,444	57,750	(57,750)	-	-	26,264	1,524,031
2020 SinoSing oversea bonds (5 years)	2,108,865	February 2020	5 years	2.25%	2.32%	2,108,865	1,920,795	-	329	47,714	(47,810)	(11,250)	190,468	17,493	2,100,246
2020 SinoSing oversea bonds (10 years)	2,108,865	February 2020	10 years	2.63%	2.72%	2,108,865	1,915,197	-	406	55,666	(55,778)	(11,250)	190,732	20,409	2,094,973
2021 1st green medium-term notes (3 years)	1,000,000	February 2021	3 years	3.45%	3.66%	1,000,000	1,030,612	-	1,887	34,500	(34,500)	-	-	30,814	1,032,499
2021 2nd green medium-term notes (3 years)	2,500,000	April 2021	3 years	3.35%	3.40%	2,500,000	2,559,318	-	707	83,750	(83,750)	-	-	59,658	2,560,025
2021 1st corporate bonds (3 years)	500,000	May 2021	3 years	3.35%	3.35%	500,000	510,189	-	10	16,750	(16,750)	-	-	10,188	510,199
2021 1st corporate bonds (10 years)	1,500,000	May 2021	10 years	3.97%	3.97%	1,500,000	1,536,212	-	9	59,550	(59,550)	-	-	36,219	1,536,221
2021 2nd corporate bonds (3 years)	500,000	June 2021	3 years	3.33%	3.33%	500,000	509,489	-	10	16,650	(16,650)	-	-	9,488	509,499
2021 2nd corporate bonds (10 years)	3,500,000	June 2021	10 years	3.97%	3.97%	3,500,000	3,579,163	-	21	138,950	(138,950)	-	-	79,182	3,579,184

(Amounts expressed in thousands of RMB unless otherwise stated)

25 LONG-TERM BONDS*(Cont'd)*

Outstanding corporate bonds, medium-term notes and debt financing instruments (including long-term bonds due within one year) of the Group as at 31 December 2022 are summarized as follows: *(Cont'd)*

Type of Instruments	Face Value	Issuance Date	Initial Period	Initial Distribution Rate	Effective Rate	Issue Price	Balance as at 31 December 2021	Issued Amount	Amortisation	Interest	Repayment	Foreign Exchange Gain	Foreign Currency Translation Differences	Interest Payable	Balance as at 31 December 2022
2021 3rd corporate bonds (10 years)	1,800,000	June 2021	10 years	3.99%	3.99%	1,800,000	1,838,162	-	11	71,820	(71,820)	-	-	38,173	1,838,173
2021 1st medium-term notes (3 years)	2,000,000	August 2021	3 years	2.99%	3.01%	2,000,000	2,022,070	-	500	59,800	(59,800)	-	-	22,282	2,022,570
2021 2nd medium-term notes (3 years)	2,000,000	November 2021	3 years	3.07%	3.07%	2,000,000	2,006,225	-	(183)	61,400	(61,400)	-	-	6,224	2,006,042
2021 1st medium-term notes															
(JiangSu 3 years)	300,000	December 2021	3 years	2.95%	2.95%	300,000	300,123	-	-	8,848	(8,850)	-	-	121	300,121
2022 1st medium-term notes (10 years)	1,500,000	February 2022	10 years	3.74%	3.80%	1,500,000	-	1,500,000	528	47,647	-	-	-	47,647	1,548,175
2022 2nd medium-term notes (3 years)	3,000,000	March 2022	3 years	2.84%	2.89%	3,000,000	-	3,000,000	(3,140)	70,728	-	-	-	70,728	3,067,588
2022 3rd medium-term notes (10 years)	1,500,000	April 2022	10 years	3.70%	3.76%	1,500,000	-	1,500,000	418	38,622	-	-	-	38,622	1,539,040
2022 1st medium-term notes															
(JiangSu 3 years)	500,000	April 2022	3 years	2.92%	2.92%	500,000	-	500,000	-	10,000	-	-	-	10,000	510,000
2022 4th medium-term notes (2 years)	300,000	June 2022	2 years	2.37%	2.40%	300,000	-	300,000	25	3,740	-	-	-	3,740	303,765
2022 6th medium-term notes (3 years)	2,000,000	August 2022	3 years	2.40%	2.51%	2,000,000	-	2,000,000	(4,974)	19,595	-	-	-	19,595	2,014,621
2022 7th medium-term notes (2 years)	500,000	August 2022	2 years	2.14%	2.17%	500,000	-	500,000	22	3,958	-	-	-	3,958	503,980
Total						50,617,730	36,572,459	9,300,000	3,482	1,467,210	(7,909,468)	(22,500)	381,200	730,336	39,792,383

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

25 LONG-TERM BONDS *(Cont'd)*

As at 31 December 2023, the Company provided guarantees for long-term bonds of approximately RMB4,250 million (31 December 2022: RMB4,179 million) of the Company's overseas subsidiary.

The maturity profile of the Group's long-term bonds as at the end of the reporting period, based on the contractual undiscounted payments, is as follows:

	As at 31 December	
	2023	2022
Within 1 year	**13,239,426**	2,110,625
After 1 year but within 2 years	**6,645,322**	1,141,603
After 2 years but within 5 years	**10,723,061**	22,427,334
After 5 years	**15,701,706**	21,252,990
Total	**46,309,515**	46,932,552

26 OTHER NON-CURRENT LIABILITIES

	As at 31 December	
	2023	2022
Government grants		
– Environmental subsidies (a)	**960,020**	1,062,278
– Other government grants	**850,586**	780,123
Contract liabilities	**2,806,335**	2,898,664
Repurchase obligation (b)	**1,305,367**	1,216,411
Other deferred income	**19,163**	27,164
Others (c)	**953,363**	883,858
Subtotal	**6,894,834**	6,868,498
Less: Current portion of other non-current liabilities	**(81,246)**	(73,694)
Total	**6,813,588**	6,794,804

(a) This primarily represented subsidies for the construction of desulphurisation equipment and other environmental protection projects.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

26 OTHER NON-CURRENT LIABILITIES *(Cont'd)*

(b) As at 31 December 2023, repurchase obligation to Hong Kong Asset Management amounted to RMB1.305 billion (31 December 2022: RMB1.216 billion).

(c) As at 31 December 2023, included in others, there were financial liabilities amounting to RMB832 million (31 December 2022: RMB792 million), which were comprised of mining right payables, guarantee deposits, poverty relief payables, etc.

The maturity profile of the Group's other non-current financial liabilities as at the end of the reporting period, based on the contractual undiscounted payments, is as follows:

	As at 31 December	
	2023	2022
Within 1 year	**82,738**	94,363
After 1 year but within 2 years	**142,882**	146,907
After 2 years but within 5 years	**156,011**	61,479
After 5 years	**525,130**	560,539
Total	**906,761**	863,288

27 ACCOUNTS PAYABLE AND OTHER LIABILITIES

Accounts payable and other liabilities comprised of:

	As at 31 December	
	2023	2022
Accounts and notes payables	**22,562,908**	24,367,693
Payables to contractors for construction	**28,239,563**	21,443,219
Retention payables to contractors	**2,015,050**	1,773,257
Consideration payables for acquiring a subsidiary	**22,842**	22,842
Others	**7,010,781**	6,865,690
Total	**59,851,144**	54,472,701

Please refer to Note 36(a)(iv) for details of accounts payable and other liabilities due to the related parties.

As at 31 December 2023, there were no notes payable (31 December 2022: RMB22 million) secured by notes receivable.

As at 31 December 2023 and 31 December 2022, the accounts and notes payables and other liabilities are non-interest-bearing.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

27 ACCOUNTS PAYABLE AND OTHER LIABILITIES *(Cont'd)*

The carrying amounts of accounts payable and other liabilities are denominated in the following currencies:

	As at 31 December	
	2023	2022
RMB	55,767,881	49,619,219
S$ (RMB equivalent)	1,327,085	2,047,597
US$ (RMB equivalent)	1,959,873	2,146,746
JPY (RMB equivalent)	109,147	16,700
PKR (RMB equivalent)	687,144	642,426
GBP (RMB equivalent)	14	13
Total	59,851,144	54,472,701

The ageing analysis of accounts and notes payable, based on the invoice date, was as follows:

	As at 31 December	
	2023	2022
Within 1 year	20,595,605	23,857,045
Between 1 to 2 years	1,630,731	368,324
Over 2 years	336,572	142,324
Total	22,562,908	24,367,693

28 TAXES PAYABLE

Taxes payable comprise:

	As at 31 December	
	2023	2022
VAT payable	755,038	759,127
Income tax payable	940,307	331,928
Others	667,683	556,318
Total	2,363,028	1,647,373

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023

(Prepared in accordance with International Financial Reporting Standards)

(Amounts expressed in thousands of RMB unless otherwise stated)

29 SHORT-TERM BONDS

Outstanding short-term bonds as at 31 December 2023 are summarised as follows:

Type of Instruments	Face Value	Issuance Date	Maturity	Issue Price	Coupon Rate	Balance as at 31 December 2022	Issued Amount	Interest	Amortisation	Repayment	Balance as at 31 December 2023
Super short-term bond (JiangSu2022 2nd)	300,000	September 2022	180 days	300,000	1.66%	301,555	–	–	–	(301,555)	–
Super short-term bond (2022 14th)	3,000,000	November 2022	61 days	3,000,000	2.09%	3,007,593	–	2,920	–	(3,010,513)	–
Super short-term bond (2022 16th)	3,000,000	December 2022	34 days	3,000,000	1.83%	3,003,629	–	1,504	–	(3,005,133)	–
Super short-term bond (2023 1st)	2,500,000	January 2023	33 days	2,500,000	1.80%	–	2,500,000	4,068	–	(2,504,068)	–
Super short-term bond (2023 2nd)	2,500,000	January 2023	32 days	2,500,000	2.05%	–	2,500,000	4,493	–	(2,504,493)	–
Super short-term bond (2023 3rd)	2,500,000	February 2023	32 days	2,500,000	1.83%	–	2,500,000	4,011	–	(2,504,011)	–
Super short-term bond (2023 4st)	2,500,000	February 2023	33 days	2,500,000	1.90%	–	2,500,000	4,295	–	(2,504,295)	–
Super short-term bond (2023 5th)	2,000,000	February 2023	30 days	2,000,000	2.02%	–	2,000,000	3,321	–	(2,003,321)	–
Super short-term bond (2023 6th)	3,000,000	March 2023	32 days	3,000,000	2.11%	–	3,000,000	5,534	–	(3,005,534)	–
Super short-term bond (2023 7th)	3,500,000	March 2023	30 days	3,500,000	2.18%	–	3,500,000	6,254	–	(3,506,254)	–
Super short-term bond (2023 8th)	5,000,000	April 2023	30 days	5,000,000	2.10%	–	5,000,000	8,607	–	(5,008,607)	–
Super short-term bond (2023 9th)	3,500,000	April 2023	30 days	3,500,000	2.13%	–	3,500,000	6,111	–	(3,506,111)	–
Super short-term bond (2023 10th)	4,000,000	May 2023	21 days	4,000,000	1.97%	–	4,000,000	4,521	–	(4,004,521)	–
Super short-term bond (2023 11th)	4,000,000	May 2023	29 days	4,000,000	1.90%	–	4,000,000	6,022	–	(4,006,022)	–
Super short-term bond (2023 12th)	4,000,000	May 2023	91 days	4,000,000	1.98%	–	4,000,000	19,692	–	(4,019,692)	–
Super short-term bond (2023 13th)	5,000,000	June 2023	34 days	5,000,000	1.79%	–	5,000,000	8,314	–	(5,008,314)	–
Super short-term bond (2023 14th)	4,000,000	July 2023	87 days	4,000,000	2.01%	–	4,000,000	19,111	–	(4,019,111)	–
Super short-term bond (2023 15th)	1,000,000	July 2023	78 days	1,000,000	2.03%	–	1,000,000	4,326	–	(1,004,326)	–
Super short-term bond (2023 16th)	3,000,000	August 2023	34 days	3,000,000	1.85%	–	3,000,000	5,156	–	(3,005,156)	–
Super short-term bond (2023 17th)	4,000,000	September 2023	37 days	4,000,000	1.89%	–	4,000,000	7,643	–	(4,007,643)	–
Super short-term bond (2023 18th)	1,500,000	October 2023	43 days	1,500,000	2.01%	–	1,500,000	3,542	–	(1,503,542)	–
Super short-term bond (2023 19th)	3,000,000	December 2023	34 days	3,000,000	2.33%	–	3,000,000	4,775	19	–	3,004,794
Super short-term bond (2023 20th)	2,500,000	December 2023	35 days	2,500,000	2.33%	–	2,500,000	3,979	16	–	2,503,995
Super short-term bond (JiangSu2023 1st)	200,000	June 2023	50 days	200,000	2.10%	–	200,000	574	–	(200,574)	–
Super short-term bond (JiangSu2023 2nd)	400,000	August 2023	37 days	400,000	2.02%	–	400,000	816	–	(400,816)	–
Super short-term bond (JiangSu2023 3rd)	300,000	September 2023	45 days	300,000	2.00%	–	300,000	738	–	(300,738)	–
Super short-term bond (JiangSu2023 4th)	500,000	October 2023	30 days	500,000	2.29%	–	500,000	939	–	(500,939)	–
Super short-term bond (JiangSu2023 5th)	600,000	November 2023	57 days	600,000	2.25%	–	600,000	1,439	–	–	601,439
Total				71,300,000		6,312,777	65,000,000	142,705	35	(65,345,289)	6,110,228

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

29 SHORT-TERM BONDS *(Cont'd)*

Outstanding short-term bonds as at 31 December 2022 are summarised as follows:

Type of Instruments	Face Value	Issuance Date	Maturity	Issue Price	Coupon Rate	Balance as at 31 December 2021	Issued Amount	Interest	Amortisation	Repayment	Balance as at 31 December 2022
Super short-term bond (2021 16th)	5,000,000	November 2021	98 days	5,000,000	2.38%	5,018,932	–	13,367	(22)	(5,032,277)	–
Super short-term bond (2021 17th)	3,000,000	December 2021	29 days	3,000,000	2.22%	3,003,542	–	2,007	(75)	(3,005,474)	–
Super short-term bond (2021 18th)	2,000,000	January 2022	58 days	2,000,000	2.10%	–	2,000,000	6,674	–	(2,006,674)	–
Super short-term bond (2022 1st)	2,000,000	January 2022	46 days	2,000,000	2.08%	–	2,000,000	5,243	–	(2,005,243)	–
Super short-term bond (2022 2nd)	2,000,000	February 2022	41 days	2,000,000	2.00%	–	2,000,000	4,493	–	(2,004,493)	–
Super short-term bond (2022 3rd)	2,000,000	February 2022	32 days	2,000,000	2.00%	–	2,000,000	3,507	–	(2,003,507)	–
Super short-term bond (2022 4th)	2,000,000	March 2022	90 days	2,000,000	2.00%	–	2,000,000	9,863	–	(2,009,863)	–
Super short-term bond (2022 5th)	3,000,000	July 2022	29 days	3,000,000	1.54%	–	3,000,000	3,671	–	(3,003,671)	–
Super short-term bond (2022 6th)	3,000,000	July 2022	32 days	3,000,000	1.54%	–	3,000,000	4,050	–	(3,004,050)	–
Super short-term bond (2022 7th)	2,000,000	July 2022	58 days	2,000,000	1.48%	–	2,000,000	4,704	–	(2,004,704)	–
Super short-term bond (2022 8th)	2,500,000	August 2022	90 days	2,500,000	1.47%	–	2,500,000	9,062	–	(2,509,062)	–
Super short-term bond (2022 9th)	2,000,000	September 2022	35 days	2,000,000	1.25%	–	2,000,000	2,397	–	(2,002,397)	–
Super short-term bond (2022 10th)	2,000,000	September 2022	37 days	2,000,000	1.25%	–	2,000,000	2,534	–	(2,002,534)	–
Super short-term bond (2022 11th)	3,000,000	October 2022	32 days	3,000,000	1.48%	–	3,000,000	3,893	–	(3,003,893)	–
Super short-term bond (2022 12th)	3,000,000	October 2022	33 days	3,000,000	1.47%	–	3,000,000	3,987	–	(3,003,987)	–
Super short-term bond (2022 13th)	3,000,000	November 2022	32 days	3,000,000	1.53%	–	3,000,000	4,024	–	(3,004,024)	–
Super short-term bond (2022 14th)	3,000,000	November 2022	61 days	3,000,000	2.09%	–	3,000,000	7,558	35	–	3,007,593
Super short-term bond (2022 15th)	2,000,000	November 2022	30 days	2,000,000	1.73%	–	2,000,000	2,844	–	(2,002,844)	–
Super short-term bond (2022 16th)	3,000,000	December 2022	34 days	3,000,000	1.83%	–	3,000,000	3,610	19	–	3,003,629
Super short-term bond (JiangSu2021 1st)	200,000	December 2021	270 days	200,000	2.60%	200,043	–	–	–	(200,043)	–
Super short-term bond (JiangSu2022 2nd)	300,000	September 2022	180 days	300,000	1.66%	–	300,000	1,555	–	–	301,555
Total				50,000,000		8,222,517	41,800,000	99,043	(43)	(43,808,740)	6,312,777

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

30 SHORT-TERM LOANS

Short-term loans are as follows:

	As at 31 December 2023			As at 31 December 2022		
	Original currency '000	RMB equivalent	Annual interest rate	Original currency '000	RMB equivalent	Annual interest rate
Secured						
RMB						
– Fixed rate	646,380	646,380	1.06%-3.00%	1,132,149	1,132,149	1.24%-3.65%
Unsecured						
RMB						
– Fixed rate	13,628,864	13,628,864	1.75%-3.55%	21,653,365	21,653,365	1.45%-3.92%
– Variable rate	42,957,485	42,957,485	1.60%-3.20%	60,500,568	60,500,568	1.65%-4.00%
SGD						
– Variable rate	–	–	–	200	1,037	5.50%
PKR						
– Variable rate	–	–	–	9,328,289	286,378	18.01%
Total		57,232,729			83,573,497	

As at 31 December 2023, short-term loans of RMB423 million (31 December 2022: RMB361 million) represented the notes receivable that were discounted with recourse. As these notes receivable had not yet matured, the proceeds received were recorded as short-term loans.

As at 31 December 2023, short-term loans of RMB223 million (31 December 2022: RMB772 million) were secured by certain equipment with a net book value amounting to approximately RMB474 million (31 December 2022: RMB1,519 million).

As at 31 December 2022, short-term loans of RMB286 million were guaranteed by Shandong Luyi Power International Limited Company and were repaid in total as at 31 December 2023.

As at 31 December 2022, short-term loans of RMB50 million were borrowed from Hong Kong Asset Management with annual interest rates 3.30% and were repaid in total as 31 December 2023. As at 31 December 2023, short-term loans borrowed from Huaneng Finance amounted to RMB10,376 million (31 December 2022: RMB15,912 million) with annual interest rates ranging from 2.05% to 3.20% (31 December 2022: from 2.00% to 3.92%). As at 31 December 2022, short-term loans of RMB772 million were borrowed from Tiancheng Financial Leasing with annual interest rates from 3.00% to 3.60% and were repaid in total as 31 December 2023. As at 31 December 2023, short-term loans borrowed from Huaneng Group amounted to RMB1,601 million (31 December 2022: RMB250 million) with annual interest rates from 2.10% to 3.55% (31 December 2022: 2.05%).

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

31 DEFERRED INCOME TAX ASSETS AND LIABILITIES

The deferred income tax assets and liabilities are as follows:

	As at 31 December	
	2023	2022 (Restated)
Deferred income tax assets before offsetting	**6,288,746**	7,602,770
Offset amount	**(2,138,642)**	(1,970,061)
Deferred income tax assets after offsetting	**4,150,104**	5,632,709
Deferred income tax liabilities before offsetting	**(4,731,785)**	(4,139,902)
Offset amount	**2,138,642**	1,970,061
Deferred income tax liabilities after offsetting	**(2,593,143)**	(2,169,841)
	1,556,961	3,462,868

The gross movements in the deferred income tax accounts are as follows:

	2023	2022
Beginning of the year	**3,462,868**	2,606,993
Business combination	**–**	16,066
Disposal of other equity instrument investments	**1,438**	–
(Charged)/credited to profit or loss (Note 33)	**(1,859,676)**	723,167
(Charged)/credited to other comprehensive income	**(7,788)**	196,605
Currency translation differences	**(40,333)**	(79,963)
Other	**452**	–
End of the year	**1,556,961**	3,462,868

(Amounts expressed in thousands of RMB unless otherwise stated)

31 DEFERRED INCOME TAX ASSETS AND LIABILITIES *(Cont'd)*

The movements in deferred income tax assets and liabilities during the year, without taking into consideration the offsetting of balances within the same tax jurisdictions, are as follows:

Deferred income tax assets:

	Hedging reserve	Fair value losses	Amortisation of land use rights	Provision for impairment loss	Depreciation	Accrued expenses	VAT refunds on purchases of domestically manufactured equipment	Unused tax losses	Lease liabilities (Restated)	Others	Total
As at 31 December 2021	18,671	135,677	11,806	689,317	812,193	21,316	48,202	3,636,182	18,940	909,616	6,301,920
Effect of adoption of amendments to IAS 12 (Note 2(b))	–	–	–	–	–	–	–	–	305,719	–	305,719
As at 1 January 2022 (Restated)	18,671	135,677	11,806	689,317	812,193	21,316	48,202	3,636,182	324,659	909,616	6,607,639
Business Combination	–	–	(7,564)	–	–	–	–	1,971	–	22,290	16,697
(Charged)/credited to profit or loss	–	–	(368)	(87,388)	(110,489)	311	(5,945)	1,119,705	22,655	(57,404)	881,077
(Credited) to other comprehensive income	91,343	3,323	–	–	–	–	–	–	–	–	94,666
Currency translation differences	(28)	–	–	1,660	–	–	–	–	–	1,059	2,691
As at 31 December 2022 (Restated)	109,986	139,000	3,874	603,589	701,704	21,627	42,257	4,757,858	347,314	875,561	7,602,770
As at 31 December 2022	109,986	139,000	3,874	603,589	701,704	21,627	42,257	4,757,858	5,673	875,561	7,261,129
Effect of adoption of amendments to IAS 12 (Note 2(b))	–	–	–	–	–	–	–	–	341,641	–	341,641
As at 1 January 2023 (Restated)	109,986	139,000	3,874	603,589	701,704	21,627	42,257	4,757,858	347,314	875,561	7,602,770
(Charged)/credited to profit or loss	–	–	(185)	8,390	37,620	(331)	(15,738)	(1,727,709)	497,564	(131,475)	(1,331,864)
(Charged)/credited to other comprehensive income	(22,203)	15,853	–	–	–	–	–	–	–	–	(6,350)
Currency translation differences	3,644	–	–	860	–	–	–	–	–	743	5,247
Other	–	–	–	–	–	–	–	–	18,943	–	18,943
As at 31 December 2023	91,427	154,853	3,689	612,839	739,324	21,296	26,519	3,030,149	863,821	744,829	6,288,746

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

31 DEFERRED INCOME TAX ASSETS AND LIABILITIES *(Cont'd)*

Deferred income tax liabilities:

	Hedging reserve	Fair value gains	Amortisation of land use rights	Depreciation	Power generation licence	Mining rights	Right-of- use assets (Restated)	Others	Total
As at 31 December 2021	(104,295)	(5,823)	(790,133)	(1,910,862)	(643,238)	(129,383)	(10,622)	(100,571)	(3,694,927)
Effect of adoption of amendments to IAS 12 (Note 2(b))	–	–	–	–	–	–	(305,719)	–	(305,719)
As at 1 January 2022 (Restated)	(104,295)	(5,823)	(790,133)	(1,910,862)	(643,238)	(129,383)	(316,341)	(100,571)	(4,000,646)
Business Combination	–	–	–	(157)	–	–	–	(474)	(631)
(Charged)/credited to profit or loss	–	–	89,990	(221,319)	–	–	(43,605)	17,024	(157,910)
(Credited) to other comprehensive income	101,084	855	–	–	–	–	–	–	101,939
Currency translation differences	3,211	–	–	(22,440)	(63,425)	–	–	–	(82,654)
As at 31 December 2022 (Restated)	–	(4,968)	(700,143)	(2,154,778)	(706,663)	(129,383)	(359,946)	(84,021)	(4,139,902)
As at 31 December 2022	–	(4,968)	(700,143)	(2,154,778)	(706,663)	(129,383)	(18,305)	(84,021)	(3,798,261)
Effect of adoption of amendments to IAS 12 (Note 2(b))	–	–	–	–	–	–	(341,641)	–	(341,641)
As at 1 January 2023 (Restated)	–	(4,968)	(700,143)	(2,154,778)	(706,663)	(129,383)	(359,946)	(84,021)	(4,139,902)
Disposal of other equity instrument investments	–	1,438	–	–	–	–	–	–	1,438
(Charged)/credited to profit or loss	–	–	46,531	(79,595)	–	(32,629)	(484,798)	22,679	(527,812)
(Charged)/credited to other comprehensive income	–	(1,438)	–	–	–	–	–	–	(1,438)
Currency translation differences	–	–	–	(19,116)	(26,464)	–	–	–	(45,580)
Other	–	–	–	–	–	–	(18,491)	–	(18,491)
As at 31 December 2023	–	(4,968)	(653,612)	(2,253,489)	(733,127)	(162,012)	(863,235)	(61,342)	(4,731,785)

(Amounts expressed in thousands of RMB unless otherwise stated)

31 DEFERRED INCOME TAX ASSETS AND LIABILITIES *(Cont'd)*

As at 31 December 2023 and 2022, taxable temporary differences relating to interests in equity method investees amounted to RMB5.19 billion and RMB5.36 billion, respectively. No deferred tax liabilities were recognised as at 31 December 2023 and 2022 as dividends from investments in associates and joint ventures are exempted from the PRC income tax and the Company has no plan to dispose of any of these investees in the foreseeable future.

As at 31 December 2023 and 2022, taxable temporary differences relating to the interests in foreign subsidiaries amounted to RMB4.83 billion and RMB2.38 billion, respectively. No deferred tax liabilities were recognised in respect of the tax that would be payable on the distribution of these interests as at 31 December 2023 and 2022 as the Company controls the dividend policy of the subsidiaries, and it has been determined that it is probable that the interests will not be distributed in the foreseeable future, and the Company has no plan to dispose of any of these investees in the foreseeable future.

In accordance with the accounting policy set out in Note 2(x), the Group did not recognise deferred income tax assets in respect of certain deductible temporary differences and accumulated tax losses that can be carried forward against future taxable income as follows:

	As at 31 December	
	2023	2022
Deductible temporary differences	**21,259,792**	18,604,340
Unused tax losses	**29,478,970**	30,446,809
Total	**50,738,762**	49,051,149

The expiry dates of the tax losses of the Group for which no deferred income tax assets were recognised are summarised as follows:

	As at 31 December	
	2023	2022
Year of expiry		
2023	**–**	2,607,668
2024	**1,906,355**	2,737,169
2025	**1,867,534**	1,981,365
2026	**10,773,761**	12,532,958
2027	**11,169,267**	10,587,649
2028	**3,762,053**	–
Total	**29,478,970**	30,446,809

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

32 ADDITIONAL FINANCIAL INFORMATION TO THE CONSOLIDATED STATEMENT OF FINANCIAL POSITION

As at 31 December 2023, the net current liabilities of the Group amounted to approximately RMB73,255 million (31 December 2022: RMB84,611 million). On the same date, total assets less current liabilities were approximately RMB386,317 million (31 December 2022: RMB340,888 million).

33 INCOME TAX EXPENSE

	For the year ended 31 December	
	2023	2022
Current income tax expense	**1,848,057**	881,825
Deferred income tax (Note 31)	**1,859,676**	(723,167)
Total	**3,707,733**	158,658

No Hong Kong profits tax has been provided as there were no estimated assessable profits in Hong Kong in 2023 (2022: Nil).

The Company and its PRC branches and subsidiaries are subject to income tax at 25%, except for certain PRC branches and subsidiaries that are tax exempted or taxed at preferential tax rates, as determined in accordance with the relevant PRC income tax rules and regulations for the years ended 31 December 2023 and 2022.

Electricity income in Pakistan is entitled to an income tax exemption according to Income Tax Ordinance 2001, while other income is taxable. The tax liability of subsidiaries in Pakistan would be calculated at the highest of: (i) Normal tax at the rate of 29% of taxable profit ("Normal tax"); (ii) Alternative Corporate Tax (ACT) at the rate of 17% of accounting profit; and (iii) Turn over tax at 1.25% of Revenue ("Turn over tax"). If the income tax calculated is above normal tax, it would be carried forward to subsequent years: (i) 10 years for the portion of ACT exceeding normal tax; (ii) 3 years for the portion of turnover tax exceeding normal tax. A super tax is levied on high earning persons ("taxable income"), with a tax rate of 0% to 10%, applicable on incomes defined in section 4C of Income Tax Ordinance 2001. The tax rate is 10% while income exceeds PKR 500 million.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

33 INCOME TAX EXPENSE *(Cont'd)*

The reconciliation of the effective income tax rate from the notional income tax rate is as follows:

	For the year ended 31 December	
	2023	2022
PRC statutory enterprise income tax rate	**25.00%**	25.00%
Effect of different tax rates of certain subsidiaries	**(13.65%)**	10.44%
Utilisation of previously unrecognised tax losses and deductible temporary differences	**(3.67%)**	2.60%
Unrecognised tax losses for the year	**15.72%**	(27.58%)
Unrecognised deductible temporary differences	**5.54%**	(8.87%)
Effect of non-taxable income	**0.32%**	2.36%
Effect of non-deductible expenses	**1.79%**	(3.29%)
Others	**(1.33%)**	(2.13%)
Effective tax rate	**29.72%**	(1.47%)

For the year ended 31 December 2023, the effective tax rate was proportioned by income tax expense to profit before tax (for the year ended 31 December 2022: income tax expense to loss before tax).

34 EARNINGS/(LOSSES) PER SHARE

The basic earnings/(losses) per share is calculated by dividing the consolidated net profit/(loss) attributable to the equity holders of the Company excluding distribution of other equity instruments by the weighted average number of the Company's outstanding ordinary shares during the year:

	For the year ended 31 December	
	2023	2022
Consolidated net profit/(loss) attributable to equity holders of the Company	**8,357,460**	(8,026,233)
Less: distribution of other equity instruments	**2,916,280**	2,191,950
Consolidated net profit/(loss) attributable to ordinary shareholders of the Company	**5,441,180**	(10,218,183)
Weighted average number of the Company's outstanding ordinary shares ('000) *	**15,698,093**	15,698,093
Basic and diluted earnings/(losses) per share (RMB)	**0.35**	(0.65)

* Weighted average number of ordinary shares:

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

34 EARNINGS/(LOSSES) PER SHARE *(Cont'd)*

	2023 '000	2022 '000
Issued ordinary shares at 1 January	15,698,093	15,698,093
Weighted average number of ordinary shares at 31 December	15,698,093	15,698,093

There was no dilutive effect on earnings/(losses) per share since the Company had no dilutive potential ordinary shares for the years ended 31 December 2023 and 2022.

35 NOTES TO THE CONSOLIDATED STATEMENT OF CASH FLOWS

Bank balances and cash comprise the following:

	As at 31 December	
	2023	2022
Total bank balances and cash	16,849,858	17,175,575
Less: Restricted cash	699,223	658,467
Cash and cash equivalents as at year end	16,150,635	16,517,108

The bank balances and cash of the Group are denominated in the following currencies:

	As at 31 December	
	2023	2022
RMB	13,890,937	14,400,682
S$ (RMB equivalent)	842,154	1,403,364
US$ (RMB equivalent)	410,243	866,481
PKR (RMB equivalent)	1,666,996	504,912
Others	39,528	136
Total	16,849,858	17,175,575

During the year, the Group had non-cash additions to right-of-use assets and lease liabilities of RMB4,160 million and RMB4,160 million, respectively, in respect of lease arrangements (2022: RMB1,690 million and RMB1,690 million).

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

35 NOTES TO THE CONSOLIDATED STATEMENT OF CASH FLOWS *(Cont'd)*

The table below details changes in the Group's liabilities from financing activities, including both cash and non-cash changes. Liabilities arising from financing activities are liabilities for which cash flows were, or future cash flows will be, classified in the Group's consolidated statement of cash flows as cash flows from financing activities:

Items	Loans (Notes 24, 30)	Bonds (Notes 25, 29)	Lease liabilities (Note 42)	Dividends payable
As at 1 January 2023	254,381,012	46,105,160	6,631,875	617,576
(a) Business combination	–	–	–	–
(b) Changes from financing cash flows:				
Proceeds from new bank loans	155,725,452	–	–	–
Repayment of bank loans	(169,794,926)	–	–	–
Proceeds from new bonds	–	65,000,000	–	–
Repayment of bonds	–	(65,200,000)	–	–
Payment of lease liabilities	–	–	(3,130,008)	–
Interest paid	(7,899,974)	(1,383,835)	–	–
Dividends paid to non-controlling interests of subsidiaries	–	–	–	(798,206)
Others	–	(14,889)	–	–
(c) Exchange adjustments	383,711	74,042	6,889	–
(d) Other changes:				
New leases	–	–	4,159,547	–
Interest expenses	7,244,366	1,397,968	255,306	–
Capitalised borrowing costs	617,509	–	70,438	–
2022 dividends declared	–	–	–	680,385
Cumulative distribution of other equity instruments attributable to non-controlling interests	–	–	–	54,929
As at 31 December 2023	240,657,150	45,978,446	7,994,047	554,684

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

35 NOTES TO THE CONSOLIDATED STATEMENT OF CASH FLOWS *(Cont'd)*

The table below details changes in the Group's liabilities from financing activities, including both cash and non-cash changes. Liabilities arising from financing activities are liabilities for which cash flows were, or future cash flows will be, classified in the Group's consolidated statement of cash flows as cash flows from financing activities: *(Cont'd)*

Items	Loans (Notes 24, 30)	Bonds (Notes 25, 29)	Lease liabilities (Note 42)	Dividends payable
As at 1 January 2022	245,968,240	44,794,976	6,939,367	1,041,452
(a) Business combination	579,819	–	–	–
(b) Changes from financing cash flows:				
Proceeds from new bank loans	224,196,815	–	–	–
Repayment of bank loans	(217,309,630)	–	–	–
Proceeds from new bonds	–	51,100,000	–	–
Repayment of bonds	–	(50,200,000)	–	–
Payment of lease liabilities	–	–	(2,327,866)	–
Interest paid	(9,358,911)	(1,518,208)	–	–
Dividends paid to non-controlling interests of subsidiaries	–	–	–	(1,343,510)
Others	–	(13,469)	–	–
(c) Exchange adjustments	1,230,538	358,701	17,369	–
(d) Other changes:				
New leases	–	–	1,689,566	–
Interest expenses	8,080,167	1,583,160	298,798	–
Capitalised borrowing costs	993,974	–	14,641	–
2021 dividends declared	–	–	–	919,634
As at 31 December 2022	254,381,012	46,105,160	6,631,875	617,576

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

35 NOTES TO THE CONSOLIDATED STATEMENT OF CASH FLOWS *(Cont'd)*

The total cash outflow for leases included in the consolidated statement of cash flows is as follows:

	For the year ended 31 December	
	2023	2022
Within financing activities*	**3,130,008**	2,327,866
Total	**3,130,008**	2,327,866

* During the year, the principal portion of lease liabilities paid was RMB2,804 million (2022: RMB2,014 million).

36 RELATED PARTY BALANCES AND TRANSACTIONS

The related parties of the Group that had transactions with the Group are as follows:

Names of related parties	Nature of relationship
Huaneng Group	Ultimate parent company
HIPDC	Parent company
Huaneng Group Fuel Company and its subsidiaries	An associate of the Company and also a subsidiary of Huaneng Group
Huaneng Finance	An associate of the Company and also a subsidiary of Huaneng Group
Huaneng Clean Energy Research Institute	An associate of the Company and also a subsidiary of Huaneng Group
Huaneng Changjiang Environmental Protection Technology Co., Ltd.	An associate of the Company and also a subsidiary of Huaneng Group
Hanfeng Power	An associate of the Company and also a subsidiary of Huaneng Group
Huaneng (Tianjin) Coal Gasification Power Generation Co., Ltd.	An associate of the Company and also a subsidiary of Huaneng Group
Huaneng Xiapu Nuclear Power Co., Ltd.	An associate of the Company and also a subsidiary of Huaneng Group
Huaneng Shidao Bay Nuclear Power Development Co., Ltd.	An associate of the Company and also a subsidiary of Huaneng Group
Tiancheng Financial Leasing	An associate of the Company and also a subsidiary of Huaneng Group
Shanghai Ruining Shipping Co., Ltd.	An associate of the Company and also a subsidiary of Huaneng Group
Huaneng Supply Chain Platform Technology Co., Ltd.	An associate of the Company and also a subsidiary of Huaneng Group
Shanxi Lu'an Group Zuoquan Wulihou Coal Industry Co., Ltd.	An associate of the Company
Chongqing Luoyu Environmental Protection Technology Co., Ltd.	An associate of the Company
Suzhou Sugao Renewables Service Co. Ltd.	An associate of the Company
Fujian Gulei Energy Technology Co. Ltd.	An associate of the Company

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

36 RELATED PARTY BALANCES AND TRANSACTIONS *(Cont'd)*

The related parties of the Group that had transactions with the Group are as follows: *(Cont'd)*

Names of related parties	Nature of relationship
Chongqing Huaneng Stone Powder Co. Ltd.	An associate of the Company
Luyin (Shouguang) New Energy Co. Ltd.	An associate of the Company
Taiyuan Dongshan Petrochina Kunlun Gas Co., Ltd.	An associate of the Company
Ruian Huaou Offshore wind power co., ltd	An associate of the Company
Shanghai Time Shipping Co., Ltd.	A joint venture of the Company
Huaneng Yingkou Port Limited Liability Company	A joint venture of the Company
Jiangsu Nantong Power Co., Ltd.	A joint venture of the Company
Yantai Gangneng Bulk Cargo Terminal Co., Ltd.	A joint venture of the Company
Shandong Luyi Power International Limited Company	A joint venture of the Company
Huaneng (Zhangzhou, Fujian) Energy Co., Ltd.	A joint venture of the Company
Jining Huayuan Thermal Power Co., Ltd.	A joint venture of the Company
Huaneng Chantou (Fuzhou) Heat Power Co., Ltd.	A joint venture of the Company
Zilai renewable resources technology (Nanjing) Co., Ltd.	A joint venture of the Company
Huaneng Renewables Corporation Limited and its subsidiaries	Subsidiaries of Huaneng Group
Huaneng Nuclear Power Development Co., Ltd. and its subsidiaries	Subsidiaries of Huaneng Group
Huaneng Energy & Communications Holdings Co., Ltd. and its subsidiaries	Subsidiaries of Huaneng Group
Huaneng Coal Business Sector Co., Ltd. and its subsidiaries	Subsidiaries of Huaneng Group
Huaneng Capital Services and its subsidiaries	Subsidiaries of Huaneng Group
Huaneng Group Technology Innovation Center	A subsidiary of Huaneng Group
Huaneng Real Estate Co., Ltd. and its subsidiaries	Subsidiaries of Huaneng Group
North United Power Corporation and its subsidiaries	Subsidiaries of Huaneng Group
Huaneng Lancangjiang Hydropower Co., Inc. and its subsidiaries	Subsidiaries of Huaneng Group
Huaneng Inner Mongolia Eastern Energy Co., Ltd. and its subsidiaries	Subsidiaries of Huaneng Group
Sichuan Huaneng Hydropower Development Co., Ltd and its subsidiaries	Subsidiaries of Huaneng Group
Huaneng Shanxi Power Generation Limited and its subsidiaries	Subsidiaries of Huaneng Group
Huaneng Ningxia Energy Company Ltd. and its subsidiaries	Subsidiaries of Huaneng Group
Huaneng Gansu Energy Development Company Ltd. and its subsidiaries	Subsidiaries of Huaneng Group
Huaneng Tibet Yarlung Zangbo River Hydropower Development & Investment Company Ltd. and its subsidiaries	Subsidiaries of Huaneng Group
China Hua Neng Group Hong Kong Limited and its subsidiaries	Subsidiaries of Huaneng Group
Xi'an Thermal Power Research Institute Co., Ltd. and its subsidiaries	Subsidiaries of Huaneng Group

36 RELATED PARTY BALANCES AND TRANSACTIONS *(Cont'd)*

The related parties of the Group that had transactions with the Group are as follows: *(Cont'd)*

Names of related parties	Nature of relationship
Hong Kong Asset Management	Subsidiaries of Huaneng Group
Huaneng Integrated Industry Co., Ltd and its subsidiaries	Subsidiaries of Huaneng Group
Tianjin Huaneng Yangliuqing Thermal Power Industrial Co., Ltd. and its subsidiaries	Subsidiaries of Huaneng Group
Huaneng Gongrong No.1 (Tianjin) Equity Investment Fund Partnership (Limited Partnership) and its subsidiaries	Subsidiaries of Huaneng Group
Huaneng Songyuan Power Co., Ltd.	A subsidiary of Huaneng Group
Huaneng Tendering Co., Ltd.	A subsidiary of Huaneng Group
Huaneng Caofeidian Port Co., Ltd.	A subsidiary of Huaneng Group
Beijing Changping Huaneng Training Center	A subsidiary of Huaneng Group
Huaneng Overseas Enterprise Management Limited	A subsidiary of Huaneng Group
Huaneng (Dalian) Energy And Heat Co., Ltd.	A subsidiary of Huaneng Group
Huaneng Nuclear Technology Research Institute Co., Ltd.	A subsidiary of Huaneng Group
Huangtai #8 Power Plant*	*
Other government-related enterprises**	Related parties of the Company

* Huangtai #8 Power Plant was acquired by Shandong Power, a subsidiary of the Company, as at 31 December 2022. The transaction with Huangtai #8 Power Plant before the acquisition date was disclosed accordingly.

** Huaneng Group is a state-owned enterprise. In accordance with the revised IAS 24 Related Party Disclosures, government-related enterprises, other than entities under Huaneng Group, over which the PRC government has control, joint control or significant influence, are also considered as related parties of the Group ("other government-related enterprises").

The majority of the business activities of the Group are conducted with other government-related enterprises. For the purpose of the disclosure of the related party balances and transactions, the Group has established procedures to determine, to the extent possible, the identification of the ownership structure of its customers and suppliers as to whether they are government-related enterprises. However, many government-related enterprises have a multi-layered corporate structure and the ownership structures change over time as a result of transfers and privatisation programs. Nevertheless, management believes that all material related party balances and transactions with other government-related enterprises have been adequately disclosed.

In addition to the related party information shown elsewhere in these financial statements, the following is a summary of significant related party transactions entered into in the ordinary course of business between the Group and their related parties during the year and significant balances arising from related party transactions as at the year end.

All transactions with related parties were conducted at prices and on terms mutually agreed by the parties involved, and are based on normal commercial terms or better and with reference to the prevailing local market conditions.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

36 RELATED PARTY BALANCES AND TRANSACTIONS *(Cont'd)*

(a) Related party balances

(i) Cash deposits in related parties

	As at 31 December	
	2023	2022
Deposits in Huaneng Finance		
– Savings deposits	**12,578,897**	12,996,034

For the year ended 31 December 2023, the annual interest rates for these savings deposits (as included in bank balances and cash) ranged from 0.35% to 3.05% (2022: from 0.35% to 3.30%).

(ii) As described in Notes 24 and 30, certain loans of the Group were borrowed from Huaneng Group, Huaneng Finance, Tiancheng Financial Leasing and Hong Kong Asset Management.

(iii) Except for those disclosed in Notes 24 and 30, the majority of the balances with Huaneng Group, HIPDC, subsidiaries of Huaneng Group, associates, joint ventures and other related parties are unsecured and repayable within one year. As at and for the years ended 31 December 2023 and 2022, no provision was made on receivable balances from these parties.

Accounts receivable, other receivables and assets, property, plant and equipment and other non-current assets comprise the following balances due from related parties:

	As at 31 December	
	2023	2022
Due from Huaneng Group	**61,851**	36,929
Due from HIPDC	**445**	401
Due from associates	**113,364**	89,798
Due from joint ventures	**548,073**	371,933
Due from subsidiaries of Huaneng Group	**620,787**	1,652,236
Total	**1,344,520**	2,151,297

(Amounts expressed in thousands of RMB unless otherwise stated)

36 RELATED PARTY BALANCES AND TRANSACTIONS *(Cont'd)*

(a) Related party balances *(Cont'd)*

(iv) Accounts payable and other liabilities, lease liabilities and other non-current liabilities comprise the following balances due to related parties:

	As at 31 December	
	2023	2022
Due to Huaneng Group	**31,502**	16,746
Due to HIPDC	**1,787**	24,668
Due to associates	**122,368**	101,057
Due to joint ventures	**236,899**	141,032
Due to subsidiaries of Huaneng Group	**15,213,483**	16,175,270
Total	**15,606,039**	16,458,773

(v) As at 31 December 2023, included in long-term loans (including current portion) and short-term loans are loans payable to other government-related financial institutions amounting to RMB205.2 billion (31 December 2022: RMB217.7 billion).

The balances with government-related enterprises also included substantially all the accounts receivable due from domestic power plants of government-related power grid companies, the bank deposits placed with government-related financial institutions as well as accounts payable and other payables arising from the purchases of coal and property, plant and equipment construction and related labour services provided by other government-related enterprises. Except for bank deposits, these balances are unsecured and the majority of the balances are receivable/repayable within one year.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

36 RELATED PARTY BALANCES AND TRANSACTIONS *(Cont'd)*

(b) Related party transactions

(i) Procurement of goods and receiving services

	For the year ended 31 December	
	2023	2022
Huaneng Group		
Technical services and engineering contracting services	**800**	140
Other purchases	**551**	545
Subsidiaries of Huaneng Group		
Purchase of coal and transportation services	**78,078,962**	91,835,902
Purchase of technical services, engineering contracting services and others	**2,336,193**	1,960,858
Purchase of ancillary equipment and parts	**406,255**	785,072
Purchase of heat	**84,113**	56,792
Other purchases	**131,666**	97,214
Purchase of carbon emission reduction resources and related services	**58,134**	57,049
Joint ventures of the Group		
Purchase of coal and transportation services	**670,768**	643,466
Purchase of technical services, engineering contracting services and others	**4,400**	3,226
Associates of the Group		
Purchase of equipment	**21,806**	16,649
Purchase of coal and transportation services	**1,547,120**	1,486,520

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

36 RELATED PARTY BALANCES AND TRANSACTIONS *(Cont'd)*

(b) Related party transactions *(Cont'd)*

(ii) Sales of goods and providing services

	For the year ended 31 December	
	2023	2022
Huaneng Group		
Services provided	129,539	121,105
HIPDC		
Services provided	423	376
Subsidiaries of Huaneng Group		
Service provided	258,217	286,370
Sales of heat	228,821	63,620
Sales of coal and transportation services	15,780	14,822
Sales of carbon emission reduction resources and related services	278,611	463,900
Joint ventures of the Group		
Service provided	107,749	101,237
Other sales	172	4,552
Sales of coal and transportation services	13,017	–
Associates of the Group		
Sales of heat	62,614	38,915
Other sales	4,212	1,207

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

36 RELATED PARTY BALANCES AND TRANSACTIONS *(Cont'd)*

(b) Related party transactions *(Cont'd)*

(iii) Other related party transactions

(1) Rental charge paid

Lessor name	Types of leased assets	Rental charges for short-term leases and leases of low-value assets for simplified processing (if applicable) For the year ended 31 December		Variable lease payments not included in the measurement of the lease liability (if applicable) For the year ended 31 December		Rent paid For the year ended 31 December		Assume interest expense on lease liability For the year ended 31 December		Increase in right-of-use assets For the year ended 31 December	
		2023	2022	2023	2022	2023	2022	2023	2022	2023	2022
HIPDC	Transmission and transformation facilities	47,947	47,947	-	-	-	-	-	-	-	-
HIPDC	Land	-	-	-	-	1,389	2,104	962	1,487	-	-
HIPDC	Office building	7,959	7,959	-	-	-	-	-	-	-	-
Huaneng Group	Office building	1,234	-	-	-	-	-	-	-	-	-
Subsidiaries of Huaneng Group	Office building	58,809	55,231	-	-	78,982	40,551	6,640	964	205,266	2,106
Subsidiaries of Huaneng Group	Mechanical equipment	-	-	-	-	1,233,924	1,391,684	44,252	99,989	-	763,958
Total		115,949	111,137	-	-	1,314,295	1,434,339	51,854	102,440	205,266	766,064

(Amounts expressed in thousands of RMB unless otherwise stated)

36 RELATED PARTY BALANCES AND TRANSACTIONS *(Cont'd)*

(b) Related party transactions *(Cont'd)*

(iii) Other related party transactions *(Cont'd)*

		For the year ended 31 December	
		2023	2022
(2)	**Rental income received**		
	Huaneng Group	1,130	612
	A joint venture of the Group	6,612	6,612
	Subsidiaries of Huaneng Group	13,662	9,120
	Huangtai #8 Power Plant	–	14,952
(3)	**Net loans received (repaid to)/from**		
	Huaneng Group	77,780	(3,430,692)
	Subsidiaries of Huaneng Group	1,568,524	7,042,913
	A joint venture of the Group	–	(150,000)
(4)	**Interest expense on loans**		
	Huaneng Group	41,656	7,181
	Subsidiaries of Huaneng Group	714,045	635,675
(5)	**Interest income on loans**		
	Joint ventures of the Group	3,208	3,860
(6)	**Recover the entrusted loans**		
	A joint venture of the Group	2,000	3,000
(7)	**Capital injection from**		
	Subsidiaries of Huaneng Group	1,440,373	2,603,222
(8)	**Capital injection to**		
	Subsidiaries of Huaneng Group	556,000	156,750
	Associates of the Group	23,000	68,000
	Joint ventures of the Group	53,028	10,000

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

36 RELATED PARTY BALANCES AND TRANSACTIONS *(Cont'd)*

(b) Related party transactions *(Cont'd)*

(iii) Other related party transactions *(Cont'd)*

	For the year ended 31 December	
	2023	2022
(9) Entrusted management fee		
Huaneng Group	14,118	13,697
Subsidiaries of Huaneng Group	1,420	–
(10) Trusteeship management income		
Huaneng Group	5,595	5,259
Subsidiaries of Huaneng Group	187,855	21,289
(11) Net operating advances received from an investee with significant influence		
Huangtai #8 Power Plant	–	40,020
(12) Interest expense on trust loans		
Subsidiaries of Huaneng Group	414,880	73,449
(13) Disposal of Associate of the Group		
Subsidiaries of Huaneng Group	4,203,481	–

Transactions with government-related enterprises

For the years ended 31 December 2023 and 2022, apart from the overseas segment, the Group sold substantially all its products to local government-related power grid companies. Please refer to Note 5 for details of sales information to major power grid companies.

For the years ended 31 December 2023 and 2022, other collectively-significant transactions with government-related enterprises also included a large portion of domestic fuel purchases, property, plant and equipment construction and related labour employed.

(c) Balance of guarantees

	As at 31 December	
	2023	2022
Long-term loans guaranteed by		
– Huaneng Group	–	14,927
Short-term loans guaranteed by		
– Joint ventures of the Group	–	286,378
Guarantee provided for		
– Subsidiaries of Huaneng Group	420,310	–

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

36 RELATED PARTY BALANCES AND TRANSACTIONS *(Cont'd)*

(d) Pre-tax benefits and social insurance of key management personnel

	For the year ended 31 December	
	2023	2022
Salaries	6,862	8,357
Pension	1,204	1,691
Total	8,066	10,048

(e) Related party commitments

Related party commitments which were contracted but not recognised in the consolidated statement of financial position as at the end of the reporting period are as follows:

(i) Capital commitments

	As at 31 December	
	2023	2022
Huaneng group	4,860	–
Subsidiaries of Huaneng Group	2,316,617	3,230,911

(ii) Fuel purchase and transportation commitments

	As at 31 December	
	2023	2022
Subsidiaries of Huaneng Group	3,656,242	2,738,965
A joint venture of the Group	179,328	10,457
Associates of the Group	948,306	–

(f) Applicability of the Listing Rules relating to connected transactions

The related party transactions with HIPDC, Huaneng Group and its subsidiaries in respect of the purchase of coal and transportation services, equipment, technical services and engineering contracting services, leasing rental and interest expenses incurred by the Group as disclosed in Note 36(b) constitute connected transactions or continuing connected transactions as defined in Chapter 14A of the Listing Rules. The disclosures required by Chapter 14A of the Listing Rules are included in the section "Connected transactions" of the Directors' Report of the Group for the year ended 31 December 2023.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

37 LABOUR COST

Other than the salaries and staff welfare, the labour cost of the Group mainly comprises the following:

All PRC employees of the Group are entitled to a monthly pension upon their retirement. The PRC government is responsible for the pension liability to these employees on retirement. The Group is required to make contributions to the publicly administered retirement plan for its PRC employees at a specified rate, currently set at 14% to 16% (2022: 14% to 20%) of the basic salary of the PRC employees. The retirement plan contributions paid by the Group for the year ended 31 December 2023 were approximately RMB1,589 million (2022: RMB1,504 million), including approximately RMB1,564 million (2022: RMB1,463 million) charged to profit or loss.

In addition, the Group has also implemented a supplementary defined contribution retirement scheme for PRC employees. Under this scheme, the employees are required to make a specified contribution based on the number of years of service with the Group, and the Group is required to make a contribution equal to two to four times the employees' contributions. The employees will receive the total contributions upon their retirement. For the year ended 31 December 2023, the contributions to the supplementary defined contribution retirement scheme paid by the Group amounted to approximately RMB881 million (2022: RMB827 million), including approximately RMB867 million (2022: RMB805 million) charged to profit or loss.

SinoSing Power and its subsidiaries in Singapore appropriate at a specified rate, currently set at 7.5% to 17% (2022: 7.5% to 17%) of the basic salary to central provident funds in accordance with the local government regulations. The contributions made by SinoSing Power and its subsidiaries for the year ended 31 December 2023 amounted to approximately RMB41.95 million (2022: RMB30.00 million), all of which were charged to profit or loss.

The Group has no further obligation for post-retirement benefits beyond the annual contributions made above.

In addition, the Group also makes contributions of housing funds and social insurance to the social security institutions at specified rates of the basic salary and no more than the upper limit. The expenditures are allocated to the cost of assets or charged to profit or loss. The housing funds and social insurance contributions paid by the Group amounted to approximately RMB1,399 million (2022: RMB1,317 million) and RMB1,433 million (2022: RMB1,105 million) for the year ended 31 December 2023 including approximately RMB1,375 million (2022: RMB1,285 million) and RMB1,381 million (2022: RMB1,070 million) charged to profit or loss, respectively.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

37 LABOUR COST *(Cont'd)*

Five highest paid individuals

The five individuals whose emoluments were the highest in the Group for the year included one supervisor (2022: one) whose emoluments are reflected in the analysis presented in Note 38. The emoluments payable to the remaining four (2022: four) highest paid individuals during the year (within the range of RMB1.0 million to RMB2.0 million) are as follows:

	For the year ended 31 December	
	2023	2022
Basic salaries	651	777
Performance bonuses	3,612	2,780
Pension	748	702
	5,011	4,259

The remuneration disclosed above includes pre-tax salary income and the Group's contribution on pension insurance, enterprise annuity and housing funds and other items.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

38 DIRECTORS', SUPERVISORS' AND SENIOR MANAGEMENT'S EMOLUMENTS

(a) Pre-tax benefits and social insurance of directors and supervisors

The remuneration of every director and supervisor of the Company for the year ended 31 December 2023 is set out below:

	Fees	Basic salaries	Performance bonuses	Pension	Total
Name of director					
Mr. Zhao Keyu[1]	–	188	627	120	935
Mr. Wang Kui[2]	–	–	–	–	–
Mr. Huang Lixin[3]	–	–	–	–	–
Mr. Wang Jianfeng[3]	–	–	–	–	–
Mr. Du Daming[3]	–	–	–	–	–
Mr. Zhou Yi[3]	–	–	–	–	–
Mr. Li Lailong[3]	–	–	–	–	–
Mr. Cao Xin[3]	–	–	–	–	–
Mr. Ding Xuchun[3]	–	–	–	–	–
Mr. Li Haifeng	–	–	–	–	–
Mr. Lu Fei[4]	–	–	–	–	–
Mr. Huang Jian[4]	–	–	–	–	–
Mr. Teng Yu[4]	–	–	–	–	–
Mr. Mi Dabin[4]	–	–	–	–	–
Mr. Cheng Heng[4]	–	–	–	–	–
Mr. Lin Chong[4]	–	–	–	–	–
Mr. Xu Mengzhou[4]	300	–	–	–	300
Mr. Liu Jizhen[4]	300	–	–	–	300
Mr. Xu Haifeng[4]	300	–	–	–	300
Mr. Zhang Xianzhi[4]	300	–	–	–	300
Mr. Xia Qing	300	–	–	–	300
Mr. He Qiang[3]	–	–	–	–	–
Mrs. Zhang Liying[3]	–	–	–	–	–
Mrs. Zhang Shouwen[3]	–	–	–	–	–
Mrs. Dang Ying[3]	–	–	–	–	–
Sub-total	1,500	188	627	120	2,435

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

38 DIRECTORS', SUPERVISORS' AND SENIOR MANAGEMENT'S EMOLUMENTS *(Cont'd)*

(a) Pre-tax benefits and social insurance of directors and supervisors *(Cont'd)*

The remuneration of every director and supervisor of the Company for the year ended 31 December 2023 is set out below: *(Cont'd)*

	Fees	Basic salaries	Performance bonuses	Pension	Total
Name of supervisor					
Mr. Li Shuqing[4]	–	–	–	–	–
Mr. Mu Xuan[4]	–	–	–	–	–
Mr. Cao Shiguang[3]	–	–	–	–	–
Mrs. Kou Yaozhou[3]	–	–	–	–	–
Mr. Song Taiji[3]	–	–	–	–	–
Mr. Gu Jianguo[4]	–	–	–	–	–
Mr. Xu Jianping[4]	–	108	591	123	822
Mr. Zhu Tong	–	164	901	187	1,252
Mr. Xia Aidong	–	–	–	–	–
Mr. Wang Yu[3]	–	12	132	15	159
Sub-total	–	284	1,624	325	2,233
Total	1,500	472	2,251	445	4,668

The remuneration of every director and supervisor of the Company for the year ended 31 December 2022 is set out below:

	Fees	Basic salaries	Performance bonuses	Pension	Total
Name of director					
Mr. Zhao Keyu	–	244	666	187	1,097
Mr. Zhao Ping[5]	–	183	579	138	900
Mr. Huang Jian	–	–	–	–	–
Mr. Wang Kui	–	–	–	–	–
Mr. Lu Fei	–	–	–	–	–
Mr. Teng Yu	–	–	–	–	–
Mr. Mi Dabin	–	–	–	–	–
Mr. Cheng Heng	–	–	–	–	–
Mr. Li Haifeng	–	–	–	–	–
Mr. Lin Chong	–	–	–	–	–
Mr. Xu Mengzhou	300	–	–	–	300
Mr. Liu Jizhen	300	–	–	–	300
Mr. Xu Haifeng	300	–	–	–	300
Mr. Zhang Xianzhi	300	–	–	–	300
Mr. Xia Qing	300	–	–	–	300
Sub-total	1,500	427	1,245	325	3,497

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

38 DIRECTORS', SUPERVISORS' AND SENIOR MANAGEMENT'S EMOLUMENTS *(Cont'd)*

(a) Pre-tax benefits and social insurance of directors and supervisors *(Cont'd)*

The remuneration of every director and supervisor of the Company for the year ended 31 December 2022 is set out below: *(Cont'd)*

	Fees	Basic salaries	Performance bonuses	Pension	Total
Name of supervisor					
Mr. Li Shuqing	–	–	–	–	–
Mr. Mu Xuan	–	–	–	–	–
Mr. Gu Jianguo	–	–	–	–	–
Mr. Xu Jianping	–	157	831	176	1,164
Mr. Zhu Tong	–	157	831	175	1,163
Mr. Xia Aidong	–	–	–	–	–
Sub-total	–	314	1,662	351	2,327
Total	1,500	741	2,907	676	5,824

1 Resigned on 30 Aug 2023
2 Hired on 29 Aug 2023
3 Hired on 5 Dec 2023
4 Resigned on 5 Dec 2023
5 Resigned on 26 Sep 2022

During the year, no option was granted to the directors or the supervisors (2022: nil).

During the year, no emolument was paid to the directors or the supervisors (including the five highest paid employees) as an inducement to join or upon joining the Company or as compensation for loss of office (2022: nil).

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

38 DIRECTORS', SUPERVISORS' AND SENIOR MANAGEMENT'S EMOLUMENTS *(Cont'd)*

(a) Pre-tax benefits and social insurance of directors and supervisors *(Cont'd)*

No director or supervisor had waived or agreed to waive any emoluments during the years 2023 and 2022.

The remuneration of the Company's directors, supervisors and senior management disclosed above includes pre-tax salary income and the Group's contribution on pension insurance, enterprise annuity and housing funds and other items; The remuneration of independent directors is the pre-tax amount of independent directors' allowance.

39 COMMITMENTS

(a) Capital commitments

Capital commitments mainly relate to the construction of new power projects, certain ancillary facilities and renovation projects for existing power plants. Details of such commitments are as follows:

	As at 31 December	
	2023	2022
Contracted, but not provided	**68,066,924**	52,168,613

(b) Fuel purchase commitments

As at 31 December 2023, the Group has entered into major fuel purchase commitment amounting to approximately RMB14.072 billion (31 December 2022: RMB8.445 billion).

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

39 COMMITMENTS *(Cont'd)*

(b) Fuel purchase commitments *(Cont'd)*

The Group has entered into various long-term fuel supply agreements with various suppliers in securing fuel supply for various periods. All the agreements require minimum, maximum or forecasted volume purchases and subject to certain termination provisions. Related purchase commitments are as follows:

		As at 31 December 2023	
	Periods	Purchase quantities	Estimated unit costs (RMB)
A government-related enterprise	2023-2039	2.8 million m^3/day*	3.40/m^3
A government-related enterprise	2024	37.10 million m^3/month*	2.95/m^3
	2024	4.79 million m^3/month*	2.92/m^3
	2024	37.50 million m^3/month*	2.95/m^3
A government-related enterprise	2023-2026	222million m^3/year*	2.63/m^3
Other suppliers	2024	111.52-134.02 BBtu**/day	Approximately 57,000/BBtu
	2025	138.52-148.52 BBtu**/day	approximately 63,000/BBtu
	2026	62.40-82.40 BBtu**/day	approximately 67,000/Bbtu
	2027	62.40-82.40 BBtu**/day	approximately 61,000/Bbtu
	2028	62.40-82.40 BBtu**/day	approximately 61,000/Bbtu
	2029	20.00-62.40 BBtu**/day	approximately 12,000/Bbtu
	2030	20 BBtu**/day	approximately 53,000/Bbtu

* The quantities represent the maximum volume, while others represent the minimum or forecasted volume if not specified.

** BBtu: Billion British Thermal Unit

(Amounts expressed in thousands of RMB unless otherwise stated)

40 DISPOSAL OF A SUBSIDIARY

As at 21 July 2023, Huaneng Zhanhua Co-generation Limited Company ("Zhanhua Co-generation") was bankrupted under the declaration of the People's Court of Zhanhua District in Binzhou Shandong province. Zhanhua Co-generation was not consolidated by the Group since the date of bankruptcy (21 July 2023). The net loss of the bankruptcy of Zhanhua Co-generation was RMB34 million.

The details of the net assets disposed of are as follows:

	Date of disposal
Net assets disposed of:	
Property, plant and equipment	118,755
Right-of-use assets	58,925
Inventories	796
Other receivable and assets	19,535
Cash and cash equivalents	199
Other non-current assets	82,822
Accounts payable and other liabilities	(1,912,411)
Taxes payable	(2,559)
Net assets	(1,633,938)
The Company's impairment loss of receivables due from Zhanhua Co-generation	1,668,081
Net loss on disposal	34,143

An analysis of the cash flow of cash and cash equivalents in respect of the disposal of Zhanhua Co-generation is as follows:

	Date of disposal
Cash consideration received	–
Cash and bank balances disposed of	(199)
Net outflows of cash and cash equivalents in respect of disposal of Zhanhua Co-generation	(199)

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

41 NON-CONTROLLING INTERESTS

The following table summarises the information relating to each subsidiary of the Group that has material non-controlling interests ("NCI"):

	Beijing Co-generation	Shandong Power	Liaoning Clean Power	Huagan Tianjin	Huamin Tianjin	Other individually immaterial subsidiaries	Total
NCI percentage	59%	20%	22%	80%	80%		
31 December 2023							
Non-current assets	5,377,569	60,000,170	15,408,792	3,014,713	3,841,572		
Current assets	1,709,669	17,431,332	1,890,020	1,234,879	1,159,155		
Non-current liabilities	(157,650)	(26,832,555)	(8,419,038)	(22,441)	(14,419)		
Current liabilities	(1,114,050)	(25,371,261)	(1,940,696)	(299,774)	(426,069)		
Net assets	5,815,538	25,227,686	6,939,078	3,927,377	4,560,239		
Carrying amount of NCI	3,431,198	12,706,073	1,715,663	3,656,361	3,648,218	15,433,850	40,591,363
Revenue	5,778,582	34,315,222	1,138,790	2,944,215	3,013,991		
Net profit/(loss)	533,564	(660,244)	403,156	12,188	211,481		
Total comprehensive income/(loss)	533,564	(1,341,186)	403,156	12,188	211,481		
Profit/(loss) allocated to NCI	314,803	(22,598)	23,008	11,944	169,185	(84,393)	411,949
Other comprehensive loss allocated to NCI	–	(405,414)	–	–	–	(8,632)	(414,046)
Cash flows from operating activities	866,198	5,922,749	34,367	471,462	453,238		
Cash flows from investing activities	(521,866)	(7,309,906)	(2,585,464)	(45,028)	(1,533,394)		
Cash flows from financing activities	(339,032)	2,127,940	2,791,278	(3,866)	1,530,290		
Net increase/(decrease) in cash and cash equivalents	5,300	740,783	240,181	422,568	450,134		
Dividends paid to NCI	200,029	83,450	17,673	3,583	3,469		

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

41 NON-CONTROLLING INTERESTS *(Cont'd)*

The following table summarises the information relating to each subsidiary of the Group that has material non-controlling interests ("NCI"): *(Cont'd)*

	Beijing Co-generation	Shandong Power	Liaoning Clean Power	Huagan Tianjin	Huamin Tianjin	Other individually immaterial subsidiaries	Total
NCI percentage	59%	20%	22%	80%	80%		
31 December 2022							
Non-current assets	5,580,235	57,495,793	12,989,871	–	–		
Current assets	1,344,148	17,430,477	897,142	–	–		
Non-current liabilities	(129,475)	(28,529,524)	(7,070,983)	–	–		
Current liabilities	(1,173,904)	(39,179,729)	(1,928,948)	–	–		
Net assets	5,621,004	7,217,017	4,887,082	–	–		
Carrying amount of NCI	3,316,424	5,508,373	210,327	–	–	10,616,413	19,651,537
Revenue	5,704,581	37,518,626	782,493	–	–		
Net profit/(loss)	352,953	(3,762,458)	434,972	–	–		
Total comprehensive income/(loss)	352,953	(4,437,026)	434,972	–	–		
Profit/(loss) allocated to NCI	208,242	(752,492)	19,727	–	–	(2,421,859)	(2,946,382)
Other comprehensive loss allocated to NCI	–	(134,914)	–	–	–	(220,638)	(355,552)
Cash flows from operating activities	697,891	4,394,426	34,367	–	–		
Cash flows from investing activities	(172,124)	(5,410,141)	(2,585,464)	–	–		
Cash flows from financing activities	(537,096)	1,417,114	2,791,278	–	–		
Net increase/(decrease) in cash and cash equivalents	(11,329)	401,399	240,181	–	–		
Dividends paid to NCI	325,012	12,000	–	–	–		

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

42 LEASES

The Group as a lessee

(a) Right-of-use assets

The carrying amounts of the Group's right-of-use assets and the movements during the year are as follows:

	Right-of-use assets					
	Buildings	Electric utility plant in service	Trans-portation facilities	Land use rights*	Others	Total
As at 1 January 2023	**238,811**	**4,064,607**	**256,615**	**13,518,195**	**920,605**	**18,998,833**
Additions	**2,306,161**	**187,271**	**–**	**1,643,126**	**612,836**	**4,749,394**
Depreciation charge	**(194,158)**	**(214,993)**	**(13,272)**	**(474,446)**	**(56,930)**	**(953,799)**
Disposals/write-off	**(16,608)**	**(395,430)**	**–**	**(162,473)**	**–**	**(574,511)**
Early termination	**(20,246)**	**(1,172,607)**	**(2,582)**	**(10,732)**	**(265)**	**(1,206,432)**
Currency translation differences	**496**	**144**	**(20,353)**	**28,665**	**2,224**	**11,176**
As at 31 December 2023	**2,314,456**	**2,468,992**	**220,408**	**14,542,335**	**1,478,470**	**21,024,661**
As at 1 January 2022	228,881	5,153,793	263,517	12,992,702	965,034	19,603,927
Additions	120,199	911,789	29,208	1,068,705	54,288	2,184,189
Depreciation charge	(109,551)	(291,909)	(17,798)	(515,710)	(58,430)	(993,398)
Disposals/write-off	–	(2,411)	–	(105,055)	(45,954)	(153,420)
Early termination	(742)	(1,707,074)	–	–	–	(1,707,816)
Currency translation differences	24	419	(18,312)	77,553	5,667	65,351
As at 31 December 2022	238,811	4,064,607	256,615	13,518,195	920,605	18,998,833

* As at 31 December 2023, the Group was in the process of applying to the government for the certificates of use rights for certain land use rights with an aggregate net book value of RMB45.75 million (31 December 2022: RMB113.67 million). Management is of the opinion that the Group is entitled to the lawful and valid occupation and use of the abovementioned land. There have been no litigations, claims or assessments against the Group for compensation with respect to the use of these land use rights as at the date of approval of these financial statements.

(Amounts expressed in thousands of RMB unless otherwise stated)

42 LEASES *(Cont'd)*

The Group as a lessee *(Cont'd)*

(b) Lease liabilities

The carrying amount of lease liabilities and the movements during the year are as follows:

	2023	2022
Carrying amount at 1 January	**6,631,875**	6,939,367
New leases	**4,159,547**	1,689,566
Accretion of interest recognised during the year	**325,744**	313,439
Currency translation differences	**6,889**	17,369
Payments	**(1,805,303)**	(947,783)
Early termination	**(1,324,705)**	(1,380,083)
Carrying amount at 31 December	**7,994,047**	6,631,875
Analysed into:		
Current portion	**1,279,447**	1,009,339
Non-current portion	**6,714,600**	5,622,536

The maturity profile of the Group's lease liabilities as at the end of the reporting period, based on the contractual undiscounted payments, is as follows:

	As at 31 December	
	2023	2022
Within 1 year	**1,500,094**	1,234,265
After 1 year but within 2 years	**831,809**	549,082
After 2 years but within 3 years	**617,588**	522,842
After 3 years	**7,838,158**	6,427,096
Subtotal	**10,787,649**	8,733,285
Unrecognised finance fees	**(2,793,602)**	(2,101,410)
Total	**7,994,047**	6,631,875

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

42 LEASES *(Cont'd)*

The Group as a lessee *(Cont'd)*

(b) Lease liabilities *(Cont'd)*

The amounts recognised in profit or loss in relation to leases are as follows:

	2023	2022
Interest on lease liabilities	**255,306**	298,798
Depreciation charge of right-of-use assets	**788,698**	985,746
Expense relating to short-term leases	**293,015**	325,667
Expense relating to leases of low-value assets	**1,133**	1,336
Total amount recognised in profit or loss	**1,338,152**	1,611,547

(c) Extension and termination options

The Group has several lease contracts that include extension and termination options. These options are negotiated by management to provide flexibility in managing the leased-asset portfolio and they are aligned with the Group's business needs. As at 31 December 2023, there were neither extension options that the Group does not expect to exercise nor significant termination options that the Group expects to exercise.

(d) Variable lease payments

The Group does not have variable lease payments that depend on an index or a rate, and amounts expected to be paid under residual value guarantees.

(e) The total cash outflow for leases is disclosed in Note 35 to these financial statements.

42 LEASES *(Cont'd)*

The Group as a lessor

(a) Finance lease

The Group's finance lease is mainly related to Ruyi Pakistan Energy, SinoSing Power and Shandong Energy Engineering.

Ruyi Pakistan Energy entered into a power purchase agreement with CPPA-G to sell all of the electricity produced with a regulated tariff mechanism approved by the Pakistan National Electric Power Regulatory Authority. In accordance with the power purchase agreement and tariff mechanism, almost all the risks and rewards in relation to the power assets were in substance transferred to CPPA-G and therefore the assets were accounted for as a finance lease to CPPA-G.

SinoSing Power entered into infrastructure lease arrangements with Neste Oil Singapore Pte Ltd., which constituted a finance lease.

Total finance lease income recognised by the Group for the year ended 31 December 2023 was RMB2,181 million (2022: RMB1,236 million).

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

42 LEASES *(Cont'd)*

The Group as a lessor *(Cont'd)*

(a) Finance lease *(Cont'd)*

As at 31 December 2023, the maturity analysis of the Group's finance lease receivables is as follows:

	As at 31 December	
	2023	2022
Within 1 year	**2,377,702**	2,206,566
After 1 year but within 2 years	**2,291,623**	2,183,144
After 2 years but within 3 years	**2,245,849**	2,151,126
After 3 years but within 4 years	**2,197,324**	2,120,666
After 4 years but within 5 years	**915,514**	1,901,463
After 5 years	**15,515,355**	15,519,074
Total undiscounted finance lease payments	**25,543,367**	26,082,039
Unearned finance income	**(16,684,526)**	(16,633,898)
Allowance for ECL	**(3,992)**	(4,383)
Total finance lease receivables as at 31 December (Notes 15 and 17)	**8,854,849**	9,443,758

(b) Operating lease

The Group leases certain property, plant and equipment under operating lease arrangements. Rental income recognised by the Group for the year ended 31 December 2023 was RMB83 million (2022: RMB93 million).

As at 31 December 2022 and 2023, the undiscounted lease payments receivable by the Group in future periods under non-cancellable operating leases with its tenants are as follows:

	As at 31 December	
	2023	2022
Within 1 year	**11,216**	52,403
After 1 year but within 2 years	**9,164**	2,098
After 2 years but within 3 years	**8,536**	650
After 3 years but within 4 years	**7,500**	446
After 4 years but within 5 years	**7,500**	193
After 5 years	**7,500**	398
Total	**51,416**	56,188

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

43 STATEMENT OF FINANCIAL POSITION OF THE COMPANY

	As at 31 December	
	2023	2022
ASSETS		
Non-current assets		
Property, plant and equipment	22,447,817	23,924,577
Right-of-use assets	914,089	1,062,811
Investments in associates and joint ventures	12,246,194	13,375,678
Investments in subsidiaries	146,031,254	138,158,396
Loans to subsidiaries	12,224,994	12,826,417
Investment property	135,520	141,030
Other equity instrument investment	500,485	574,060
Deferred income tax assets	301,727	648,659
Goodwill	106,854	106,854
Other non-current assets	23,981,328	12,250,200
Total non-current assets	218,890,262	203,068,682
Current assets		
Inventories	1,472,703	1,223,193
Other receivables and assets	7,567,365	6,377,041
Accounts receivable	3,682,514	3,762,544
Loans to subsidiaries	735,618	1,139,624
Bank balances and cash	448,820	1,008,281
Total current assets	13,907,020	13,510,683
Total assets	232,797,282	216,579,365
EQUITY AND LIABILITIES		
Equity		
Share capital	15,698,093	15,698,093
Capital surplus	25,612,315	25,679,749
Other equity instruments	79,626,169	62,083,704
Surplus reserves	8,140,030	8,140,030
Reserve funds	101,078	54,381
Retained earnings	23,063,860	22,437,629
Total equity	152,241,545	134,093,586

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

43 STATEMENT OF FINANCIAL POSITION OF THE COMPANY *(Cont'd)*

	As at 31 December	
	2023	2022
EQUITY AND LIABILITIES (Cont'd)		
Non-current liabilities		
Long-term loans	16,387,718	16,521,856
Long-term bonds	23,301,877	34,104,730
Lease liabilities	36,146	55,898
Other non-current liabilities	822,598	922,271
Total non-current liabilities	40,548,339	51,604,755
Current liabilities		
Accounts payable and other liabilities	4,314,730	5,015,453
Contract liabilities	550,522	413,191
Taxes payable	165,674	177,979
Short-term bonds	5,508,789	6,011,222
Short-term loans	17,888,386	18,293,678
Current portion of long-term loans	64,992	241,611
Current portion of long-term bonds	11,481,136	682,313
Current portion of lease liabilities	33,169	45,577
Total current liabilities	40,007,398	30,881,024
Total liabilities	80,555,737	82,485,779
Total equity and liabilities	232,797,282	216,579,365

44 SUBSEQUENT EVENTS

On 19 March 2024, the Board of Directors proposed a cash dividend of RMB0.20 (inclusive of tax) for each ordinary share amounting to RMB3,140 million for the year of 2023. This proposal is subject to the approval of the shareholders at the annual general meeting.

Except that, up to the annual report date, there was no other significant subsequent event.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB unless otherwise stated)

45 CONTINGENT LIABILITIES

Disputes over responsibilities for damage caused by vessel collision over the 400MW Offshore Wind Power Project of Shengdong Rudong Offshore Windpower Co., Ltd. ("Shengdong Rudong").

Shengdong Rudong, a subsidiary of the Company, was in charge of the construction and operation of a 400MW Offshore Wind-power Project. As stipulated by the construction contract signed between Shengdong Rudong and CCCC Third Harbor Engineering Bureau Co., Ltd. ("CCCC Third Harbor Bureau") on 18 April 2019, CCCC Third Harbor Bureau was responsible for the construction of the offshore wind farm and related construction safety management. On 1 August 2019, a vessel chartering contract was signed between CCCC Third Harbor Bureau and Nantong Ocean Water Construction Engineering Co., Ltd. ("Nantong Water Construction"). As stipulated by the contract, Vessel "Wen Qiang 8", which was owned by Nantong Water Construction, would be chartered by CCCC Third Harbor Bureau as the construction operation vessel. During the chartering period, Nantong Water Construction was responsible for the safety of Vessel "Wen Qiang 8" and the security of the personnel on board.

On 22 September 2019, in order to evade typhoon, Vessel "Wen Qiang 8" anchored nearby the #32 wind turbine pile foundation of Shengdong Rudong 400MW Offshore Wind-farm located around Nantong coastal area. Affected by strong wind, violent waves and big tides, the anchor steel cable was broken, leading to dragging-of-anchor of Vessel "Wen Qiang 8", and collision with the pipeline bridge of land-island access of Nantong Gang Yangkou Port. The pipeline bridge, bearing line pipes, and Vessel "WenQiang 8" all suffered damages from this collision accident, constituting a relatively large level of water traffic accident.

The above accident has resulted in three lawsuits, with the litigation claiming amount being approximately RMB703 million in total. Shengdong Rudong, together with other several entities, were joint defendants. The second court hearing has been held by the court in December 2023, while the judgement was not made yet. Shengdong Rudong intends to argue from many aspects that it should not bear any infringement liability, but according to the situation of prior two court hearings, considering the large amount of litigation, and joint defendants may benefit the limitation of liability for maritime claims, etc., a provision of RMB70 million was recognised in other operating expenses in 2023.

RECONCILIATION OF FINANCIAL STATEMENTS BETWEEN PRC GAAP AND IFRSs

FOR THE YEAR ENDED 31 DECEMBER 2023

(Prepared in accordance with International Financial Reporting Standards)

(Amounts expressed in thousands of RMB unless otherwise stated)

The financial statements, which have been prepared by the Group in conformity with Accounting Standards for Business Enterprises ("PRC GAAP"), differ in certain respects from those of IFRSs. The major impact of adjustments for IFRSs, on the net consolidated profit and equity attributable to equity holders of the Company, is summarised as follows:

	Consolidated profit/(loss) attributable to equity holders of the Company For the year ended 31 December		Total equity attributable to equity holders of the Company As at 31 December	
	2023	2022	**2023**	2022
Consolidated net profit/(loss)/equity attributable to equity holders of the Company under PRC GAAP	**8,445,560**	(7,387,119)	**132,138,664**	108,535,478
Impact of IFRSs adjustments:				
Differences in accounting treatment on business combinations under common control, depreciation, amortisation, disposal and impairment of assets acquired in business combinations under common control (a)	**(872,451)**	(1,097,405)	**5,109,523**	5,981,974
Difference on depreciation related to borrowing costs capitalised in previous years (b)	**(16,111)**	(22,074)	**37,640**	53,751
Difference on reserve funds (c)	**419,686**	65,208	**–**	–
Others	**(55,816)**	(57,005)	**(495,864)**	(392,700)
Applicable deferred income tax impact on the GAAP differences above (d)	**211,635**	223,548	**3,340,618**	3,128,983
Profit/equity attributable to non-controlling interests on the adjustments above	**224,957**	248,614	**(1,367,466)**	(1,642,964)
Consolidated net profit(loss)/equity attributable to equity holders of the Company under IFRSs	**8,357,460**	(8,026,233)	**138,763,115**	115,664,522

RECONCILIATION OF FINANCIAL STATEMENTS BETWEEN PRC GAAP AND IFRSs

FOR THE YEAR ENDED 31 DECEMBER 2023
(Prepared in accordance with International Financial Reporting Standards)
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(a) Differences in accounting treatment on business combinations under common control and depreciation, amortisation, disposal and impairment under common control

Huaneng Group is the parent company of HIPDC, which in turn is also the ultimate parent of the Company. The Company has carried out a series of acquisitions from Huaneng Group and HIPDC in recent years. As the acquired power companies and plants and the Company were under common control of Huaneng Group before and after the acquisitions, such acquisitions were regarded as business combinations under common control.

In accordance with PRC GAAP, for business combinations under common control, the assets and liabilities acquired in business combinations are measured at the carrying amounts of the acquirees in the consolidated financial statements of the ultimate controlling party on the acquisition date. The difference between the carrying amounts of the net assets acquired and the consideration paid is adjusted to the equity account of the acquirer. The operating results for all periods presented are retrospectively restated as if the current structure and operations resulting from the acquisition had been in existence since the beginning of the earliest year presented, with financial data of previously separate entities consolidated. The cash consideration paid by the Company is treated as an equity transaction in the year of acquisition. The subsequent adjustment of contingent consideration after the acquisition date is also accounted for as an equity transaction.

For business combinations occurred prior to 1 January 2007, in accordance with the previous PRC GAAP, when equity interests acquired were less than 100%, the assets and liabilities of the acquirees were measured at their carrying amounts. The excess of the consideration over the proportionate share of the carrying amounts of the net assets acquired was recorded as an equity investment difference and amortised on a straight-line basis for not more than 10 years. When acquiring the entire equity, the entire assets and liabilities are accounted for in a manner similar to purchase accounting. Goodwill arising from such transactions was amortised over the estimated useful lives on a straight-line basis. On 1 January 2007, in accordance with PRC GAAP, the unamortised equity investment differences and goodwill arising from business combinations under common control were written off against undistributed profits.

Under IFRSs, the Company and its subsidiaries have adopted the purchase method to account for the acquisitions above. The assets and liabilities acquired in acquisitions were recorded at fair value by the acquirer. The excess of the acquisition cost over the proportionate share of fair value of net identifiable assets acquired was recorded as goodwill. Goodwill is not amortised but is tested annually for impairment and carried at cost less accumulated impairment losses. The operating results of the acquirees are consolidated in the operating results of the Company and its subsidiaries from the acquisition dates onwards. The contingent consideration not classified as equity is measured at fair value at each reporting date with the changes in fair value recognised in profit or loss, if such changes are not measurement period adjustments.

As mentioned above, the differences in the accounting treatment under PRC GAAP and IFRSs on business combinations under common control affect both equity and profit. Meanwhile, due to different measurement bases of the assets acquired, depreciation and amortisation in the period subsequent to the acquisition will be affected which will also affect the equity and profit or loss upon subsequent disposals and impairment of such investments. Such differences will be gradually eliminated following subsequent depreciation, amortisation and disposal of the related assets.

RECONCILIATION OF FINANCIAL STATEMENTS BETWEEN PRC GAAP AND IFRSs

FOR THE YEAR ENDED 31 DECEMBER 2023
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(b) Effect of depreciation on the capitalisation of borrowing costs in previous years

In previous years, under the previous PRC GAAP, the scope of capitalisation of borrowing costs was limited to specific borrowings, and thus, borrowing costs arising from general borrowings were not capitalised. In accordance with IFRSs, the Company and its subsidiaries capitalised borrowing costs on general borrowings used for the purpose of obtaining qualifying assets in addition to the capitalisation of borrowing costs on specific borrowings. From 1 January 2007 onwards, the Company and its subsidiaries adopted PRC GAAP No.17 prospectively. The current adjustments represent the related depreciation on capitalised borrowing costs included in the cost of the related assets under IFRSs in previous years.

(c) Effect of reserve funds

Reserve funds represent safety funds. In accordance with PRC GAAP, appropriation of safety funds is recognized in profit or loss and to reserve funds. In accordance with IFRSs, unutilized safety funds are treated as appropriation from retained earnings to reserve funds and the relevant expenses are recognized in profit or loss only when it is incurred.

(d) Deferred income tax impact on GAAP differences

This represents related deferred income tax impact on the GAAP differences above where applicable.

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